Suruhanjaya Tenaga
Energy Commission

2020

LAPORAN TAHUNAN
ANNUAL REPORT

ULANG TAHUN 20
2001 - 2021
BERPADU TENAGA KE PERSADA DUNIA

LAPORAN TAHUNAN SURUHANJAYA TENAGA 2020 ini dikemukakan kepada Menteri Tenaga dan Sumber Asli selaras dengan peruntukan seksyen 33(3) Akta Suruhanjaya Tenaga 2001 iaitu "Suruhanjaya Tenaga hendaklah mengemukakan satu salinan penyata akaun yang diperakui oleh juruaudit dan satu salinan laporan juruaudit kepada Menteri Tenaga dan Sumber Asli untuk dibentangkan di Parlimen berserta dengan laporan aktiviti Suruhanjaya Tenaga bagi tahun kewangan sebelumnya".

THE ENERGY COMMISSION ANNUAL REPORT 2020 *is submitted to the Minister of Energy and Natural Resources in accordance with section 33(3) of the Energy Commission Act 2001 which stipulates that "the Energy Commission must present a copy of the audited account statement and a copy of the auditor's report to the Minister of Energy and Natural Resources to be tabled in Parliament along with a copy of the Energy Commission's activity report for the previous financial year".*

Diterbitkan oleh / *Published by:*
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No. Penerbitan ST / *ST's Publication No.*
ST(P)08/09/2021

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Sejak ditubuhkan pada 2001, Suruhanjaya Tenaga (ST) telah memberikan komitmen penuh dalam mengawal selia sektor tenaga negara dengan agenda utama iaitu melindungi keperluan pengguna dan pembekal tenaga. Selain itu, kestabilan industri tenaga juga dititikberatkan bagi memastikan pembangunan tenaga yang mampan dan berterusan. Sehubungan dengan itu, bagi pihak ST, saya dengan sukacitanya membentangkan Laporan Tahunan ST bagi tahun 2020, agar keberkesanan prestasi dan inisiatif di bawah tanggungjawab ST boleh dinilai dan ditambahbaik demi memperkukuhkan lagi industri tenaga negara pada masa akan datang.

Dengan kepercayaan yang diberikan kepada saya oleh Kerajaan dengan pelantikan sebagai Pengerusi ST pada 8 Mei 2020, saya memikul tanggungjawab yang diamanahkan bagi memastikan benteng kestabilan industri tenaga kekal terjamin dalam tempoh yang mencabar pada tahun 2020 dengan membawa ST dan industri tenaga ke tahap pencapaian yang lebih unggul.

Sepintas lalu, menurut laporan yang dikeluarkan oleh *ASEAN Centre for Energy*, jumlah permintaan tenaga elektrik telah menurun dengan mendadak pada 2020 berikutan penularan pandemik Covid-19. Di Malaysia, penurunan jumlah permintaan ini juga dilihat telah memberikan kesan terhadap perancangan serta pelaksanaan projek penjanaan dan penghantaran tenaga. Norma baharu tahun 2020 selaras dengan pelaksanaan Perintah Kawalan Pergerakan (PKP) juga

Since its establishment in 2001, the Energy Commission remains committed to safeguarding the interests of consumers and energy providers as the regulator of the energy sector. In addition, the stability of the sector was prioritised to ensure energy security and sustainability. Therefore, I am pleased to present the Annual Report 2020 on behalf of the Commission, to evaluate and improve our performance and initiatives to further strengthen the energy sector of the country for the future.

Following my appointment as Chairman of the Commission on 8 May 2020, I took on the responsibility mandated by the Government to safeguard the stability of the industry during a very challenging year, in order to elevate the Commission and the energy sector to greater heights.

According to a report published by the ASEAN Centre for Energy, total energy demand decreased drastically in 2020 as a result of the Covid-19 pandemic. In Malaysia, the drop in demand also impacted the planning and implementation of energy generation and transmission projects. The new normal and the implementation of the Movement Control Order (MCO) in 2020 led to an

telah mendatangkan kesan terhadap peningkatan penggunaan elektrik di kediaman yang memerlukan lebih banyak inisiatif peningkatan kesedaran dan komunikasi kepada orang awam. Selain itu, pendekatan untuk bantuan ekonomi juga perlu dipertimbangkan secara pemberian diskaun terhadap bil elektrik bulanan kepada sektor terpilih dan rakyat untuk meredakan impak situasi tersebut.

Saya menegaskan bahawa operasi dan skop tanggungjawab ST perlu diteruskan tanpa sebarang kelewatan dan kecicirian, terutamanya untuk menjamin kualiti pembekalan elektrik dan gas berpaip yang lebih kritikal dalam tempoh tersebut, bagi menyokong keberterusan penjanaan ekonomi bagi sektor-sektor penting, serta sektor kesihatan dalam usaha untuk menangani pandemik ini.

Berdasarkan laporan Pelan Pembangunan Penjanaan Semenanjung Malaysia (2020-2039), ketidaktentuan ekonomi Malaysia pada 2020 telah memberikan cabaran dalam formulasi ramalan dan unjuran jumlah permintaan elektrik. Justeru, senario pemulihan sederhana *(moderate recovery scenario)* telah digunakan bagi meramal pertumbuhan Keluaran Dalam Negara Kasar (KDNK) memandangkan ia memberikan pandangan yang seimbang terhadap KDNK jangka pendek dengan mengambil kira faktor ketidaktentuan akibat penularan pandemik Covid-19 dan pelaksanaan PKP serta data ekonomi daripada pelbagai agensi.

Dalam pelan ini, setiap dimensi *Energy Trilemma* diberikan penelitian lanjut bagi perancangan industri pembekalan tenaga yang kekal dinamik, dalam membuat keputusan khusus bagi mengimbangi kelestarian alam sekitar, keberterusan dan kemampuan tenaga. Oleh itu, perancangan bagi penjanaan tenaga sentiasa akan menitikberatkan dimensi *Energy Trilemma* ini dalam pelaksanaan polisi dan perancangan yang disasarkan oleh Kerajaan.

Dari sudut perancangan pembangunan kapasiti, pada 2020, **Kerajaan telah menyemak semula sasaran kapasiti Tenaga Boleh Baharu (TBB) di Malaysia dengan meningkatkan sasaran tersebut daripada 20% ke 31% menjelang 2025, dan seterusnya menyasarkan 40% menjelang 2035.** Sehubungan dengan itu, Pelan Pembangunan Penjanaan Semenanjung Malaysia (2020-2039) telah diluluskan oleh Jawatankuasa Perancangan dan Pelaksanaan Pembekalan Elektrik dan Tariff (JPPPET) yang dipengerusikan oleh YB Menteri Tenaga dan Sumber Asli, dengan mengambil kira polisi dan aspirasi

increase in electricity consumption in residences which called for greater efforts in raising awareness as well as facilitating communication with the public. To cushion the impact of the pandemic, the provision of monthly discounts on electricity bills to selected sectors and the public as a form of economic assistance was also considered.

The quality of electricity and piped gas supply was especially critical during this period. Therefore, I stressed that the Commission needed to carry out its functions without delay or oversight. This was in order to support the economic development of key sectors as well as the healthcare sector in combating the pandemic.

With reference to the Peninsular Malaysia Generation Development Plan (2020-2039), there were significant challenges to formulate electricity demand forecasts for Malaysia due to the economic uncertainties faced by the country in 2020. Thus, a moderate recovery scenario which provides a balanced view of short-term Gross Domestic Product (GDP) was utilised to predict GDP growth. This method took into account economic data from various agencies, as well as the instabilities caused by the Covid-19 pandemic and the implementation of the MCO.

As outlined in the plan, the Energy Trilemma dimensions consisting of environmental sustainability, energy security and affordability remain integral to the development of the energy supply industry. The dimensions of the Energy Trilemma will continue to be utilised in energy generation planning especially in the implementation of policies and plans as targeted by the Government.

*In 2020, **the Government reviewed the Renewable Energy (RE) capacity target in Malaysia from the initial 20% target to 31% by 2025 and 40% by 2035.** In relation to this, the Peninsular Malaysia Generation Development Plan (2020-2039) was approved by the Planning and Implementation Committee for Electricity Supply and Tariff (JPPPET) which was chaired by the YB Minister of Energy and Natural Resources, taking into account Government policies and aspirations to increase RE generation capacity in Malaysia.*

peningkatan kapasiti penjanaan TBB di Malaysia, ditambah pula dengan semakan definisi TBB terkini iaitu dengan kemasukan hidro berskala besar, agar seragam dengan definisi di peringkat ASEAN dan badan-badan antarabangsa lain.

Sehubungan dengan itu, tahun 2020 telah menyaksikan sokongan positif dan galakan yang berterusan dari Kerajaan terhadap pembangunan TBB. Seiring dengan sasaran untuk mencapai 31% kapasiti TBB menjelang 2025, peratusan kapasiti TBB pada 2020 telah menunjukkan peningkatan yang memberangsangkan dengan sumber TBB merangkumi sebanyak 15.2% daripada keseluruhan kapasiti elektrik di Semenanjung dan Sabah, iaitu peningkatan sebanyak 6.6% berbanding 4.3% pada 2019. Peningkatan paling ketara adalah pada sumber tenaga solar di mana peratusan kapasitinya telah meningkat dari 3.7% pada 2019 kepada 4.6% pada 2020.

Melalui program *Large Scale Solar by Malaysian Electricity Industry to Attract RE Investment* (LSS@MEnTARi), Kerajaan, melalui ST, telah menawarkan kuota solar terbesar berbanding sebelumnya. Jumlah keseluruhan kapasiti yang memenangi bidaan tender terbuka tersebut ialah 823.06 MWac (pada 2021). Ianya merupakan langkah pemulihan serta rangsangan ekonomi oleh Kerajaan bagi merancakkan pembangunan industri TBB negara.

Selain itu, usaha untuk meningkatkan lagi sumbangan TBB dalam campuran bahan api juga terus digiatkan menerusi skim Pemeteran Tenaga Bersih (NEM). Sasaran kuota 500 MW di bawah program NEM 2.0 telah dicapai pada November 2020 dan program NEM 3.0 pula telah diperkenalkan pada Disember 2020 dengan kuota sebanyak 500 MW bagi tempoh 2021 hingga 2023.

Bagi memastikan daya harap sistem pembekalan elektrik yang berterusan, integrasi sistem pembekalan elektrik di Malaysia bersama negara-negara jiran telah pun dijalankan sejak tahun 1980-an bagi memenuhi keperluan keberterusan, kestabilan dan daya harap pembekalan bagi negara-negara yang terlibat. Ini termasuklah penyaluran sambungtara di antara grid Tenaga Nasional Berhad (TNB) ke grid Singapura melalui *SP PowerGrid Ltd* (SPPG) dan grid TNB ke grid Thailand melalui *Electricity Generating Authority of Thailand* (EGAT), berdasarkan pertukaran tenaga antara utiliti negara yang tidak melibatkan pihak ketiga.

Pada 2020, negara-negara Lao PDR, Thailand, Malaysia dan Singapura telah memberikan komitmen untuk

The RE definition was also reviewed to include large-scale hydroelectric generation which is in line with the RE definition at the ASEAN level and in other international bodies.

The Government continues to spearhead the development of RE in 2020 to achieve the 31% capacity target by 2025. As a result, the percentage of RE capacity showcased impressive growth this year accounting for 15.2% of the total electricity capacity in the Peninsula and Sabah, which is an increase of 6.6% compared to 4.3% in 2019. The most significant increase was in solar capacity which went from 3.7% in 2019 to 4.6% in 2020.

The Government, through the Commission, also offered the largest solar quota to date via competitive bidding process under the Large Scale Solar by the Malaysian Electricity Industry to Attract RE Investment (LSS@MEnTARi) programme. The total capacity offered was 823.06 MWac (as of 2021). This was part of the Government's initiative to recover and stimulate the economy by advancing the development of the RE industry in Malaysia.

Initiatives to increase the contribution of RE to the fuel mix were further enhanced through the Net Energy Metering (NEM) scheme. The quota target of 500 MW under NEM 2.0 was fully subscribed by November 2020 which led to the introduction of NEM 3.0 in December 2020 with a quota of 500 MW for the period 2021 to 2023.

The integration of the electricity supply system between Malaysia and neighbouring countries began in the 1980s with the aim of ensuring security, stability and reliability of electricity supply among the countries involved. This includes the interconnection of the Tenaga Nasional Berhad (TNB) grid to the Singapore grid through SP PowerGrid Ltd (SPPG), as well as the TNB grid to the Thailand grid through the Electricity Generating Authority of Thailand (EGAT). Electricity supply integration is facilitated through energy exchange agreements between national utilities without the involvement of third parties.

In 2020, Lao PDR, Thailand, Malaysia and Singapore committed to a cross-border energy trade from Lao PDR to Singapore via

memulakan perdagangan tenaga rentas sempadan dari Lao PDR ke Singapura melalui Thailand dan Malaysia (LTMS) dengan kapasiti sehingga 100 MW menggunakan talian sambungtara sedia ada bagi tempoh 2022 hingga 2023. *Lao PDR-Thailand-Malaysia-Singapore Power Integration Project* (LTMS-PIP) merupakan projek lanjutan kepada projek *Lao PDR-Thailand-Malaysia Power Integration Project* (LTM-PIP) yang dilaksanakan di bawah *Energy Purchase and Wheeling Agreement (EPWA)* Fasa 1 dan Fasa 2 bermula 2018 sehingga 2021.

Pada 10 Jun 2020, Kerajaan Malaysia melalui Kementerian Tenaga dan Sumber Asli (KeTSA) telah meluluskan polisi bagi mekanisme *Cross-Border Electricity Power oleh Penjana Bebas* (IPP) ke Singapura dan Thailand. Melalui pelaksanaan mekanisme ini, *Power Plant Developer* (PPD) dapat menjana dan menjual tenaga elektrik ke Singapura dan Thailand menggunakan kemudahan sambungtara yang sedia ada atau yang baharu dengan syarat yang tertentu. ST juga kini sedang terlibat dalam sesi perbincangan bersama *Energy Market Authority* (EMA) Singapura bagi penyelarasan pelaksanaan program dalam tempoh percubaannya. Pelaksanaan program ini diharapkan akan bermula pada 2021 melalui penjualan tenaga elektrik ke Singapura.

Penularan pandemik Covid-19 telah mendatangkan kesan terhadap kemerosotan perdagangan, memperlahankan pertumbuhan ekonomi dan melonjakkan jumlah pengangguran yang tinggi. **Bagi mengurangkan impak kepada pengguna dan sektor ekonomi, Kerajaan, dengan saranan ST, telah memperkenalkan beberapa pakej pemberian diskaun bil elektrik di Semenanjung.** Program Pakej Rangsangan Ekonomi 2020 (PRE 2020) yang diumumkan pada 27 Februari 2020, merupakan pemberian diskaun sebanyak 15% bagi penggunaan elektrik untuk tempoh 1 April sehingga 30 September 2020 kepada enam (6) sektor perniagaan terpilih iaitu sektor pengendali hotel, agensi pengembaraan dan pelancongan, pejabat syarikat penerbangan tempatan, kompleks membeli belah, pusat konvensyen dan taman tema. Lanjutan dari PRE 2020, pada 16 Mac 2020 Kerajaan telah mengumumkan pemberian diskaun 2% kepada pengguna selain dari enam (6) sektor perniagaan yang dinyatakan sebelum ini iaitu kategori perdagangan, perindustrian dan pertanian spesifik serta pengguna domestik bagi penggunaan elektrik 601 kWj dan ke atas bagi tempoh 1 April sehingga 30 September 2020.

Pada 27 Mac 2020, Kerajaan sekali lagi mengumumkan pemberian diskaun bil elektrik melalui Pakej Rangsangan Ekonomi Prihatin Rakyat (PRIHATIN) kepada pengguna domestik di Semenanjung.

Thailand and Malaysia (LTMS) for the period of 2022 to 2023 with a capacity of up to 100 MW through existing interconnection lines. The Lao PDR-Thailand-Malaysia-Singapore Power Integration Project (LTMS-PIP) is an extension of the Lao PDR-Thailand-Malaysia Power Integration Project (LTM-PIP) implemented under Phase 1 and Phase 2 of the Energy Purchase and Wheeling Agreement (EPWA) from 2018 until 2021.

On 10 June 2020, the Government of Malaysia through the Ministry of Energy and Natural Resources (KeTSA) also approved a policy for the Cross-Border Electricity Power mechanism by Independent Power Producers (IPPs) to Singapore and Thailand this year. Through this mechanism, Power Plant Developers (PPD) are able to generate and sell electricity to Singapore and Thailand using the existing or new interconnection facilities subject to certain conditions. The Commission is also currently involved in discussions with the Energy Market Authority (EMA) of Singapore for the implementation of the programme during its trial period. The programme is expected to begin implementation in 2021 through the sale of electricity to Singapore.

The repercussions of the Covid-19 pandemic have led to a decline in trade, economic growth and employment rates. ***To cushion the impact on consumers and the economic sector, the Government, upon the recommendation by the Commission, introduced several electricity bill discount packages in the Peninsula.*** *The Economic Stimulus Package 2020 (PRE 2020) was announced on 27 February 2020, providing a 15% discount on electricity consumption from 1 April to 30 September 2020 to six (6) selected business sectors, namely hotel operators, outdoor and travel agencies, local airline offices, shopping centres, convention centres and theme parks. In addition, on 16 March 2020, the Government announced a 2% discount for consumers other than the six (6) aforementioned business sectors, namely specific trade, industry and agriculture categories as well as domestic consumers, for electricity consumption amounting to 601 kWh and above for the period from 1 April to 30 September 2020.*

On 27 March 2020, the Government once again announced the provision of electricity bill discounts through the Prihatin Rakyat Economic Stimulus Package (PRIHATIN) programme to domestic consumers in the Peninsula. The electricity discount ranged from 15% to 50% according to the total electricity consumed for the period from 1 April to 30 September 2020.

Pemberian diskaun elektrik tersebut adalah di antara 15% hingga 50% mengikut jumlah penggunaan elektrik masing-masing bermula daripada tempoh 1 April hingga 30 September 2020. Seterusnya, Kerajaan pada 24 Jun 2020 telah mengumumkan pelanjutan diskaun bil elektrik berperingkat (2% hingga 50%) di bawah Pakej PRIHATIN kepada semua pengguna domestik di Semenanjung dan pemberian diskaun bil elektrik sebanyak 2% kepada pengguna domestik di Sabah dan Sarawak sehingga 31 Disember 2021.

Pada 20 Jun 2020, pemberian Bantuan Prihatin Elektrik (BPE) bagi tempoh tiga (3) bulan bermula 1 April hingga 30 Jun 2020 diumumkan di mana pengguna domestik di Semenanjung menerima diskaun bil elektrik secara *one-off* sebanyak RM77 sebulan. Kerajaan juga bersetuju untuk memberikan diskaun tambahan sebanyak 8% kepada pengguna elektrik dalam julat 601-900 kWj bagi tempoh April hingga September 2020 di mana pengguna dalam julat tersebut layak menerima diskaun sebanyak 10%.

Sebagai inisiatif keprihatinan terhadap situasi kekurangan alat-alat kelengkapan perubatan serta sebagai tanda sokongan dan penghargaan ST terhadap barisan hadapan dan rakyat secara amnya, ST juga telah menyumbang kepada tabung-tabung amanah Sumbangan Perubatan Kementerian Kesihatan Malaysia dan *Mercy Mission Malaysia* untuk kegunaan petugas barisan hadapan dalam menangani pandemik Covid-19.

Sebagai tambahan, inisiatif Tanggungjawab Sosial Korporat (CSR) ST dalam usaha meningkatkan kesedaran orang awam terhadap kepentingan penggunaan tenaga elektrik dengan selamat dan cekap, sebanyak 16 program *Touchpoint* yang melibatkan 119 premis telah dijayakan pada 2020 di seluruh Semenanjung dan Sabah, yang meliputi pembaikan sistem pendawaian dan penukaran kelengkapan elektrik kepada yang cekap tenaga. Selain itu, ST juga meneruskan tanggungjawab kepada rakyat dengan berkongsi tips keselamatan elektrik dan penggunaan tenaga yang cekap di saluran radio tempatan tatkala seluruh negara bekerja dan belajar dari rumah. Kemusykilan pengguna tentang kaedah prorata yang digunakan dalam sistem pembilan elektrik semasa tempoh PKP juga diperjelaskan dengan intensif melalui kaedah komunikasi yang berkesan.

Melangkah ke hadapan, dengan harapan ekonomi akan bangkit kembali pada tahun 2021 dan seterusnya, sektor tenaga adalah diharapkan agar dapat meneruskan rancangan ke arah ekonomi rendah karbon seperti mempergiatkan pembangunan TBB selain meneruskan fokus terhadap keberterusan pembekalan tenaga elektrik dan gas.

On 24 June 2020, the Government announced an extension to electricity bill discounts under PRIHATIN, in stages (2% to 50%) to all domestic consumers in the Peninsula, as well as the provision of electricity bill discounts of 2% to domestic consumers in Sabah and Sarawak until 31 December 2021.

On 20 June, the Bantuan Prihatin Elektrik (BPE) programme was announced for a period of three (3) months from 1 April to 30 June 2020 where domestic consumers received electricity bill discounts of RM77 a month on a one-off basis. The Government agreed to the provision of additional discounts of 8% to electricity consumers within the 601-900 kWh range for the period from April to September 2020, enabling these consumers to be eligible for a 10% discount.

The Commission donated to the Ministry of Health Malaysia and Mercy Mission Malaysia's trust funds to assist frontliners in their efforts to combat the Covid-19 pandemic and reduce the shortage of medical equipment in the country. This initiative was a display of the Commission's unwavering support and appreciation to frontliners and the public.

In addition, 16 Touchpoint programmes involving wiring system repairs and installation of energy-efficient appliances in 119 premises were carried out throughout the Peninsula and Sabah in 2020. This is part of the Commission's Corporate Social Responsibility (CSR) initiative to raise public awareness of the importance of safe and efficient use of electricity. Furthermore, the Commission continued to share tips on electrical safety and energy efficiency through local radio stations. The platform was also used to provide clarification to the public concerning the prorated method used in the electricity billing system during the MCO.

With hopes that the economy will recover in 2021 and beyond, the energy sector will continue to pursue RE development and ensure the security of electricity and piped gas supply in line with its low carbon economy aspirations.

Sememangnya industri tenaga elektrik dan gas merupakan sektor penting yang perlu diberikan tumpuan bagi memastikan Malaysia kekal berdaya tahan atau *resilient*, kerana prestasi sektor tenaga sesebuah negara merupakan salah satu faktor pertimbangan yang penting terhadap perkembangan sektor perdagangan dan pelaburan dari luar yang dapat melonjakkan ekonomi negara ke tahap yang lebih kukuh.

Bagi pihak ST dan pengurusan, saya ingin mengucapkan terima kasih kepada YB Datuk Seri Dr. Shamsul Anuar Hj Nasarah, Menteri Tenaga dan Sumber Asli dan YB Datuk Ali Biju, Timbalan Menteri Tenaga dan Sumber Asli serta pihak KeTSA atas panduan dan kerjasama yang telah meningkatkan kecekapan kawal selia kami. Setinggi-tinggi tahniah diucapkan kepada Yang Berhormat dan pihak KeTSA sempena Majlis Anugerah Perkhidmatan Cemerlang Tahun 2020 pada 15 April 2021 yang lepas, di mana projek dan program di bawah sektor tenaga iaitu Program Rebat Bil Elektrik RM40 dan Program Diskaun Bil Elektrik serta Program *Malaysian Electricity to Attract Renewable Energy Investment (MEnTARI)* dan Program Pemeteran Tenaga Bersih 3.0 telah berjaya merangkul Anugerah Khas Menteri, yang nyata telah memberi impak kepada perkhidmatan awam dan negara. Saya menaruh harapan yang amat tinggi agar pengiktirafan tersebut dapat terus memotivasikan lagi warga kerja ST untuk terus bersama-sama menyokong pencapaian cemerlang dalam sektor tenaga.

Saya juga mengalu-alukan kedatangan Anggota Suruhanjaya yang baharu iaitu YBhg. Dato' Ir. Dr. Shaik Hussein Mydin, Dato' Ahmad Nazim Abd. Rahman, Datuk Adnan Seman @ Abdullah dan Puan Anis Rizana Mohd Zainudin @ Mohd Zainuddin. Saya percaya penyertaan mereka dalam barisan Anggota Suruhanjaya bakal memberi impak dalam merealisasikan visi dan misi ST.

Saya juga ingin merakamkan penghargaan kepada semua Anggota Suruhanjaya atas nasihat dan pandangan yang tidak ternilai dalam memajukan industri tenaga negara.

Kepada pihak pengurusan dan seluruh warga kerja ST, saya mengucapkan terima kasih atas komitmen dan motivasi dalam mencapai sasaran yang kian mencabar tahun demi tahun.

Sebagai penutup, saya berharap ST akan terus berazam untuk meningkatkan lagi keberkesanan, kewibawaan dan integriti sebagai badan kawal selia yang telah dipertanggungjawabkan untuk menjaga kepentingan pengguna dan pembekal tenaga.

The electricity and gas industry is an important sector that needs to be given focus to ensure that Malaysia remains competitive and resilient, as the performance of the energy sector serves as an important driver of trade and foreign investments which could further propel the nation's economy.

On behalf of the Commission and management team, I would like to extend my gratitude to YB Datuk Seri Dr. Shamsul Anuar Hj Nasarah, Minister of Energy and Natural Resources and YB Datuk Ali Biju, Deputy Minister of Energy and Natural Resources as well as KeTSA for their continuous guidance and support to the Commission which have undoubtedly enhanced our regulatory efficiency. I wish to congratulate the Minister and Deputy Minister as well as KeTSA for successfully organising the Excellent Service Awards 2020 on 15 April 2021, where initiatives under the energy sector such as the RM40 Electricity Bill Rebate Programme, the Electricity Bill Discount Programme, the Malaysian Electricity to Attract Renewable Energy Investment (MEnTARI) and Net Energy Metering 3.0 Programme received the Minister's Special Award in recognition of their impact on the public and nation. I hope that this achievement will inspire the Commission's workforce to collectively play their part in driving the industry forward.

I would also like to welcome YBhg. Dato' Ir. Dr. Shaik Hussein Mydin, Dato' Ahmad Nazim Abd. Rahman, Datuk Adnan Seman @ Abdullah and Puan Anis Rizana Mohd Zainudin @ Mohd Zainuddin as new Members of the Commission. I am confident that their knowledge and experience will further propel the organisation forward in line with the vision and mission of the Commission.

I would like to express my gratitude to the Members of the Commission for their invaluable advice and contributions to the country's energy industry.

To the management and the employees of the Commission, thank you for your continuous commitment and motivation to achieve and meet your respective targets year after year.

Last but not least, I hope that the Commission will strive to further enhance its effectiveness, credibility and integrity as a regulatory body responsible for safeguarding the interests of consumers and energy providers.

DATO' AZIAN OSMAN
Pengerusi Suruhanjaya Tenaga
Chairman of the Energy Commission

LAPORAN KETUA PEGAWAI EKSEKUTIF
CHIEF EXECUTIVE OFFICER'S REPORT

ASSALAMUALAIKUM W.B.T.
DAN SALAM SEJAHTERA

Terlebih dahulu, bagi pihak pengurusan dan warga kerja Suruhanjaya Tenaga, izinkan saya mengambil kesempatan ini untuk mengalu-alukan pelantikan YBhg. Dato' Azian bin Osman sebagai Pengerusi Suruhanjaya Tenaga berkuatkuasa mulai 8 Mei 2020. Kami yakin bahawa dengan pengalaman yang begitu luas sebagai Pengerusi dan ahli lembaga dari pelbagai latar belakang agensi Kerajaan dan perbadanan lain, YBhg. Dato' Azian akan dapat memimpin ST dan sektor tenaga negara untuk mencapai tahap prestasi yang lebih cemerlang.

Tahun 2020 merupakan tahun yang amat mencabar terhadap semua industri di seluruh dunia, apabila dikejutkan dengan penularan pandemik Covid-19, di mana sektor tenaga di Malaysia juga adalah tidak terkecuali daripada terkesan dari penularan pandemik tersebut. Impak penularan pandemik ini menuntut lebih komitmen dan tindak balas yang cekap daripada **ST selaku barisan hadapan *essential service* sektor tenaga dalam memastikan keberterusan, keselamatan dan kecekapan bekalan elektrik dan gas berpaip melalui instrumen kawal selia yang strategik dan mantap.**

First and foremost, allow me to take this opportunity on behalf of the management and the employees of the Commission to welcome YBhg. Dato' Azian bin Osman as Chairman of the Energy Commission effective 8 May 2020. We are confident that with his vast experience serving as Chairman and Board Member in various Government agencies and bodies, YBhg. Dato' Azian will lead the Commission and the country's energy sector to greater heights.

The year 2020 was a challenging one indeed as the outbreak of the Covid-19 crisis sent shockwaves through industries across the globe, and the energy sector in Malaysia is no exception. The impact of the pandemic calls for stronger commitment and prompt response from the Commission to safeguard the reliability, security and efficiency of electricity and piped gas supply through strategic and robust regulatory instruments.

Memastikan Daya Harap Bekalan Tenaga dan Kualiti Perkhidmatan Industri

Pada 2020, permintaan dan pembekalan tenaga elektrik dan gas berpaip telah menurun lantaran impak penutupan sektor ekonomi akibat penguatkuasaan Perintah Kawalan Pergerakan (PKP) yang dikuatkuasakan di seluruh negara. Jumlah tenaga elektrik di Semenanjung telah menurun kepada 125,032 GWj berbanding 130,009 GWj pada 2019. Permintaan puncak pada 2020 adalah 18,808 MW seperti yang direkodkan pada 10 Mac 2020, iaitu peningkatan sebanyak 1.3% berbanding tahun sebelumnya. Walau bagaimanapun, bacaan permintaan puncak telah beransur menjadi lebih rendah sehingga akhir 2020 setelah bermulanya PKP pada 18 Mac 2020.

Tahun 2020 menyaksikan penamatan operasi beberapa loji jana kuasa yang mengurangkan jumlah kapasiti terpasang sebanyak 1,013 MW, penambahan kapasiti berjumlah 498.47 MW pada sistem grid daripada sambungtara Lao PDR-Thailand-Malaysia (LTM, 300 MW), serta penjanaan pepasangan baharu iaitu daripada projek Solar Berskala Besar (LSS, 198.47 MW). Tiga (3) faktor ini telah menyumbang kepada jumlah keseluruhan kapasiti terpasang di Semenanjung pada 2020 yang mencatatkan penurunan kepada 25,257 MW berbanding 26,132 MW pada 2019. Secara tidak langsung, margin rizab sedia ada pada tahap 38% juga menurun kepada 32% pada 2020. Penjanaan berasaskan arang batu dan gas masing-masing mencatatkan 65% dan 29.8%, dengan hidro dan lain-lain masing-masing sebanyak 4.4% dan 0.8%.

Walaupun permintaan elektrik merekodkan penurunan, ketersediaan bekalan bahan api dan penjanaan yang stabil masih perlu diteruskan. Bagi tujuan tersebut, ST telah melaksanakan beberapa inisiatif dalam menghadapi keadaan semasa ini, termasuk mewujudkan platform pelaporan operasi secara harian oleh pihak *Grid System Operator, Single Buyer, Petronas Energy & Gas Trading* dan *Petronas Gas Control Centre* dalam memantau kestabilan grid elektrik, sistem penghantaran gas dan status simpanan bahan api.

Di Sabah, sejumlah 6,391.5 GWj tenaga elektrik telah dijana, iaitu penurunan sebanyak 3.6% berbanding 2019. Permintaan maksimum juga telah menurun sebanyak 1.4% berbanding 2019, daripada 1,001 MW kepada 987 MW pada 2020. Jumlah kapasiti boleh harap di Sabah adalah sebanyak 1,171 MW berbanding 1,277 MW pada 2019. Berdasarkan kapasiti boleh harap ini, margin rizab yang telah direkodkan adalah pada tahap 19%, iaitu di bawah paras optimum 30%, lanjutan prestasi yang kurang baik oleh stesen-stesen jana kuasa sedia ada dan

Ensuring Reliability of Energy Supply and Industry Service Quality

In 2020, the demand and supply of electricity and piped gas declined due to the closure of economic sectors following the nationwide enforcement of the Movement Control Order (MCO). Total electricity generated in the Peninsula decreased to 125,032 GWh compared to 130,009 GWh in 2019. Peak demand in 2020 increased by 1.3% to 18,808 MW as recorded on 10 March 2020, however gradually declined after the implementation of MCO on 18 March 2020.

In 2020, 498.47 MW was added to the Peninsula's grid system comprising 300 MW from the Lao PDR-Thailand-Malaysia (LTM) interconnection and 198.47 MW from new Large Scale Solar (LSS) project installations. However, the decommissioning of several power plants with total installed capacity of 1,013 MW resulted in total installed capacity in the Peninsula decreasing from 26,132 MW to 25,257 MW. The existing reserve margin also decreased from 38% to 32% in 2020. Coal and gas accounted for 65% and 29.8% of total capacity respectively, followed by hydro (4.4%) and other fuels (0.8%).

Despite the decline in electricity demand, the stable availability of fuel supply and generation remains pivotal. A number of initiatives were implemented by the Commission which include establishing a daily operations reporting platform for the Grid System Operator, Single Buyer, Petronas Energy & Gas Trading and Petronas Gas Control Centre to assist in monitoring the stability of the electricity grid, gas transmission system and fuel storage.

Meanwhile, the total electricity generated in Sabah decreased by 3.6% to 6,391.5 GWh in comparison to 2019. Peak demand also decreased by 1.4%, from 1,001 MW in 2019 to 987 MW in 2020. Total dependable capacity in Sabah was recorded at 1,171 MW compared to 1,277 MW in 2019 with a reserve margin of 19%, which was below the optimum level of 30%. This was due to the unsatisfactory performance of existing power stations, delays in generation projects and the implementation of

kekangan kapasiti penjanaan daripada projek-projek yang mengalami kelewatan selain kesan pelaksanaan PKP dan PKPB di seluruh Sabah. Trend campuran penjanaan di Sabah tidak banyak berubah di mana gas asli dan diesel masing-masing kekal pada paras 86% dan 5%, campuran hidro naik ke 6% dan campuran lain turun ke paras 3%.

Dari segi prestasi daya harap sistem, ***System Average Interruption Duration Index (SAIDI)*** **bagi sistem pembekalan elektrik di Semenanjung telah menunjukkan perkembangan positif dengan catatan SAIDI sebanyak 44.95 minit/pelanggan/tahun pada 2020 berbanding 48.13 minit/pelanggan/tahun pada 2019.** Catatan ini kekal di bawah sasaran 55 minit/pelanggan/tahun yang ditetapkan. Prestasi ini adalah turut setanding dengan negara-negara maju lain seperti Australia dan United Kingdom. Bagi Sabah, SAIDI terkumpul pada 2020 secara keseluruhannya telah menurun pada 189.44 minit/pelanggan/tahun berbanding 205.31 minit/pelanggan/tahun pada 2019. Namun, pengurangan signifikan tersebut masih belum mencapai sasaran yang telah ditetapkan iaitu pada 150 minit/pelanggan/tahun.

Penurunan SAIDI di Semenanjung adalah hasil usaha bersama memastikan sistem grid sentiasa berada dalam keadaan yang mantap.

Walau bagaimanapun, bagi menangani isu daya harap bekalan elektrik di Sabah, inisiatif di peringkat pengagihan perlu dipergiatkan memandangkan ianya menyumbang sebanyak 97.7% kepada SAIDI keseluruhan di Sabah pada 2020.

Dari aspek kualiti kuasa di Semenanjung, sebanyak 678 kejadian junaman voltan direkodkan pada 2020 oleh *Power Quality Management System (PQMS)* Tenaga Nasional Berhad (TNB), manakala dari segi kualiti perkhidmatan pemegang lesen, pemantauan ST mendapati bahawa **pematuhan terhadap Tahap Perkhidmatan yang Dijamin (GSL) pada 2020 telah menunjukkan peningkatan kepada 99.61%, dan Tahap Perkhidmatan Minimum (MSL) sebanyak 95.96%.** Pada 2020, skor Kajian Indeks Kepuasan Pelanggan TNB telah mencatatkan 8.6 mata, iaitu melebihi markah tanda aras bagi beberapa syarikat utiliti global yang lain. ST akan terus mempergiatkan usaha promosi dan libat urus bersama pengguna bagi meningkatkan lagi kualiti perkhidmatan TNB pada masa akan datang.

Bagi gas asli pula, jumlah penggunaan gas asli di Semenanjung oleh Petronas Energy and Gas Trading Sdn. Bhd, adalah sebanyak 723,181,850.62 mmBTU, manakala jumlah penggunaan gas yang dibekalkan oleh Gas Malaysia Energy and Services Sdn. Bhd. adalah sebanyak 199,853,557 mmBTU. Penggunaan gas asli di Sabah dan Labuan merekodkan bacaan sebanyak

MCO and CMCO throughout Sabah. There were no significant changes in the generation mix in the state, with natural gas and diesel accounting for 86% and 5% of total generation respectively, while hydro increased to 6% and generation by other fuels dropped to 3%.

The System Average Interruption Duration Index (SAIDI) performance of the electricity supply system in the Peninsula improved to 44.95 minutes/customer/year in 2020 compared to 48.13 minutes/customer/year in 2019 and remained well below the 55 minutes/customer/year target. This performance is also on par with other developed countries such as Australia and the United Kingdom. In Sabah, the combined SAIDI in 2020 also declined to 189.44 minutes/customer/year compared to 205.31 minutes/customer/year in 2019. Despite this noteworthy achievement, Sabah has yet to reach the SAIDI target of 150 minutes/customer/year.

The SAIDI performance in the Peninsula was the result of continuous maintenance of the grid system quality.

To address the issue of electricity supply reliability in Sabah, initiatives at the distribution level need to be intensified as it accounted for 97.7% of the overall SAIDI in Sabah in 2020.

In terms of power quality and service delivery in the Peninsula, a total of 678 voltage sag incidents were recorded in 2020 by Tenaga Nasional Berhad's (TNB) Power Quality Management System (PQMS), while compliance of the Guaranteed Service Level (GSL) and Minimum Service Level (MSL) increased to 99.61% and 95.96% respectively in 2020. Meanwhile, the 2020 TNB Customer Satisfaction Index Survey achieved a score of 8.6 points, surpassing the benchmark score of other global utility companies. The Commission will continue to facilitate consumer engagement and monitor the quality of TNB's services moving forward.

The total consumption of natural gas in the Peninsula stood at 723,181,850.62 mmBTU, supplied by Petronas Energy and Gas Trading Sdn. Bhd. whereas the total gas supplied by Gas Malaysia Energy and Services Sdn. Bhd. amounted to 199,853,557 mmBTU. In Sabah and Labuan, 672,850.77 mmBTU

672,850.77 mmBTU yang dibekalkan oleh Sabah Energy Corporation Sdn. Bhd.

Pencapaian SAIDI bagi bekalan gas berpaip untuk sektor bukan tenaga di Semenanjung oleh *Gas Malaysia Distribution* (GMD) adalah tinggi iaitu 5.775 minit/pelanggan/tahun akibat kerja-kerja penyenggaraan yang telah dijalankan pada tahun itu. Bacaan ini telah melebihi sasaran yang ditetapkan iaitu 3.4505 minit/pelanggan/tahun.

of natural gas consumed was supplied by Sabah Energy Corporation Sdn. Bhd.

Meanwhile, SAIDI for piped gas supplied to the non-energy sector in the Peninsula by Gas Malaysia Distribution (GMD) exceeded the set target of 3.4505 minutes/customer/year at 5.775 minutes/customer/year due to maintenance works carried out throughout the year.

Mengutamakan Keselamatan dan Penguatkuasaan

Secara keseluruhannya, **prestasi keselamatan elektrik menunjukkan peningkatan dengan catatan kes kemalangan elektrik terendah pada 2020 bagi lima (5) tahun ke belakang** iaitu sebanyak 45 kes. Ini menunjukkan pengurangan sebanyak 13.5% berbanding jumlah kes pada tahun sebelumnya. Analisis turut menunjukkan purata kemalangan elektrik yang berlaku bagi tempoh tersebut adalah sebanyak 52 kes setahun. Namun, jumlah kemalangan elektrik maut telah meningkat daripada 15 kes ke 28 kes pada 2020.

Pemasangan dan senggaraan yang tidak sempurna merupakan punca utama kemalangan elektrik pada 2020, diikuti aktiviti kerja orang awam berhampiran dengan pepasangan elektrik dan ketidakpatuhan pada prosedur kerja selamat.

Dalam usaha menangani isu keselamatan, **ST telah mengambil tindakan memfailkan pertuduhan di mahkamah terhadap dua (2) syarikat masing-masing atas kesalahan gagal melantik orang kompeten dan menggunakan elektrik secara curang.** Selain itu, ST juga telah menggantung satu (1) Perakuan Kekompetenan selama tiga (3) tahun kerana kesalahan kemalangan elektrik yang menyebabkan maut di Sabah, manakala tiga (3) individu lain juga digantung Perakuan Kekompetenan selama enam (6) bulan dan setahun kerana kesalahan kes kemalangan elektrik tidak maut di Terengganu.

Dari segi pemerakuan tenaga kerja yang kompeten, pada 2020, sebanyak 4,825 Perakuan Kekompetenan Elektrik telah dikeluarkan. Ini merupakan penurunan sebanyak 18.98% berbanding dengan jumlah pada 2019 iaitu sebanyak 5,955. Daripada jumlah tersebut, 91.18% atau 4,399 perakuan telah dikeluarkan melalui institusi bertauliah manakala 8.82% atau 426 perakuan dikeluarkan melalui peperiksaan kendalian ST.

Prioritising Safety and Enforcement

The year also recorded the lowest number of electrical accidents over the past five (5) years with 45 cases. This decrease of 13.5% compared to the number of cases in the previous year reflects an improvement in electrical safety performance. Analysis also showed that the average number of electrical accidents during this period was 52 cases per year. However, the number of fatal electrical accidents increased from 15 cases to 28 cases in 2020.

Improper installation and maintenance were the primary causes of electrical accidents in 2020, followed by public work activities near electrical installations and non-compliance with safe work procedures.

In combating safety-related issues, the Commission filed court charges against two (2) companies respectively for failing to appoint a competent person and for dishonest use of electricity. Furthermore, the Commission also suspended one (1) Certificate of Competency for three (3) years in relation to a fatal electrical accident in Sabah, while the Certificates of Competency of three (3) other individuals were suspended - two (2) for six (6) months and one (1) for a year - in relation to a non-fatal electrical accident case which occurred in Terengganu.

In terms of the certification of competent workforce, the Commission, in 2020, has issued a total of 4,825 Electrical Certificates of Competency. The number of Electrical Certificates of Competency issued decreased by 18.98% from 5,955 certificates in 2019. Out of the total, 91.18% or 4,399 certificates were issued through examinations facilitated by accredited institutions, while 8.82% or 426 certificates were issued through examinations facilitated by the Commission.

Sehingga 2020, jumlah Perakuan Kekompetenan Elektrik yang telah dikeluarkan oleh ST adalah sebanyak 146,784 perakuan. Sehingga 2020, ST mengawal selia sebanyak 34 kategori kelengkapan elektrik. Dalam memastikan keselamatan kelengkapan elektrik yang dijual di pasaran adalah terjamin, pelaksanaan sistem pemantauan dan penguatkuasaan berimpak tinggi terhadap aktiviti mengilang, mengimport dan menjual kelengkapan telah diberi keutamaan. Sebanyak 172 Perakuan Kelulusan Kelengkapan yang dikeluarkan kepada 83 pengimport telah dibatalkan apabila ujian konsainmen mendapati terdapat kelengkapan yang diimport tidak mematuhi standard seperti yang diluluskan oleh ST.

Seminar *Updated e-Commerce Regulations for Electrical Appliances* anjuran ST dengan kerjasama *Malaysia Digital Economy Corporation* (MDEC) telah diadakan bagi menekankan kepentingan untuk hanya mengiklan dan menjual dalam talian kelengkapan elektrik yang mempunyai label keselamatan SIRIM-ST sahaja. Tindakan penguatkuasaan akan diambil terhadap platform dan penjual dalam talian sekiranya ingkar dengan arahan yang diberikan.

Untuk sektor keselamatan gas berpaip, tiada kemalangan gas direkodkan pada 2020. Saya amat berharap prestasi ini dapat dikekalkan di samping terus berusaha untuk melakukan penambahbaikan dari semasa ke semasa dengan menjalankan sesi-sesi libat urus bersama agensi-agensi dan Pihak Berkuasa Tempatan (PBT) lain yang berkaitan. Usaha tersebut tampak membuahkan hasil, di mana jumlah kemalangan yang direkodkan dari 2005 sehingga 2020 telah menunjukkan trend penurunan.

Selaras dengan peranan ST untuk mempertingkatkan keselamatan elektrik dan gas berpaip, ST juga telah menerbitkan garis panduan lengkap khusus untuk sistem gas berpaip di premis dobi untuk rujukan semua pengusaha dobi, orang kompeten dan kontraktor gas.

Di samping itu, ST juga telah mengeluarkan sebanyak 36 Perakuan Kekompetenan Gas kepada tiga (3) kategori kelas yang berbeza, iaitu Penyelia Kejuruteraan Gas, Jurugegas Gas Kelas I dan III. Pada keseluruhannya, seramai 1,132 individu telah diberikan Perakuan Kekompetenan Gas sehingga akhir 2020.

Bagi Perakuan Kelulusan Gegasan, Perkakas dan Peralatan Gas pula, sebanyak 1,106 Perakuan Kelulusan telah dikeluarkan yang melibatkan pelbagai jenis dan

As of 2020, the total number of Electrical Certificates of Competency issued by the Commission stood at 146,784 certificates. To date, there are 34 categories of electrical equipment regulated by the Commission whereby the manufacturing, importation and sale of these equipment are actively monitored to ensure the safety of electrical equipment sold in the market. A total of 172 Certificates of Approval belonging to 83 importers were cancelled in 2020 for failing to comply with the relevant standards as set by the Commission.

The Updated e-Commerce Regulations for Electrical Appliances seminar organised by the Commission in collaboration with the Malaysia Digital Economy Corporation (MDEC) emphasised on the importance of advertising and selling electrical appliances with the SIRIM-ST safety label on online platforms and the repercussions of non-compliance.

The number of accidents recorded in the piped gas sector has been declining from 2005 to 2020 with no gas accidents recorded in 2020. The Commission will continue to conduct engagement sessions with other agencies and relevant Local Authorities to ensure that this achievement can be sustained.

In line with its efforts to enhance electrical and piped gas safety, the Commission has published comprehensive guidelines, specifically for piped gas systems in launderettes for the reference of all launderette operators, competent persons and gas contractors.

In addition, the Commission has issued a total of 36 Gas Certificates of Competency to three (3) different categories of classes, namely Gas Engineering Supervisors, Gas Fitters Class I and III. Overall, a total of 1,132 individuals have been granted Gas Certificates of Competency by the end of 2020.

A total of 1,106 Certificates of Approval for Gas Fittings, Appliances and Equipment were issued involving various types

model peralatan gas. Dibandingkan dengan 2019, terdapat peningkatan sebanyak 15% bagi Perakuan Kelulusan yang telah dikeluarkan, disebabkan terdapat pengimport dapur gas domestik yang masih baharu yang memohon untuk mendapatkan kelulusan ini.

Secara umumnya, jumlah Kertas Siasatan yang dibuka pada 2020 telah berkurangan daripada 111 Kertas Siasatan pada 2019 kepada 72 Kertas Siasatan pada 2020. Walau bagaimanapun, kategori lesen menunjukkan kenaikan jumlah yang mendadak di mana terdapat 16 kes lesen pengagihan elektrik yang dikeluarkan sepuluh (10) tahun lalu disiasat disebabkan beroperasi dalam keadaan tempoh lesen yang telah tamat dan tidak sah.

and models of gas equipment. There was an increase of 15% in the number of Certificates of Approval issued, compared with 2019, due to applications by new domestic gas stove importers.

The number of Investigation Papers opened declined from 111 in 2019 to 72 in 2020. However, the number of cases under the licence category increased significantly due to 16 cases involving electricity distribution licensees who were investigated for operating with expired and invalid licences issued ten (10) years ago.

Memperkukuhkan Keberterusan Bekalan dan Kemampanan Tenaga

Dari sudut perancangan pembangunan kapasiti untuk masa hadapan, **kapasiti terpasang bagi TBB di Semenanjung dijangkakan akan bertambah daripada 17% pada 2020 kepada 26% menjelang 2025, dan seterusnya mencecah 32% menjelang 2035.** Dalam usaha untuk mencapai sasaran 26% tersebut pada 2025, sebanyak 1,178 MW kapasiti TBB perlu dibangunkan di Semenanjung bermula dari 2021. Ini merangkumi 1,098 MW kapasiti tenaga solar dan 80 MW kapasiti TBB bukan solar. Kestabilan sistem grid dijangka akan kekal terkawal dengan kemasukan tenaga solar yang berada pada paras 24% daripada jumlah permintaan puncak menjelang 2025.

Lanjutan kemasukan TBB ini, dijangkakan dalam tempoh 19 tahun yang akan datang, pengurangan ketara akan berlaku bagi penjanaan berasaskan bahan api fosil, iaitu penurunan daripada 82% pada 2020 kepada 69% pada 2039. Pengurangan terbesar adalah bagi arang batu, iaitu daripada 42% pada 2020 kepada 36% pada 2025 dan 22% menjelang 2039. Walau bagaimanapun, kedudukan gas sebagai bahan api terbersih akan terus mendominasi campuran kapasiti ini.

Pada penghujung 2020, secara keseluruhannya, terdapat 63 loji jana kuasa dalam sistem rangkaian di Semenanjung yang masih beroperasi, yang terdiri daripada 16 loji jana kuasa gas, lapan (8) loji jana kuasa arang batu, enam (6) loji jana kuasa hidro dan 33 projek LSS. Sebanyak 12 loji LSS telah memulakan operasi komersial pada 2020, dengan beberapa lagi projek dijadualkan beroperasi dalam masa beberapa tahun akan datang.

Strengthening Energy Security and Sustainability

In terms of capacity development planning for the future, the installed capacity for RE in the Peninsula is expected to increase from 17% in 2020 to 26% by 2025 and 32% by 2035. *In order to achieve the 26% target by 2025, a total of 1,178 MW of RE capacity needs to be developed in the Peninsula starting 2021. This encompasses 1,098 MW of solar energy capacity and 80 MW of non-solar RE capacity. The grid system is expected to remain stable with solar energy penetration estimated to reach 24% of the total peak demand by 2025.*

With the inflow of RE capacity, a significant reduction in fossil fuel-based generation is expected over the next 19 years, from 82% in 2020 to 69% in 2039. The largest reduction will be in coal, from 42% in 2020 to 36% by 2025 and 22% by 2039. However, gas, which is the cleaner fuel source, will continue to dominate the capacity mix.

Overall, at the end of 2020, there were a total of 63 power plants connected to the network system in the Peninsula that are still operating, consisting of 16 gas-fired power plants, eight (8) coal-fired power plants, six (6) hydroelectric power plants and 33 LSS projects. A total of 12 LSS plants have commenced commercial operations in 2020, with several more projects scheduled to be operational in the next few years.

Untuk status kemajuan pelaksanaan Kerangka Kerja Kawal Selia Akses Pihak Ketiga (TPA), **dokumen *Access Arrangement* bagi talian paip pengagihan GMD telah dimuktamadkan dan diluluskan oleh ST pada 2020 bagi membolehkan pemegang lesen pengiriman gas mendapatkan akses untuk pengagihan gas kepada pengguna.**

Dari segi kemampanan tenaga, penurunan penggunaan elektrik di sektor komersial, perindustrian dan perlombongan lantaran pelaksanaan PKP juga telah menyebabkan jumlah keseluruhan penggunaan elektrik telah menurun kepada 110,879.3 GWj di Semenanjung manakala 5,331.8 GWj di Sabah. Walau bagaimanapun, adaptasi terhadap norma baharu seperti Bekerja Dari Rumah (BDR) dan Pengajaran dan Pembelajaran di Rumah (PDPR) di seluruh negara telah melonjakkan penggunaan elektrik domestik.

Bagi menggalakkan tadbir urus yang baik dalam amalan pengurusan tenaga, hasil aktiviti pemantauan dan penguatkuasaan yang dilakukan oleh ST mendapati pematuhan terhadap Peraturan Pengurusan Tenaga Elektrik dengan Cekap (PPTEC) 2008 meningkat pada kadar 72% bersamaan pematuhan di 1,414 pepasangan. Untuk 2020, kesemua subsektor komersial menunjukkan penurunan nilai purata Intensiti Tenaga Bangunan *(Building Energy Intensity – BEI)* berbanding 2019 dan 2018 disebabkan penutupan operasi subsektor ekonomi dan pejabat semasa tempoh PKP. **Pelaksanaan Pelan Tindakan Kecekapan Tenaga Nasional (NEEAP) juga telah berjaya mencapai penjimatan elektrik sebanyak 3.15%.**

Di peringkat domestik pula, terdapat dua (2) penambahan kelengkapan cekap tenaga di bawah Standard Prestasi Tenaga Minimum (MEPS) iaitu ketuhar gelombang mikro dan periuk nasi menjadikan jumlah kelengkapan cekap tenaga sebanyak lapan (8) kelengkapan pada 2020. Selain itu, Label Cekap Tenaga turut ditambahbaik dengan pengenalan *QR Code*, Tahun Penarafan Bintang dan Nombor Kelulusan.

Bagi menggalakkan lagi pengguna membeli kelengkapan elektrik bertaraf lima (5) dan empat (4) bintang, program *Sustainability Achieved via Energy Efficiency (SAVE 2.0)* telah diperkenalkan iaitu pemberian e-rebat sebanyak RM200 kepada isi rumah yang berkelayakan membeli pendingin hawa atau peti sejuk cekap tenaga bertaraf lima (5) dan empat (4) bintang. Program ini juga adalah dengan aspirasi Kerajaan untuk menggalakkan inisiatif-inisiatif promosi kesedaran penjimatan dan kecekapan tenaga yang secara tidak langsung membantu Malaysia mencapai sasaran pengurangan karbon.

For the implementation of the Third Party Access (TPA) Regulatory Framework, the Access Arrangement document for GMD distribution pipelines was finalised and approved by the Commission in 2020, thus granting licensed gas shippers access for gas distribution to consumers.

The decline in electricity consumption in the commercial, industrial and mining sectors during the MCO has also resulted in a decline of total electricity consumption to 110,879.3 GWh in the Peninsula and 5,331.8 GWh in Sabah. However, the nationwide adaptation of new norms such as Work from Home (WFH) and Virtual Learning (VL) have boosted domestic electricity consumption.

As a result of the monitoring and enforcement activities carried out by the Commission to promote good governance in energy management practices, the Efficient Management of Electrical Energy Regulations (EMEER) 2008 compliance rate increased in 2020 to 72% or 1,414 installations. In 2020, there was a decrease in the average value of Building Energy Intensity (BEI) in all commercial sub-sectors compared to 2019 and 2018, primarily due to the closure of economic sub-sectors and offices during the MCO period. In addition, the implementation of the National Energy Efficiency Action Plan (NEEAP) successfully achieved electricity savings of 3.15%.

In the domestic sector, two (2) energy efficient appliances namely microwave ovens and rice cookers were added under the Minimum Energy Performance Standards (MEPS) bringing the total of energy efficient appliances to eight (8) in 2020. Additionally, the Energy Efficiency Label was upgraded to include a QR Code, the Star Rating Year and Approval Number.

To encourage the purchase of energy efficient electrical appliances, e-rebates of RM200 were granted under the Sustainability Achieved via Energy Efficiency (SAVE 2.0) programme to households that purchase energy efficient air conditioners or refrigerators with five (5) and four (4) star ratings. This is in line with the Government's initiative to promote energy savings and efficiency that will indirectly support Malaysia in achieving its carbon reduction targets.

Meningkatkan Kecekapan Ekonomi dan Kemampuan

Apabila melihat industri pembekalan elektrik telah terkesan dengan PKP, Kerajaan pada 18 Disember 2020 telah membuat keputusan dan bersetuju dengan cadangan pelanjutan pelaksanaan mekanisme Kawal Selia Berasaskan Insentif (IBR) bagi tempoh kawal selia kedua (RP2) pada 2021 di Semenanjung untuk berakhir pada 31 Disember 2021. Sehubungan dengan itu, semakan kadar tarif asas elektrik di Semenanjung di bawah mekanisme IBR bagi tempoh kawal selia ketiga (RP3) telah ditangguhkan ke 2021 iaitu merujuk kepada tempoh pelaksanaan IBR RP3 daripada 2022 hingga 2024, di mana kadar purata tarif asas elektrik TNB dikekalkan pada kadar 39.45 sen/kWj bagi tempoh lanjutan RP2 (tahun 2021) tersebut.

Untuk NUR Generation Sdn. Bhd. dan NUR Distribution Sdn. Bhd. (NUR) pula, tempoh kawal selia pertama (RP1) telah bermula pada 1 Januari 2018 hingga 31 Disember 2020. Atas sebab yang sama, tempoh baharu RP2 bagi penetapan tarif elektrik di perindustrian *Kulim Hi-Tech Park* (KHTP) yang dirancangkan dari 2021 hingga 2023 telah dianjakkan kepada 2022 hingga 2024. Kadar tarif asas elektrik juga dikekalkan pada 35.70 sen/kWj seperti dalam tempoh lanjutan RP1 tersebut.

Pada 26 Ogos 2020, YB Menteri Tenaga dan Sumber Asli telah bersetuju agar pelaksanaan bagi tempoh percubaan mekanisme IBR bagi Sabah Electricity Sdn. Bhd. (SESB) dapat dimulakan bermula 1 September 2020 hingga 31 Disember 2020, iaitu selama empat (4) bulan. Di samping itu juga, tempoh percubaan ini turut mengambil kira beberapa cadangan yang telah dikemukakan oleh ST melalui memorandum bertarikh 13 November 2020. Sepanjang tempoh percubaan IBR tersebut, purata tarif asas masih dikekalkan pada kadar 34.52 sen/kWj. Dalam masa yang sama, Kerajaan Persekutuan juga menyalurkan bantuan subsidi kepada SESB dengan mengambil kira tiada kenaikan tarif elektrik di Sabah dan purata tarif asas di Sabah masih kekal pada kadar 34.52 sen/kWj. Subsidi ini adalah bagi menampung kos bekalan elektrik sebenar yang lebih tinggi daripada kadar tarif semasa. Jumlah subsidi yang diluluskan kepada SESB bagi 2020 adalah berjumlah RM600 juta yang meliputi subsidi bahan api, subsidi solar dan subsidi sokongan tarif.

Bagi melancarkan proses liberalisasi industri pembekalan gas asli, kadar purata tarif asas bagi penggunaan kemudahan-kemudahan gas dalam tempoh RP1 yang ditetapkan di bawah rangka kerja IBR bagi Regasification Terminal (Sg Udang)

Enhancing Economic Efficiency and Affordability

Taking into consideration the impact of the MCO on the electricity supply industry, the Government, on 18 December 2020, agreed to the extension of the Incentive-Based Regulation (IBR) mechanism for the second regulatory period (RP2) in the Peninsula to 31 December 2021. In line with this, the revision of the electricity base tariff rates in the Peninsula under the IBR mechanism for the third regulatory period (RP3) was postponed to 2021, with the implementation period from 2022 to 2024. During the extended period of RP2 (2021), TNB's average electricity base tariff rate will be maintained at 39.45 sen/kWh.

The First Regulatory Period (RP1) for NUR Generation Sdn. Bhd. and NUR Distribution Sdn. Bhd. (NUR) was from 1 January 2018 to 31 December 2020. Meanwhile, the RP2 period for Kulim Hi-Tech Park (KHTP) was postponed from 2021-2023 to 2022-2024. The electricity base tariff rate will also be maintained at 35.70 sen/kWh.

On 26 August 2020, the YB Minister of Energy and Natural Resources agreed to kick-start the IBR mechanism trial period for Sabah Electricity Sdn. Bhd. (SESB) to be implemented for a four-month period, starting from 1 September 2020 to 31 December 2020. In addition, the trial period also took into account proposals submitted by the Commission through a memorandum dated 13 November 2020. During this IBR trial period, the average base tariff was maintained at 34.52 sen/kWh. At the same time, the Federal Government provided assistance in the form of subsidies to SESB, taking into account zero increments in electricity tariffs in Sabah and the maintaining of the average base tariff at 34.52 sen/kWh. The subsidies were to cover the actual electricity supply costs that were higher than the current tariff rates. In 2020, the total subsidies approved for SESB was RM600 million covering fuel, solar and tariff support subsidies.

As part of the natural gas supply market liberalisation initiative in Malaysia, the average base tariff rate for the utilisation of gas facilities namely Regasification Terminal (Sg Udang) Sdn. Bhd.

Sdn. Bhd. (RGTSU), Pengerang LNG (Two) Sdn. Bhd. (RGTP), Petronas Gas Bhd. (PGB) dan GMD telah mula dikuatkuasakan pada 1 Januari 2020 dan akan berakhir pada 31 Disember 2022. Tempoh RP1 ini merupakan tempoh pemantauan ke atas petunjuk-petunjuk prestasi yang ditetapkan dan pemberian ganjaran atau penalti tidak akan dilaksanakan dalam tempoh tersebut. Tempoh RP1 juga merupakan tempoh bagi menambahbaik serta mengkaji kesesuaian petunjuk-petunjuk prestasi tersebut sebelum dilaksanakan sepenuhnya dalam tempoh RP2.

Pada 2017, Kerajaan telah memutuskan agar harga gas bagi sektor elektrik dinaikkan secara automatik sebanyak RM1.50 per mmBtu bagi setiap enam (6) bulan bermula Julai 2017 sehingga mencapai harga pasaran iaitu pada satu rujukan formula berindekskan harga Gas Asli Cecair (LNG). Keputusan ini terpakai sehingga 2020 yang mana semakan semula perlu dibuat ke atas penetapan harga bermula 2021.

Jawatankuasa Pemantauan Harga dan Kos Arang Batu yang dipengerusikan oleh ST telah bersidang sebanyak empat (4) kali pada 2020 dalam melaksanakan peranannya untuk memantau kos perolehan arang batu oleh TNB Fuel Services Sdn. Bhd. (TNBF). Jawatankuasa ini turut menetapkan kadar *Applicable Coal Price* (ACP) iaitu harga arang batu yang diisytiharkan kepada stesen-stesen jana kuasa setiap suku tahunan bagi pembekalan arang batu untuk tujuan penjanaan elektrik di Semenanjung. Berbanding 2019, harga arang batu yang ditetapkan bagi 2020 menunjukkan penurunan berikutan aktiviti ekonomi global yang perlahan.

Bagi 2020, jumlah kapasiti yang diperolehi melalui penyertaan *New Enhanced Dispatch Arrangement (NEDA)* masih kekal iaitu sebanyak 41.5 MW yang telah disertai oleh tiga (3) peserta iaitu *Northern Utility Resources* (NUR), *Petronas Chemical Fertilizer Kedah* (PCFK), dan Perusahaan Sadur Timah Malaysia (PERSTIMA). Bagi merancakkan lagi penyertaan NEDA dari kalangan penggiat industri, ST dan *Single Buyer* telah menganjurkan sesi libat urus bersama peserta yang berpotensi untuk menyertai program NEDA. Selain itu, bengkel bagi menerangkan sistem M*arket Participant Interface (MPI)* yang telah dibangunkan oleh *Single Buyer* juga telah diadakan bersama pihak industri. Sesi ujian percubaan bersama pihak industri juga telah dijalankan bagi menilai prestasi MPI sebelum ianya dilancarkan. Secara tidak langsung, ujian ini juga dapat mempromosikan program NEDA di kalangan penggiat industri. Pelaksanaan inisiatif-inisiatif ini adalah diharapkan dapat meningkatkan kesedaran dan keterbukaan penggiat industri kepada program NEDA.

(RGTSU), Pengerang LNG (Two) Sdn. Bhd. (RGTP), Petronas Gas Bhd. (PGB) and GMD under IBR RP1 came into effect on 1 January 2020 and will end on 31 December 2022. The RP1 serves as a monitoring period for the performance indicators set, while rewards or penalties were not implemented during the period. In addition, the RP1 was also a period to further improve and review the suitability of the performance indicators before being fully implemented in RP2.

In 2017, the Government decided that gas prices for the electricity sector shall be increased automatically by RM1.50 per mmBtu every six (6) months starting from July 2017 until they reach the market price on the Liquefied Natural Gas (LNG) price reference index formula. This decision was applicable until 2020 whereby a price setting review will be conducted starting 2021.

The Coal Price and Cost Monitoring Committee chaired by the Commission convened four (4) times this year as part of its role to monitor the costs of coal procurement by TNB Fuel Services Sdn. Bhd. (TNBF). The committee also sets the Applicable Coal Price (ACP), which are the coal prices declared to power stations quarterly for the supply of coal for electricity generation in the Peninsula. Coal prices set for 2020 showed a decline in comparison to 2019 as a result of sluggish global economic activity.

In 2020, the total capacity generated through the New Enhanced Dispatch Arrangement (NEDA) remained at 41.5 MW across three (3) participants, namely Northern Utility Resources (NUR), Petronas Chemical Fertilizer Kedah (PCFK) and Perusahaan Sadur Malaysian Tin (PERSTIMA). The Commission and Single Buyer have organised engagement sessions with potential participants to promote the programme and attract the participation of industry players. The purpose of these initiatives was to increase the awareness and openness of

Sistem MPI juga akan dilancarkan pada Januari 2021 yang dijangka bakal meningkatkan lagi penyertaan ke program NEDA.

Sebagai usaha untuk mengurangkan impak penularan pandemik Covid-19 kepada pengguna dan sektor ekonomi, Kerajaan dengan saranan ST, juga telah memperkenalkan beberapa pakej pemberian diskaun bil elektrik seperti Pakej Rangsangan Ekonomi 2020 (PRE 2020), Pakej Rangsangan Ekonomi Prihatin Rakyat (PRIHATIN) dan Program Bantuan Prihatin Elektrik (BPE).

industry players to the NEDA programme. The MPI system will also be launched in January 2021 which is expected to further increase participation in the programme.

Upon recommendation by the Commission, electricity bill discounts were introduced by the Government to consumers under the Economic Stimulus Package 2020 (PRE 2020), the Prihatin Rakyat Economic Stimulus Package (PRIHATIN) and the Bantuan Prihatin Elektrik (BPE) Programme with an aim to cushion the impact of the Covid-19 pandemic on consumers and the economic sector.

Menambahbaik Kualiti Kawal Selia dan Pelaksanaan Perkhidmatan

Pelbagai inisiatif penambahbaikan telah dilaksanakan ke arah meningkatkan lagi keberkesanan aktiviti kawal selia ST bagi memenuhi keperluan semasa dan juga masa hadapan sektor tenaga negara.

Tahun 2020 mencatatkan peningkatan drastik penerimaan aduan iaitu sebanyak 5,421 aduan berbanding 2,950 aduan pada 2019. Peningkatan sebanyak 83.7% ini berlaku berikutan ramai pengguna merasakan bil elektrik yang diterima adalah lebih tinggi dalam tempoh PKP. Dalam menangani keluhan ini, pengguna telah diperjelaskan tentang kaedah prorata yang digunakan dalam sistem pembilan elektrik semasa tempoh PKP, agar pengguna mendapat pemahaman yang lebih jelas tentang kaedah dan pengiraan bil elektrik. **Hasil komunikasi intensif dan inisiatif diskaun yang diberikan oleh Kerajaan, bilangan aduan berkaitan kenaikan bil elektrik telah berjaya dikurangkan.** Daripada jumlah 5,421 aduan yang diterima, sebanyak 4,916 atau 91% aduan telah diselesaikan pada akhir Disember 2020. Berdasarkan pengalaman ini, ST wajar untuk terus menganalisa aduan-aduan yang diterima untuk pendekatan proaktif, memandangkan peningkatan aduan merupakan satu pengukur bagi penerimaan khalayak umum terhadap fungsi dan peranan ST.

Dalam menilai kualiti perkhidmatan ST, pada 2020 ST turut melaksanakan kaji selidik tahunan dengan lebih meluas untuk mengukur Indeks Kepuasan Pelanggan (CSI) ST. Hasil kaji selidik mendapati peratusan tahap kepuasan pelanggan ST bagi 2020 adalah sebanyak 92.37% berbanding 86.8% pada 2019. Sehubungan dengan itu, ST adalah diharapkan agar dapat terus mempertingkatkan kualiti perkhidmatannya dari aspek kemudahan, layanan, masa dan instrumen kawal selia bagi meningkatkan pencapaian CSI pada tahun-tahun akan datang.

Improvement of Regulatory Quality and Service Delivery

Various initiatives have been implemented to further enhance the effectiveness of the Commission's regulatory activities to meet the current and future needs of the country's energy sector.

There was a surge in the number of complaints received in 2020 of 5,421 complaints compared to 2,950 complaints in the previous year. This was an increase of 83.7% and was mainly due to complaints of higher electricity bills during the MCO period. The Commission was committed to addressing these complaints by clarifying the methods and calculation of electricity bills, specifically the prorated method used during the MCO period. ***As a result of effective communication and the discount package initiatives provided by the Government, the number of complaints related to the increase in electricity bills was successfully reduced.*** *A total of 4,916 or 91% of complaints were resolved by the end of December 2020. Based on this experience, the Commission will continue taking a proactive approach towards analysing complaints received as an effective measure of public acceptance of its role and functions.*

To assess the quality of services in 2020, the Commission conducted an extensive survey to measure Customer Satisfaction Index (CSI). The results showcased an increase in CSI of 92.37% compared to 86.8% in 2019. Moving forward, the Commission aims to improve its service quality in the areas of facilities, services, time and regulatory instruments, hence, continuously enhance its CSI performance.

Antara inisiatif yang dilaksanakan untuk mempertingkatkan kualiti perkhidmatan termasuklah Pensijilan Pemantauan Kedua ISO 9001:2015 oleh *Lloyds Register Quality Assurance* (LRQA) serta mengekalkan dan memperbaiki Sistem Pengurusan Kualiti di ST secara berterusan. Selain itu, ianya memastikan pematuhan proses kerja di ST adalah selaras dengan piawaian standard ISO 9001:2015. Pensijilan ini bermakna Sistem Pengurusan Kualiti ST telah melakukan pendekatan yang sewajarnya serta diperakui secara global dalam memberikan penekanan untuk memperbaiki proses kerja secara berterusan dan menguruskan risiko bagi memenuhi keperluan pemegang taruh.

Selain itu, pada 2020, **ST terus menambahbaik perundangan pembekalan tenaga di bawah bidang kuasa ST agar kekal relevan dengan peredaran masa dan industri**, di mana cadangan pindaan kepada Peraturan-Peraturan Elektrik 1994, Peraturan-Peraturan Bekalan Lesen 1990 dan Peraturan-Peraturan Bekalan Gas 1997 telah dibentangkan dan dikemukakan kepada kementerian yang berkaitan untuk tindakan selanjutnya.

Seterusnya, bagi menjamin pelaksanaan proses kerja serta penyampaian perkhidmatan yang berkesan di ST, Pelan Pengurusan Risiko ST juga dibangunkan untuk mengenalpasti risiko-risiko serta tindakan-tindakan kawalan, alternatif dan penambahbaikan dapat dirancang dalam mencegah serta mengawal risiko tersebut daripada terus mengakibatkan kesan yang buruk kepada ST.

Inisiatif hubungan dua hala dan kerjasama strategik dengan pelbagai pihak juga terus dipertingkatkan. Selain menghadiri mesyuarat-mesyuarat kemajuan usahasama serantau, pelaksanaan sesi-sesi libat urus bersama pemegang taruh serta penganjuran bengkel penambahbaikan, ST juga telah menandatangani *Memorandum of Understanding* (MoU) bersama *Energy Market Authority* (EMA), Singapura pada 2020 bertujuan meningkatkan kerjasama antara kedua-dua agensi kawal selia tenaga, khususnya dalam bidang tenaga dengan lebih bersepadu dalam pembangunan ekonomi serantau.

Selaras dengan fungsi ST sebagai sumber rujukan industri, pelbagai sesi perbincangan dan perkongsian data tenaga telah diadakan di peringkat tempatan dan luar negara dalam usaha untuk menyalurkan data tenaga negara dengan lebih meluas. Pada 2020, bilangan kunjungan ke portal Hab Maklumat Tenaga Malaysia (MEIH) adalah sebanyak 98,903 kali dari serata dunia.

The Recertification of ISO 9001: 2015 by Lloyds Register Quality Assurance (LRQA) and the maintenance of the Quality Management System are part of the Commission's initiatives to enhance the quality of its services. In addition, the initiative was to ensure compliance with the Commission's work processes in line with the ISO 9001: 2015 standard. This certification demonstrates the robustness of the Commission's QMS as well as its continuous efforts to improve work processes and manage risks to meet the needs of its stakeholders.

*Furthermore, **the Commission continues to review the energy supply regulations under its jurisdiction**. In 2020, the proposed amendments to the Electricity Regulations 1994, Licensee Supply Regulations 1990 and Gas Supply Regulations 1997 were presented and submitted to the relevant ministries.*

Furthermore, the Commission also developed an Enterprise Risk Management Plan to ensure the effective implementation of work processes and service delivery. Through this plan, risks, control measures, alternatives and improvements can be planned to prevent and control these risks from adversely impacting the Commission.

In 2020, a Memorandum of Understanding (MoU) was signed between the Commission and the Energy Market Authority (EMA), Singapore to enhance cooperation in the field of energy. Apart from participating in regional joint venture development meetings, the Commission also conducted engagement sessions and organised relevant workshops with stakeholders. This in line with the Commission's commitment to strengthen bilateral relations and strategic cooperation with relevant parties.

Various discussion sessions and energy data cooperation were held to facilitate the exchange of energy data at the local and international level. In 2020, the number of visits to the Malaysia Energy Information Hub (MEIH) portal from around the world stood at 98,903.

Pembangunan Kapasiti dan Keupayaan

Pembangunan kapasiti dan keupayaan tenaga kerja merupakan dua (2) agenda utama yang dititikberatkan dalam pelan pembangunan korporat ST bagi memastikan ST sentiasa berkompetensi dan mampu untuk menjalankan fungsi dan tanggungjawab sebagai badan kawal selia industri tenaga negara. Menjelang akhir 2020, ST mempunyai kekuatan seramai 356 warga kerja di seluruh Ibu Pejabat dan Pejabat-pejabat Kawasan di Semenanjung dan Sabah, dari pelbagai latar belakang jurusan pendidikan dan pengalaman bagi menyokong struktur organisasi ST.

Pembangunan keupayaan warga kerja juga diberikan fokus bagi memastikan warga kerja terus-menerus dilengkapkan dengan pengetahuan, kemahiran, kompetensi dan tingkah laku yang tepat dalam keperluan melahirkan warga kerja yang berkepakaran tinggi, bermotivasi dan komited. Pada 2020, sebanyak 122 program latihan telah dilaksanakan meliputi modul bilik darjah dan dalam talian, yang merupakan satu norma baharu di ST.

Bagi mengukur Indeks Kepuasan Kakitangan ST, Kajian Soal Selidik Peranan, Persekitaran dan Pembangunan (Kajian 3P) juga telah dilaksanakan dan hasil kajian mendapati skor purata Indeks Kepuasan Kakitangan ST telah mencatatkan bacaan sebanyak 3.65%.

Selain itu juga, seiring dengan usaha Kerajaan untuk membanteras isu rasuah dalam sektor perkhidmatan awam, ST telah membangunkan Pelan Tindakan Anti Rasuah Organisasi (OACP) 2020-2024 untuk menyumbang kepada peningkatan kecekapan dan ketelusan dalam tadbir urus dan aktiviti di ST.

Akhir sekali, saya ingin mengucapkan terima kasih dan setinggi penghargaan kepada semua warga kerja ST kerana telah melaksanakan tanggungjawab dengan penuh komitmen sebagai *#TeamST* untuk memberikan perkhidmatan yang terbaik kepada semua pemegang taruh ST. Saya percaya tuan-tuan dan puan-puan akan terus mencapai prestasi yang lebih tinggi dengan moto *"Be energised, Be Motivated and Be Engaged"* ke arah membawa ST sebagai sebuah badan kawal selia sektor tenaga yang bertaraf dunia.

Terima kasih dan salam hormat.

Capacity and Capability Building

Workforce capacity and capability building is a fundamental component of the Commission's corporate development plan to ensure that it is able to carry out its responsibilities as the national regulator of the energy industry. In 2020, the Commission consisted of 356 employees with diverse educational backgrounds and expertise at its Head Office and Regional Offices in the Peninsula and Sabah.

Capability building is vital to ensure that employees are equipped with the right knowledge, skills, competencies and behaviours required of a highly skilled, motivated and committed employee. By the end of 2020, the Commission had conducted a total of 122 training programmes consisting of classroom and online modules.

To measure the Employee Satisfaction Index, the Peranan, Persekitaran and Pembangunan Study (3P Study) was conducted by the Commission with the average score of 3.65%.

In addition, the Organisational Anti-Corruption Action Plan (OACP) 2020-2024 was developed to increase efficiency and transparency in all activities of the Commission in line with the Government's efforts to combat corruption in the public services sector.

Finally, I would like to express my highest gratitude and appreciation to all the employees of the Commission for their relentless commitment to providing the highest standards of service quality to the stakeholders of the Commission. I believe that by staying true to the #TeamST spirit and the "Be energised, Be Motivated and Be Engaged" motto, we can elevate the Commission to greater heights as a world-class energy regulatory body.

Thank you and best regards.

ABDUL RAZIB DAWOOD
Ketua Pegawai Eksekutif Suruhanjaya Tenaga
Chief Executive Officer of the Energy Commission

MAKLUMAT KORPORAT
CORPORATE INFORMATION

VISI
VISION

Suruhanjaya Tenaga adalah badan kawal selia sektor tenaga bertaraf dunia yang berkesan serta berwibawa.
The Energy Commission is a world-class energy regulator that is effective and authoritative.

MISI
MISSION

Suruhanjaya Tenaga berazam untuk mengimbangi keperluan pengguna dan pembekal tenaga bagi memastikan pembekalan yang selamat dan berdaya harap pada harga yang berpatutan, melindungi kepentingan awam, dan menggalakkan pembangunan ekonomi dan pasaran yang kompetitif dalam persekitaran yang lestari.
The Energy Commission aims to balance the needs of consumers and providers of energy to ensure safe and reliable supply at reasonable prices, protect public interest, and foster economic development and competitive markets in an environmentally sustainable manner.

NILAI TERAS
CORE VALUES

- **KECEMERLANGAN**
  EXCELLENCE
- **KEBOLEHARAPAN**
  RELIABILITY
- **KETULUSAN DAN KESAKSAMAAN**
  SENSE OF FAIRNESS AND FAIRPLAY

MENGENAI SURUHANJAYA TENAGA
ABOUT THE ENERGY COMMISSON

Ditubuhkan di bawah Akta Suruhanjaya Tenaga 2001, Suruhanjaya Tenaga (ST) bertanggungjawab mengawal selia sektor tenaga, khususnya industri pembekalan elektrik dan gas berpaip di Semenanjung Malaysia dan Sabah.

A statutory body established under the Energy Commission Act 2001, Suruhanjaya Tenaga (ST) or the Energy Commission is responsible for regulating the energy sector, specifically the electricity and piped gas supply industries in Peninsular Malaysia and Sabah.

Mengambil alih peranan Jabatan Bekalan Elektrik dan Gas, ST mula beroperasi sepenuhnya pada 1 Januari 2002. Fokus utama ST adalah bekalan elektrik dan gas yang berdaya harap, kos yang munasabah dan selamat digunakan.

Taking over the role of the Department of Electricity and Gas Supply, the Energy Commission started its operations on 1 January 2002. The main focus of the Commission is the reliability of electricity and gas supply, reasonable costs and safety.

Peranan ST terbahagi kepada tiga (3) iaitu Kawal Selia Ekonomi, Kawal Selia Teknikal dan Peraturan Keselamatan.

The roles of the Energy Commission are divided into three (3), namely Economic Regulation, Technical Regulation and Safety Regulation.

KAWAL SELIA EKONOMI
ECONOMIC REGULATION

Untuk menggalakkan keekonomian dalam penjanaan, penghantaran, pengagihan, pembekalan dan penggunaan elektrik dan dalam retikulasi dan penggunaan gas; menggalakkan persaingan; membolehkan pengendalian pasaran yang adil dan cekap dan mencegah penyalahgunaan monopoli atau kuasa pasaran dalam industri elektrik dan gas berpaip.
To promote economy in the generation, transmission, distribution, supply and use of electricity and in the reticulation and use of gas; promote competition; enable fair and efficient market conduct and prevent the misuse of monopoly or market power in the electricity and piped gas industries.

KAWAL SELIA TEKNIKAL
TECHNICAL REGULATION

Untuk memastikan keselamatan, daya harap, kecekapan dan kualiti bekalan dan perkhidmatan dalam industri elektrik dan bekalan gas berpaip.

To ensure security, reliability, efficiency and quality of supply and services in the electricity and piped gas supply industries.

PERATURAN KESELAMATAN
SAFETY REGULATION

Untuk melindungi industri, pengguna dan orang awam dari bahaya yang timbul dari penjanaan, penghantaran, pengagihan, pembekalan dan penggunaan elektrik, serta pengagihan, pembekalan dan penggunaan gas berpaip.

To protect the industry, consumers and public from dangers arising from the generation, transmission, distribution, supply and use of electricity and the distribution, supply and use of piped gas.

FUNGSI DAN KUASA SURUHANJAYA TENAGA
FUNCTIONS AND POWERS OF THE ENERGY COMMISSION

Suruhanjaya Tenaga hendaklah mempunyai segala fungsi yang dipertanggungkan ke atasnya di bawah undang-undang pembekalan tenaga dan hendaklah juga mempunyai fungsi-fungsi yang berikut:

The Energy Commission shall have all the functions imposed on it under the energy supply laws and shall also have the following functions:

- Menasihati Menteri tentang segala perkara yang berkenaan dengan objektif dasar kebangsaan bagi aktiviti pembekalan tenaga, pembekalan dan penggunaan elektrik, pembekalan gas melalui talian paip dan penggunaan gas.
  Advises Ministers on all matters concerning the national policy objectives for energy supply activities, the supply and use of electricity, the supply of gas through pipelines and the use of gas.
- Mengawal selia tarif elektrik dan gas berpaip dan kualiti perkhidmatan pembekalan, serta menggalakkan persaingan dan mencegah penyalahgunaan monopoli atau kuasa pasaran.
  Regulates electricity and piped gas tariffs and the quality of supply services, as well as promote competition and prevent the misuse of monopoly or market power.
- Menggalakkan amalan baik, serta penyelidikan, pembangunan dan inovasi dalam industri pembekalan elektrik dan gas berpaip.
  Promotes good practices, as well as research, development and innovation in the electricity and piped gas industries.
- Merancang dan membangunkan undang-undang, peraturan, kod, garis panduan dan program bagi memastikan keselamatan, pembangunan dan fungsi yang teratur dalam industri pembekalan elektrik dan gas berpaip.
  Plans and develops laws, regulations, rules, codes, guidelines and programmes for the safety, orderly development and functioning of the electricity and piped gas industries.
- Meluluskan lesen dan perakuan bagi pembekal elektrik dan gas berpaip, orang kompeten elektrik dan gas, pelatih, kontraktor, kelengkapan dan pemasangan, syarikat yang memberikan perkhidmatan tenaga dan pengurus tenaga.
  Licenses and certifies electricity and piped gas suppliers, competent electricity and gas personnel, training providers, contractors, equipment and installations, energy service companies and energy managers.
- Memantau dan mengaudit prestasi dan pematuhan pembekal yang berlesen dan bertauliah, pembekal perkhidmatan, pemasangan, pengimport kelengkapan, pengeluar dan penjual.
  Monitors and audits performance and compliance of licensed and certified suppliers, service providers, installations, equipment importers, manufacturers and retailers.
- Menyiasat aduan, kemalangan, kesalahan dan isu industri; dan menguatkuasa pematuhan.
  Investigates complaints, accidents, offences and industry issues; and enforces compliance.

ANGGOTA SURUHANJAYA TENAGA
ENERGY COMMISSION MEMBERS

DATO' AZIAN OSMAN
Pengerusi
Chairman

Dilantik pada 8 Mei 2020
Appointed on 8 May 2020

PUAN NOOR AFIFAH ABDUL RAZAK

PUAN ANIS RIZANA MOHD ZAINUDIN @ MOHD ZAINUDDIN

Dilantik pada 5 Disember 2020
Appointed on 5 December 2020

DATO' DR. ROSLI MOHAMED

DATO' IR. DR. SHAIK HUSSEIN MYDIN

Dilantik pada 14 Mei 2020
Appointed on 14 May 2020

ENCIK ABDUL RAZIB DAWOOD
Ketua Pegawai Eksekutif
Chief Executive Officer

DATO' AHMAD NAZIM ABD RAHMAN

Dilantik pada 14 Mei 2020
Appointed on 14 May 2020

DATUK ADNAN SEMAN @ ABDULLAH

Dilantik pada 14 Mei 2020
Appointed on 14 May 2020

DATUK IR. AHMAD FAUZI HASAN
Pengerusi
Chairman
Tamat Perkhidmatan pada
31 Mac 2020
Concluded Service on
31 March 2020

DR. MOHAMMED SHAHARIN UMAR

Tamat Perkhidmatan pada
31 Oktober 2020
Concluded Service on
31 October 2020

DR. ISMAIL SIMON CHARLES

Tamat Perkhidmatan pada
3 Jun 2020
Concluded Service on
3 June 2020

DATUK ANUAR AHMAD

Tamat Perkhidmatan pada
14 Mac 2020
Concluded Service on
14 March 2020

DATUK DR. ONG PENG SU

Tamat Perkhidmatan pada
6 Mei 2020
Concluded Service on
6 May 2020

DISTINGUISHED PROF. DATO' DR. RAJAH RASIAH

Tamat Perkhidmatan pada
6 Mei 2020
Concluded Service on
6 May 2020

PUAN ADLIN ABDUL MAJID

Tamat Perkhidmatan pada
6 Mei 2020
Concluded Service on
6 May 2020

MESYUARAT SURUHANJAYA TENAGA 2020
ENERGY COMMISSION MEETINGS 2020

Anggota Suruhanjaya Tenaga telah bermesyuarat sebanyak 14 kali sepanjang 2020 bagi memastikan tugas dan fungsi kawal selia aktiviti pembekalan tenaga dilaksanakan mengikut kehendak undang-undang dengan berkesan dan berwibawa. Suruhanjaya Tenaga mempunyai enam (6) Jawatankuasa, iaitu Jawatankuasa Bersama Pelesenan (Pengurusan dan Suruhanjaya Tenaga), Jawatankuasa Kewangan dan Tender, Jawatankuasa Nominasi, Remunerasi dan Prestasi, Jawatankuasa Audit dan Integriti, Jawatankuasa Teknikal dan Jawatankuasa Ekonomi.

The Commission Members convened for a total of 14 meetings in 2020 to ensure effective and authoritative implementation of regulatory roles and functions in accordance with the law. The Commission has six (6) Committees which include the Licensing Committee (Management and the Commission), the Financial Committee and Tender, the Nomination, Remuneration and Performance Committee, the Audit and Integrity Committee, the Technical Committee and the Economic Committee.

MESYUARAT SURUHANJAYA TENAGA
ENERGY COMMISSION MEETINGS

Januari *January*	● 30
Mac *March*	● 12
Mei *May*	● 12 ● 20
Jun *June*	● 11
Julai *July*	● 16 ● 28
Ogos *August*	● 13 ● 26
September *September*	● 10
Oktober *October*	● 13
November *November*	● 5 ● 26
Disember *December*	● 22

MESYUARAT JAWATANKUASA BERSAMA PELESENAN (PENGURUSAN DAN SURUHANJAYA TENAGA) (JKBP)
LICENSING COMMITTEE MEETINGS (MANAGEMENT AND THE ENERGY COMMISSION)

Januari *January*	● 22
Mac *March*	● 4
Jun *June*	● 9
Julai *July*	● 14 ● 27
Ogos *August*	● 10 ● 24
September *September*	● 9
Oktober *October*	● 5
November *November*	● 3
Disember *December*	● 10 ● 16

MESYUARAT JAWATANKUASA EKONOMI SURUHANJAYA TENAGA (JKE)
ENERGY COMMISSION ECONOMIC COMMITTEE MEETINGS

Januari *January*	● 23
Mac *March*	● 9
Ogos *August*	● 19
Oktober *October*	● 8
November *November*	● 3
Disember *December*	● 8

MESYUARAT JAWATANKUASA KEWANGAN DAN TENDER SURUHANJAYA TENAGA (JKKT)
ENERGY COMMISSION FINANCIAL COMMITTEE AND TENDER MEETINGS

Januari *January*	● 22
Mac *March*	● 5
Julai *July*	● 13
Ogos *August*	● 11
Oktober *October*	● 12 ● 19
November *November*	● 23

MESYUARAT JAWATANKUASA NOMINASI, REMUNERASI DAN PRESTASI SURUHANJAYA TENAGA (JKRN&P)
ENERGY COMMISSION NOMINATION, REMUNERATION AND PERFORMANCE COMMITTEE MEETINGS

Januari *January*	● 22
Oktober *October*	● 1
Disember *December*	● 9

MESYUARAT JAWATANKUASA AUDIT DAN INTEGRITI SURUHANJAYA TENAGA (JKAI)
ENERGY COMMISSION AUDIT AND INTEGRITY COMMITTEE MEETINGS

Januari *January*	● 13
Jun *June*	● 18
Oktober *October*	● 6
Disember *December*	● 8

MESYUARAT JAWATANKUASA TEKNIKAL SURUHANJAYA TENAGA (JKBT)
ENERGY COMMISSION TECHNICAL COMMITTEE MEETINGS

September *September*	● 29
Oktober *October*	● 6
Disember *December*	● 15

● Tarikh *Date*

CORPORATE HOUSE SURUHANJAYA TENAGA
CORPORATE HOUSE OF THE ENERGY COMMISSION

Visi
Vision

Suruhanjaya Tenaga adalah badan kawal selia sektor tenaga bertaraf dunia yang berkesan dan berwibawa.
The Energy Commission is a world-class energy regulator that is effective and authoritative.

Misi
Mission

Suruhanjaya Tenaga berazam untuk mengimbangi keperluan pengguna dan pembekal tenaga bagi memastikan pembekalan yang selamat dan berdaya harap pada harga yang berpatutan, melindungi kepentingan awam, dan menggalakkan pembangunan ekonomi dan pasaran yang kompetitif dalam persekitaran yang lestari.
The Energy Commission aims to balance the needs of consumers and providers of energy to ensure safe and reliable supply at reasonable prices, protect public interest, and foster economic development and competitive markets in an environmentally sustainable manner.

4 Teras Strategik
4 Strategic Pillars

1 Daya harap dan kualiti perkhidmatan
Reliability and service quality

Bagi memastikan pembekalan yang berdaya harap dan kualiti perkhidmatan yang optimum bagi pengguna.
To ensure reliable supply and optimum service quality to consumers.

2 Keselamatan dalam pembekalan dan penggunaan infrastruktur
Safety in supply and utilisation of infrastructure

Bagi melindungi pengguna/industri dari musibah yang mungkin timbul di industri elektrik dan gas berpaip serta penggunaan infrastruktur.
To protect the public/ industry from dangers arising in the electricity and piped gas industry and the utilisation infrastructure.

3 Keberterusan dan kemampanan tenaga
Energy security and sustainability

Bagi memastikan keberterusan dan kemampanan bekalan tenaga bagi memenuhi permintaan semasa dan masa hadapan.
To ensure security and sustainability of energy supply to meet current and future demand.

4 Kecekapan ekonomi dan kemampuan dalam industri pembekalan elektrik dan gas berpaip
Economic efficiency and affordability in electricity and piped gas supply industry

Bagi memastikan kedua-dua industri elektrik dan gas berpaip adalah cekap dari segi ekonomi bagi kepentingan pengguna.
To ensure both the electricity and piped gas industries are economically efficient for the benefit of the consumers.

2 Penggerak
2 Enablers

5 Kualiti kawal selia dan pelaksanaan perkhidmatan
Regulatory quality and service delivery

Bagi meningkatkan kepercayaan pemegang taruh dengan mengukuhkan rangka kerja kawal selia dan pelaksanaan perkhidmatan yang cekap.
To enhance stakeholders' trust by continuously strengthening regulatory framework and provide efficient service delivery.

6 Pembangunan kapasiti dan keupayaan
Capacity and capability building

Bagi mempunyai tenaga kerja yang berkepakaran, berkeupayaan, bermotivasi tinggi dan terlibat.
To have highly competent, capable, motivated and engaged staff.

PENGURUSAN TERTINGGI
MANAGEMENT TEAM

ABDUL RAZIB DAWOOD
Ketua Pegawai Eksekutif
Chief Executive Officer

IR. ABDUL RAHIM IBRAHIM
Ketua Pegawai Operasi
Chief Operating Officer

KAUTHAR MOHD YUSOF
Pengarah Perkhidmatan Korporat
Director of Corporate Services

Dilantik pada 1 November 2020
Appointed on 1 November 2020

MOHD ELMI ANAS
Pengarah Penguatkuasaan dan Operasi Kawasan
Director of Enforcement and Regional Operations

IR. ROSLEE ESMAN
Pengarah Operasi Industri
Director of Industry Operations

IR. MD ZAKUAN IBRAHIM
Pengarah Kawal Selia Keselamatan
Director of Safety Regulation

MARLINDA MOHD ROSLI
Pengarah Kawal Selia Ekonomi
Director of Economic Regulation

HILMI RAMLI
Pengarah Perancangan dan Komunikasi Strategik
Director of Strategic Planning and Communication

NURHAFIZA MOHAMED HASAN
Pengarah Perancangan dan Pembangunan Industri
Director of Industry Planning and Development

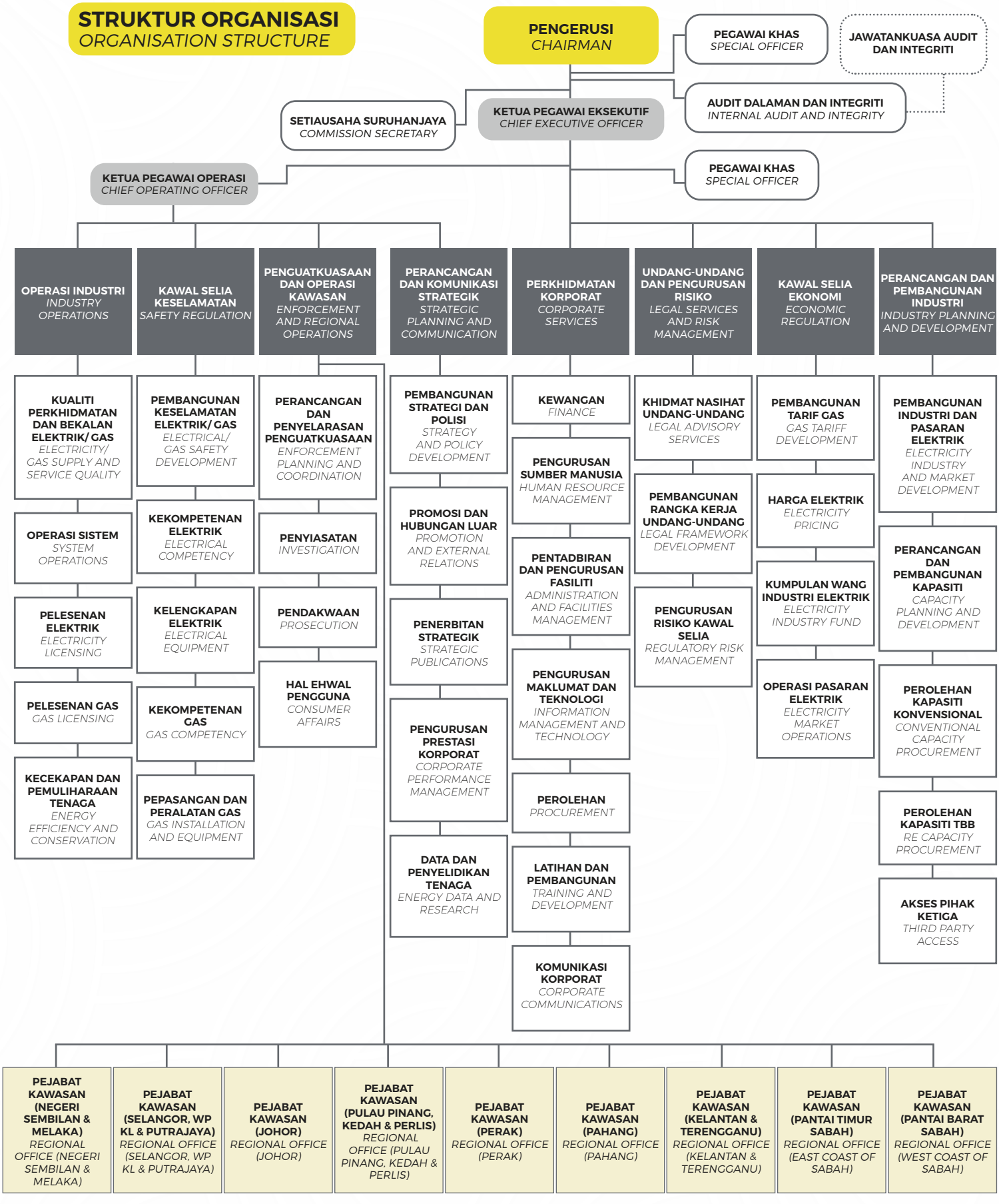
SHAHRILNAZIM SHAARI
Pengarah Undang-undang dan Pengurusan Risiko
Director of Legal Services and Risk Management

Bersara pada 28 Jun 2020
Retired on 28 June 2020

ASMA AINI MOHD NADZRI
Pengarah Perkhidmatan Korporat
Director of Corporate Services

Bersara pada 22 Julai 2020
Retired on 22 July 2020

STRUKTUR ORGANISASI
ORGANISATION STRUCTURE



PENCAPAIAN INDUSTRI PEMBEKALAN TENAGA MALAYSIA
ACHIEVEMENTS OF THE MALAYSIAN ENERGY SUPPLY INDUSTRY

2010

- Pengenalan proses perolehan secara kompetitif untuk kapasiti baharu.
  Introduction of the competitive bidding process for new capacity.
- Pelancaran Polisi dan Pelan Tindakan Tenaga Boleh Baharu Kebangsaan.
  Launch of the National Renewable Energy Policy and Action Plan.
- Pelancaran dan penerbitan Kod Grid dan Kod Pengagihan bagi Semenanjung.
  Launch and publication of the Grid Code and Distribution Code for the Peninsula.
- Pelancaran Program Transformasi Ekonomi (ETP).
  Launch of the Economic Transformation Programme (ETP).
- Edisi pertama Laporan Imbangan Tenaga Negara (NEB) Suruhanjaya Tenaga diterbitkan.
  The first edition of the Commission's National Energy Balance (NEB) report published.
- Pengiktirafan Bangunan Berlian Suruhanjaya Tenaga sebagai bangunan bertaraf Platinum.
  The Commission's Diamond Building recognised as a Platinum-rated building.
- Pengenalan sistem dalam talian e-Aduan Suruhanjaya Tenaga.
  Introduction of the Commission's e-Aduan online system.

2011

- Pelaksanaan Dasar Tenaga Baharu (2011 – 2015).
  Implementation of the New Energy Policy (2011 – 2015).
- Penyemakan Kod Grid dan Kod Pengagihan baharu.
  Revision of the Grid Code and new Distribution Code.
- Pembangunan *Regulatory Implementation Guidelines* (RIGs).
  Development of the Regulatory Implementation Guidelines (RIGs).
- Pengenalan skim *Feed-in Tariff* (FiT).
  Introduction of the Feed-in Tariff (FiT) scheme.
- Penganjuran Anugerah Industri Tenaga yang pertama.
  Inaugural Energy Industry Awards.
- Penganjuran Persidangan Keselamatan Elektrik yang pertama.
  Inaugural National Electrical Safety Conference.
- Penganjuran *National Energy Forum* yang pertama.
  Inaugural National Energy Forum.
- Sambutan Ulang Tahun ke-10 Suruhanjaya Tenaga.
  Celebration of the Commission's 10-Year Anniversary.
- Majlis perasmian Bangunan Berlian Suruhanjaya Tenaga.
  Opening ceremony of the Commission's Diamond Building.
- Bangunan Berlian Suruhanjaya Tenaga meraih sijil penarafan Indeks Bangunan Hijau (GBI) Platinum.
  The Commission's Diamond Building received the Green Building Index (GBI) Platinum Certification.
- Pengenalan Larian Tenaga (kini dikenali sebagai *EE Run*).
  Introduction of the Commission's Larian Tenaga (now known as EE Run).

2012

- Pelaksanaan proses pembidaan kompetitif antarabangsa buat julung kalinya.
  Implementation of the first international competitive bidding process.
- MoU ditandatangani di antara Suruhanjaya Tenaga dan *California Energy Resources Conservation and Development Commission* (CEC), USA.
  MoU signing between the Commission and the California Energy Resources Conservation and Development Commission (CEC), USA.
- Pelancaran rasmi laman mikro Hab Maklumat Tenaga Malaysia (MEIH) Suruhanjaya Tenaga.
  Official launch of the Commission's Malaysia Energy Information Hub (MEIH) microsite.
- Bangunan Berlian Suruhanjaya Tenaga dinobatkan sebagai "bangunan paling cekap tenaga" di majlis *ASEAN Energy Awards* 2012.
  The Commission's Diamond Building named "the most energy-efficient building" at the ASEAN Energy Awards 2012.

2015

- Pelaksanaan mekanisme *Imbalance Cost Pass-Through* (ICPT).
  Implementation of the Imbalance Cost Pass-Through (ICPT) mechanism.
- Pelaksanaan Tempoh Regulatori Pertama (RP1), 2015 - 2017 bagi penetapan tarif elektrik.
  Implementation of the First Regulatory Period (RP1), 2015 – 2017 for electricity tariff setting.
- Pelaksanaan *New Enhanced Dispatch Arrangement* (NEDA).
  Implementation of the New Enhanced Dispatch Arrangement (NEDA).
- Penetapan Tahap Perkhidmatan yang Dijamin (GSL) TNB.
  Establishment of TNB's Guaranteed Service Levels (GSL).

2014

- Pelaksanaan dan tempoh percubaan pertama mekanisme IBR bagi penetapan tarif elektrik.
  Implementation and first trial period of the IBR mechanism for electricity tariff setting.
- Pelaksanaan *Ring-fencing* bagi Pembeli Tunggal (SB) dan Pengendali Sistem Grid (GSO) di TNB.
  Ring-fencing of Single Buyer (SB) and Grid System Operator (GSO) within TNB.
- Program *Touchpoint* Suruhanjaya Tenaga dianjur buat julung kalinya untuk mangsa banjir di Pahang.
  The Commission's inaugural Touchpoint programme for the flood victims in Pahang.
- Pengenalan pertandingan tahunan *Energy Efficiency Challenge (EE Challenge)* Suruhanjaya Tenaga di sekolah.
  Introduction of the Commission's annual Energy Efficiency Challenge (EE Challenge) in schools.
- Penerbitan edisi pertama majalah suku tahunan Suruhanjaya Tenaga, *Energy Malaysia*.
  The first edition of the Commission's quarterly magazine, Energy Malaysia published.
- Suruhanjaya Tenaga dinobatkan *Outstanding Government Procurer* oleh *PFI Asian Best Practice Report 2014*.
  The Commission recognised as an Outstanding Government Procurer by the PFI Asian Best Practice Report 2014.

2013

- Pemisahan akaun Tenaga Nasional Berhad (TNB) dan Sabah Electricity Sdn. Bhd. (SESB) sebagai inisiatif di bawah Kawal Selia Berasaskan Insentif (IBR).
  Unbundling of Tenaga Nasional Berhad (TNB) and Sabah Electricity Sdn. Bhd. (SESB) accounts as an initiative under the Incentive-Based Regulation (IBR) industry reform.
- Terminal Regasifikasi di Sungai Udang (RGTSU), Melaka memulakan operasi komersialnya.
  Regasification Terminal in Sungai Udang (RGTSU), Melaka began commercial operations.
- Suruhanjaya Tenaga dikenal pasti sebagai badan mengawasi sistem Akses Pihak Ketiga (TPA).
  The Commission identified as the body to oversee the Third Party Access (TPA) system.
- Pengimportan gas asli cecair (LNG) buat julung kalinya.
  Maiden importation of liquefied natural gas (LNG).
- Pengenalan label Standard Prestasi Tenaga Minimum (MEPS).
  Introduction of the Minimum Energy Performance Standards (MEPS) label.

2016

- Malaysia menandatangani Perjanjian Paris yang bertujuan untuk mengukuhkan tindak balas global terhadap ancaman perubahan iklim.
  Malaysia signs the Paris Agreement which aims to strengthen the global response to climate change.
- Pelaksanaan Pelan Tindakan Kecekapan Tenaga Nasional (NEEAP), 2016-2025.
  Implementation of the National Energy Efficiency Action Plan (NEEAP), 2016-2025.
- Penguatkuasaan terhadap Akta Bekalan Elektrik (Pindaan) 2015 yang meluaskan bidang kuasa Suruhanjaya Tenaga dalam industri tenaga dan keselamatan pengguna.
  Enforcement of the Electricity Supply Act (Amendment) 2015 which expanded the Commission's scope of power in the energy industry and consumer safety.
- Pindaan kepada Akta Bekalan Gas 1993 diluluskan oleh Parlimen.
  Amendment to the Gas Supply Act 1993 approved by Parliament.
- Pelancaran skim Pemeteran Tenaga Bersih (NEM).
  Launch of the Net Energy Metering (NEM) scheme.
- Pengenalan skim *Enhanced Time-of-Use* (EToU).
  Introduction of the Enhanced Time-of-Use (EToU) scheme.
- Penubuhan *Demand Forecast Committee*.
  Setting up of the Demand Forecast Committee.
- Penubuhan Kumpulan Wang Industri Elektrik (KWIE).
  Establishment of the Electricity Industry Fund (KWIE).
- Permulaan kempen "Jadilah Bijak Tenaga" Suruhanjaya Tenaga.
  Kickstart of the Commission's "Be Energy Smart" campaign.

2017

- Penguatkuasaan terhadap Akta Bekalan Gas (Pindaan) 2016 bagi memasukkan sistem TPA.
  Enforcement of the Gas Supply Act (Amendment) 2016 to include the TPA system.
- Terminal Regasifikasi di Pengerang (RGTP), Johor memulakan operasi komersialnya.
  Regasification Terminal in Pengerang (RGTP), Johor began commercial operations.
- Pelaksanaan sistem TPA bagi industri gas berpaip.
  Implementation of the TPA system for the piped gas industry.
- Tempoh percubaan pertama mekanisme IBR bagi penetapan tarif gas berpaip.
  First trial period of the IBR mechanism for piped gas tariff setting.
- Pengoperasian pasaran liberalisasi.
  Implementation of a liberalised market.
- Pelaksanaan Pusingan Pembidaan Pertama Projek Solar Berskala Besar (LSS1).
  Implementation of the First Large Scale Solar Bidding Cycle (LSS1).
- Pengenalan *Advanced Metering Infrastructure* (AMI).
  Introduction of Advanced Metering Infrastructure (AMI).
- Pelan Induk Teknologi Hijau (GTMP) 2017-2030 mula berkuatkuasa.
  The Green Technology Master Plan (GTMP) 2017-2030 came into force.
- Pelancaran aplikasi *mobile* statistik tenaga Malaysia – iaitu yang pertama seumpamanya di ASEAN.
  Launch of the Commission's Malaysia energy statistics mobile application - the first of its kind in ASEAN.

2018

- *Lao PDR-Thailand-Malaysia Power Integrated Project* (LTM-PIP) bagi pemindahan elektrik dari Lao PDR ke Malaysia mula beroperasi.
  The Lao PDR-Thailand-Malaysia Power Integrated Project (LTM-PIP) for electricity transfer from Lao PDR to Malaysia began operations.
- Pelaksanaan Tempoh Regulatori Kedua (RP2), 2018 - 2020 bagi penetapan tarif elektrik.
  Implementation of the Second Regulatory Period (RP2), 2018 – 2020 for electricity tariff setting.
- Penubuhan MyPOWER 2.0.
  Setting up of MyPOWER 2.0.
- Penambahbaikan Pemulihan SAIDI di Sabah.
  Improved Sabah's SAIDI Turnaround.
- Pelancaran Intensiti Tenaga Bangunan (BEI).
  Launch of Building Energy Intensity (BEI).
- Pelaksanaan pindaan struktur organisasi Suruhanjaya Tenaga.
  Restructuring of the Commission's organisational structure.
- Suruhanjaya Tenaga memperoleh Sijil Pematuhan *Standard Accounting System for Government Agencies* (SAGA) daripada Jabatan Akauntan Negara.
  The Commission obtained the Standard Accounting System for Government Agencies (SAGA) Compliance Certificate from the Accountant General's Department.

2019

- Kejayaan percubaan operasi komersial kargo pertama LNG diimport yang tiba di RGTSU, Melaka di bawah pelaksanaan TPA gas.
  Successful trial delivery of the first cargo of imported LNG to RGTSU, Melaka under the gas TPA arrangement.
- Pelaksanaan Pusingan Pembidaan Kedua Projek Solar Berskala Besar (LSS2) dan Pusingan Pembidaan Ketiga Projek Solar Berskala Besar (LSS3).
  Implementation of the Second Large Scale Solar Bidding Cycle (LSS2) and Third Large Scale Solar Bidding Cycle (LSS3).
- Penyemakan semula polisi tarif di bawah skim NEM bagi pengguna tenaga solar.
  Tariff policy revision under the NEM scheme for solar energy prosumers.
- Pelancaran rasmi laman mikro aduan pengguna Suruhanjaya Tenaga.
  Official launch of the Commission's consumer complaints microsite.

2020

- Pelancaran rasmi NEM 3.0.
  Official launch of NEM 3.0.
- Pelaksanaan Program *Large Scale Solar by Malaysian Electricity Industry to Attract RE Investment* (LSS@MEnTARI).
  Implementation of the Large Scale Solar by Malaysian Electricity Industry to Attract RE Investment (LSS@MEnTARI) programme.
- Pelaksanaan Tempoh Regulatori Gas Pertama, 2020-2022.
  Implementation of the First Gas Regulatory Period, 2020 – 2022.
- Pemberian diskaun bil elektrik di bawah Pakej Rangsangan Ekonomi 2020 (PRE 2020), Pakej Rangsangan Ekonomi Prihatin Rakyat (PRIHATIN) dan Program Bantuan Prihatin Elektrik (BPE).
  Electricity bill discounts granted under the Economic Stimulus Package 2020 (PRE 2020), the Prihatin Rakyat Economic Stimulus Package (PRIHATIN) and Bantuan Prihatin Elektrik (BPE).
- Pengumuman pemberian kuota tambahan di bawah LSS@MEnTARI.
  Additional quota under LSS@MEnTARI announced.
- Penubuhan platform Sijil Tenaga Boleh Baharu (REC).
  Establishment of a Renewable Energy Certificates (RECs) platform.
- MoU ditandatangani di antara Suruhanjaya Tenaga dan *Energy Market Authority* (EMA), Singapura.
  MoU signing between the Commission and the Energy Market Authority (EMA), Singapore.
- Penambahan dua (2) lagi kelengkapan di bawah MEPs, menjadikan jumlah keseluruhan lapan (8) kelengkapan.
  Addition of two (2) appliances under MEPS, bringing the total to eight (8) appliances.

SETAHUN YANG LALU - 2020
2020 - The Year That Was

Januari
January

7

Mesyuarat Pembanterasan Penggunaan Kabel Substandard dalam Sektor Pembinaan
ST bekerjasama dengan pihak industri untuk langkah-langkah pembanterasan penggunaan kabel substandard dalam sektor pembinaan.

Meeting to Address the Use of Substandard Cables in the Construction Sector
The Commission and the industry joined forces to combat the use of substandard quality cables in the construction sector.

9

Bengkel ISO 9001:2015 dan Sistem Pengurusan Kualiti di ST
Sebagai langkah perancangan yang strategik, 2020 dimulakan dengan memastikan warga kerja ST mendalami keperluan pematuhan ISO tersebut bagi menambahbaik sistem pengurusan kualiti dan prestasi pencapaian ST.

ISO 9001: 2015 Quality Management System Workshop at the Commission
As a strategic planning measure, a workshop was held to brief employees on the importance of compliance with ISO standard requirements, to improve the quality management system and overall performance of the Commission.

13 Jan & **15** Feb

Bengkel *Situation, Complication, Implication, Position, Action & Benefit* (SCIPAB)

Situation, Complication, Implication, Position, Action & Benefit (SCIPAB) Workshop

20

Bengkel KPI 2020
Dalam sesi Bengkel KPI 2020, Datuk Pengerusi selaku fasilitator menggalakkan rujukan kepada dokumen *Performance Measurement by Regulator* yang diterbitkan oleh *National Audit Committee* sebagai panduan amalan yang boleh dicontohi oleh Pihak Pengurusan.

KPI 2020 Workshop
The Chairman, who was also the facilitator of the workshop, recommended the National Audit Committee's Performance Measurement by Regulator, as a suitable guide for best practices, to the Management.

5

Lawatan Delegasi di bawah Program Latihan *Zero Energy Building (ZEB) dan ZEB Family Concept*

Lawatan delegasi anjuran SEDA Malaysia dengan kerjasama the *Energy Conservation Center Japan (ECCJ)* dan *Japanese Business Alliance for Smart Energy Worldwide (JASE-W)* bertujuan untuk mendapatkan maklumat lanjut berkaitan teknologi hijau di Bangunan Berlian ST.

Delegation Visit under the Zero Energy Building (ZEB) Training Programme and ZEB Family Concept

A delegation, organised by SEDA Malaysia in collaboration with the Energy Conservation Centre Japan (ECCJ) and the Japanese Business Alliance for Smart Energy Worldwide (JASE-W), visited the Commission's Diamond Building to explore developments in green technology.

10

Program *Energy Research Symposium on Chair of Energy Economics*

Program *Energy Research Symposium on Chair of Energy Economics* diadakan untuk membincang dan memuktamadkan skop kajian di bawah program Kursi Ekonomi Tenaga ST UNITEN.

Energy Research Symposium on Chair of Energy Economics

The Energy Research Symposium on the Chair of Energy Economics was held to finalise the scope of study of the ST UNITEN Chair in Energy Economics programme.

21 → 22

Delegasi Malaysia ke Mesyuarat Pegawai-Pegawai Kanan ASEAN Mengenai Tenaga (SOME) *and Associated Meetings, Special SOME*, di Chiang Mai, Thailand

The Malaysian Delegation at the ASEAN Senior Officials Meeting on Energy (SOME) and Associated Meetings, Special SOME in Chiang Mai, Thailand

13

Sesi Dialog Antara ST dan *IEM Electrical Engineering Technical Division (EETD)*

Sesi dialog ini membincangkan hala tuju serta isu-isu berkaitan keselamatan elektrik, kecekapan tenaga dan industri pembekalan elektrik.

Dialogue Session Between the Commission and IEM Electrical Engineering Technical Division (EETD)

The session discussed issues relating to electrical safety, energy efficiency and the electricity supply industry.

24

Sesi Konsultasi Bersama Pihak-Pihak Berkepentingan bagi Cadangan Dokumen Tempoh Kawal Selia Ketiga (RP3: 2021 hingga 2023) TNB di bawah Mekanisme Kawal Selia Berasaskan Insentif (IBR)
Sesi konsultasi telah diadakan bersama pihak-pihak berkepentingan dari sektor Kerajaan, persatuan pengguna dan pelabur untuk mendapatkan maklum balas terhadap cadangan dokumen *RP3 Regulatory Proposal* untuk tempoh 2021 hingga 2023 dan cadangan yang telah dibentangkan oleh TNB.

Stakeholders Consultation Session on TNB Regulatory Period 3 (RP3: 2021 to 2023) Proposal under the Incentive-Based Regulation (IBR) Mechanism
A consultation session held with stakeholders from the Government sector, consumer associations and investors to obtain feedback on the RP3 Regulatory Proposal for the period 2021 to 2023 and the recommendations by TNB.

20

Pengukuhan *National Emergency Response Plan for the Power Sector* bersama Majlis Keselamatan Negara
Pelan ini dibangunkan pada 2016 dan bertujuan untuk memastikan maklumbalas yang segera dan bersesuaian terutamanya ketika berlaku insiden tidak diduga. Pada 2020, pelan ini dikukuhkan lagi dengan mendapatkan input-input penambahbaikan dari Majlis Keselamatan Negara.

Enhancing the National Emergency Response Plan for the Power Sector with the National Security Council
The plan was developed in 2016 to facilitate prompt and suitable response to unforeseen events. In 2020, the plan was further refined with inputs from the National Security Council.

25

Mesyuarat bersama *Import Export Branch*, Jabatan Kastam Pulau Pinang, *North Butterworth Container Terminal* (NBCT)
Mesyuarat ini membincangkan isu-isu penguatkuasaan mengimport dan mengeksport kelengkapan elektrik.

Meeting with the Import Export Branch, Customs Department of Penang, North Butterworth Container Terminal (NBCT)
The meeting discussed issues pertaining to the enforcement of the import and export of electrical equipment.

Mac
March

10 → 11

Program *Touchpoint* di Pusat Perkembangan Kanak-kanak Kampung Kalangkaman di Pulau Banggi, Kota Kinabalu

Program *Touchpoint* memberi manfaat kepada penghuni pusat melalui pemasangan pendawaian elektrik dan peranti arus baki yang selamat dan mematuhi keperluan undang-undang.

Touchpoint Programme at the Kampung Kalangkaman Children Development Centre in Pulau Banggi, Kota Kinabalu

Installation of safe electrical wiring and residual current devices that comply with legal requirements for the benefit of the residents of the centre as part of the Commission's CSR initiative.

27

Sumbangan ST dalam Mencegah Penularan Pandemik Covid-19

Ketika negara sedang berdepan dengan situasi kekurangan alat-alat kelengkapan perubatan, sebagai inisiatif keprihatinan bagi menyokong usaha-usaha menangani penularan pandemik Covid-19, ST telah menyumbang sejumlah RM48,000.00 kepada tabung-tabung amanah Sumbangan Perubatan Kementerian Kesihatan Malaysia dan *Mercy Mission Malaysia.*

The Commission's Contribution in the Fight Against the Covid-19 Pandemic

As the country grapples with medical equipment shortage during the pandemic, the Commission donated RM48,000.00 to the Ministry of Health Malaysia and Mercy Mission Malaysia's medical contribution trust funds.

April
April

13

Sesi Taklimat ST kepada YB Menteri Tenaga dan Sumber Asli

Sesi taklimat kepada YB Datuk Seri Dr. Shamsul Anuar Hj Nasarah, Menteri Tenaga dan Sumber Asli diketuai KPE bagi menjelaskan fungsi dan peranan ST sebagai badan kawal selia sektor tenaga. Sesi turut membincangkan status semasa sektor tenaga seperti inisiatif MESI 2.0 dan perkembangan projek Solar Berskala Besar (LSS).

Briefing Session with the YB Minister of Energy and Natural Resources

A briefing session led by the Commission's CEO to YB Datuk Seri Dr. Shamsul Anuar Hj Nasarah, Minister of Energy and Natural Resources, on the Commission's role and functions as regulator of the energy sector, as well as on the recent developments in the sector such as the MESI 2.0 initiative and the Large-Scale Solar (LSS) project.

12

Sesi Suai Kenal Barisan Pengurusan Tertinggi Bersama YBhg Dato' Azian Osman, Pengerusi ST

Introduction Session between the Commission's Chairman YBhg Dato' Azian Osman and the Management Team

Mei
May

8

Pelantikan YBhg Dato' Azian Osman sebagai Pengerusi ST

Appointment of YBhg Dato' Azian Osman as Chairman of the Commission

12

Energy Talk: The Impact of Covid-19 Pandemic on the Global Energy Market

Berketepatan dengan masanya, Prof. Dr Ken Koyama, selaku *Chair in Energy Economics* memberikan analisis terkini *The Institute of Energy Economics, Japan (IEEJ)* mengenai kesan keseluruhan penularan pandemik Covid-19 terhadap permintaan tenaga global, khususnya sektor tenaga dan ekonomi di Malaysia.

Energy Talk: The Impact of Covid-19 Pandemic on the Global Energy Market

Prof. Dr Ken Koyama, Chair in Energy Economics, presented the latest research by The Institute of Energy Economics, Japan (IEEJ) on the impact of Covid-19 on the global energy demand, especially to Malaysia's economy and energy sector.

28

Sidang Media YB Menteri Tenaga dan Sumber Asli mengenai Program LSS@MEnTARI

Di bawah program LSS@MEnTARI ini, sebanyak 1,000 MWac kuota solar telah ditawarkan oleh Kementerian Tenaga dan Sumber Asli (KeTSA) melalui ST.

Press Conference on LSS@MEnTARI with the YB Minister of Energy and Natural Resources

Under the LSS@MEnTARI programme, a solar quota of 1,000 MWac was offered by the Ministry of Energy and Natural Resources (KeTSA) through the Commission.

18

Pemberian Diskaun Bil Elektrik di Bawah Pakej Rangsangan Ekonomi 2020 (PRE 2020) dan Pakej Rangsangan Ekonomi Prihatin Rakyat (PRIHATIN)

Mesyuarat Jawatankuasa Kumpulan Wang Industri Elektrik (KWIE) membincangkan urusan tadbir urus KWIE dalam pelaksanaan pemberian diskaun ke atas bil elektrik di bawah PRE 2020 dan PRIHATIN sebagaimana yang telah diumumkan oleh Kerajaan di mana sebahagian besar tampungan PRE 2020 dan PRIHATIN adalah daripada dana KWIE.

Electricity Bill Discounts Under the Economic Stimulus Package 2020 (PRE 2020) and the Prihatin Rakyat Economic Stimulus Package (PRIHATIN)

The Electricity Industry Fund (KWIE) Committee meeting on the implementation of electricity bill discounts under PRE 2020 and PRIHATIN, as announced by the Government, of which a significant portion will be derived from the KWIE funds.

Jun
June

Julai
July

20

Sidang Media Khas Bersama YB Menteri KeTSA
YB Datuk Seri Dr. Shamsul Anuar Hj Nasarah, Menteri KeTSA telah mengadakan Sidang Media Khas untuk mengumumkan keputusan berkaitan pemberian Bantuan Prihatin Elektrik Tambahan untuk semua pengguna elektrik dalam kategori domestik di Semenanjung yang bernilai RM942 juta.

Special Press Conference with the YB Minister of KeTSA
YB Datuk Seri Dr. Shamsul Anuar Hj Nasarah, Minister of KeTSA, at a Special Press Conference, announced the provision of the Additional Bantuan Prihatin Elektrik worth RM942 million for domestic electricity consumers in the Peninsula.

7 → 9

***ASEAN Forum on Coal* (AFOC) yang ke-18**
Persidangan membincangkan program-program yang sedang dikendalikan oleh AFOC serta sasaran dan program-program akan datang.

The 18th ASEAN Forum on Coal (AFOC)
The conference discussed ongoing programmes organised by the AFOC as well as future targets and initiatives.

9 → 11

Sesi Semakan Penggubalan Rang Undang-Undang (RUU) Kecekapan dan Konservasi Tenaga
Sesi Semakan Penggubalan Rang Undang-Undang (RUU) Kecekapan dan Konservasi Tenaga bertujuan menyediakan platform penerangan teknikal yang berkaitan di bawah draf RUU ini serta mendapatkan ulasan dan pandangan daripada KeTSA.

The Energy Efficiency and Conservation Bill Review Session
The session provided a technical briefing relating to the drafting of the Bill and served as a platform to obtain feedback from KeTSA.

16

Siasatan Kes Kemalangan Elektrik bersama Jabatan Bomba dan Penyelamat Malaysia (BOMBA)
Sebagai salah satu elemen dalam pembangunan MoU antara ST dan BOMBA, ST juga meneroka kemungkinan untuk kerjasama membangunkan makmal forensik agar siasatan kes kemalangan dapat dilaksanakan dengan lebih terperinci.

Investigation of Electrical Accident Cases with the Fire and Rescue Department of Malaysia
The Commission and the Fire and Rescue Department of Malaysia explored the possibility for the joint development of a forensic laboratory to enable thorough investigations of electrical accidents, as part of the MoU between them.

Ogos
August

4

Coffee with CEO
Program *Coffee with CEO* dihadiri kesemua sepuluh (10) warga kerja terpilih yang menggunakan platform ini untuk berinteraksi dan memberikan maklum balas dan pandangan kepada KPE.

Coffee with CEO
The programme provided a platform for ten (10) selected employees to interact and provide feedback and views to the CEO.

7 → 19 → 28

Program *ST Legal Awareness*
Seramai 150 warga kerja menyertai program *ST Legal Awareness* untuk mengukuhkan pengetahuan dan kepakaran pegawai-pegawai ST dalam bidang perundangan di bawah bidang kuasa ST. Skop program merangkumi aspek perundangan yang khusus serta kes-kes dan senario yang sebenar *(real case study)* yang melibatkan ST.

ST Legal Awareness Programme
A total of 150 of the Commission's employees attended the programme which aimed to strengthen the knowledge and expertise of officers on legal matters under the jurisdiction of the Commission. The scope of the programme covered specific legal aspects and analysis of real case studies.

28 → 29

ASEAN Energy Regulatory Network (AERN)
Mesyuarat AERN ke-11 dan Mesyuarat AERN *Working Groups* 1 dan 2 (AWG 1 & 2) ke-5, melalui persidangan dalam talian, membincangkan kemajuan usahasama bersama *Heads of ASEAN Power Utilities/ Authorities* (HAPUA), cabaran dalam pencapaian sasaran AERN dalam pandemik Covid-19 serta persiapan laporan cadangan kepada Mesyuarat Pegawai-Pegawai Kanan ASEAN Mengenai Tenaga (SOME) yang ke-38.

ASEAN Energy Regulatory Network (AERN)
The 11th AERN meeting and the 5th AERN Working Groups 1 and 2 (AWG 1 & 2) meeting were held online to discuss the progress of the collaboration between the Heads of ASEAN Power Utilities/Authorities (HAPUA), challenges faced in achieving AERN targets during the Covid-19 pandemic as well as preparations of the proposal report for the 38th ASEAN Senior Officials Meeting on Energy (SOME).

6

Mesyuarat Jawatankuasa KWIE
Mesyuarat membincangkan keputusan kelulusan Pelarasan Tarif Elektrik bagi Julai hingga Disember yang telah diluluskan oleh Kerajaan untuk Semenanjung dan *Kulim Hi-Tech Park*, pelaksanaan PRE 2020 dan PRIHATIN serta Bantuan Prihatin Elektrik (BPE).

KWIE Committee Meeting
The meeting discussed the outcome of the Electricity Tariff Adjustment for July to December which was approved by the Government for the Peninsular and Kulim Hi-Tech Park, the implementation of PRE 2020, PRIHATIN and Bantuan Prihatin Elektrik (BPE).

2

Pengemukaan Dokumen Tender bagi Pembidaan untuk Solar Berskala Besar - LSS@MEnTARI
Kemukaan bidaan untuk dua (2) kategori kapasiti berjumlah sebanyak 1,000 MW. Bagi pembida yang berjaya, mula tugas LSS@MEnTARI ini disasarkan untuk kemasukan ke grid pada 2022 dan 2023.

Submission of Tender Documents for Bidding for Large Scale Solar - LSS@MEnTARI
The tender submission for two (2) categories of capacity amounting to 1,000 MW. For successful bidders, LSS@MEnTARI is targeted to commence in 2022 and 2023.

8

Seminar *Updated e-Commerce Regulations for Electrical Appliances*
Seminar ini menekankan kerjasama dan komitmen para pengedar dan penjual untuk memastikan hanya kelengkapan elektrik yang mendapat label keselamatan SIRIM-ST sahaja berada di pasaran Malaysia.

Updated e-Commerce Regulations for Electrical Appliances Seminar
The seminar aimed to highlight to distributors and sellers the importance of their commitment to ensuring that only electrical appliances with the SIRIM-ST label are sold in the Malaysian market.

17

Bengkel *Strategic Thinking*
Bengkel ini menggalakkan budaya pemikiran secara kreatif dan kritis di kalangan warga kerja di samping memotivasi dan menginspirasikan idea-idea baharu.

Strategic Thinking Workshop
The workshop aimed to promote creativity and a culture of critical thinking among employees as well as to inspire new ideas.

17 → 18

Bengkel *Root Cause Analysis (RCA)*
Pendekatan RCA boleh diaplikasikan untuk mengenal pasti punca kejadian yang tidak diingini berlaku dan bagaimana untuk mengatasi dan mendapatkan penyelesaian terbaik.

Root Cause Analysis (RCA) Workshop
The RCA approach is an effective tool to identify the cause of incidents, as well as methods and solutions to overcome them.

19

Lawatan ke Makmal Forensik BOMBA
Lawatan ke makmal forensik BOMBA ini bertujuan untuk melaksanakan suatu pelan tindakan bagi pembangunan makmal forensik ST bagi membantu dalam siasatan kemalangan elektrik dan gas berpaip.

Visit to the Fire and Rescue Department of Malaysia Forensic Laboratory
The purpose of the visit was to formulate an action plan to develop the Commission's forensic laboratory to assist in the investigation of electrical and piped gas accidents.

29 → 30

Bengkel *Regulatory Impact Analysis (RIA)*
Bengkel ini khas diadakan untuk meneliti Peraturan-peraturan Gas dan telah dihadiri oleh sepuluh (10) peserta daripada ST.

Regulatory Impact Analysis (RIA) Workshop
This workshop was held to review Gas Regulations and was attended by ten (10) participants from the Commission.

30

Program 5S
Sempena program ini, fail dan dokumen yang berusia lebih dari tujuh (7) tahun dihantar ke tapak pelupusan setelah mendapat kebenaran rasmi daripada Arkib Negara Malaysia.

5S Programme
As part of this programme, files and documents retained for more than seven (7) years were sent for disposal after obtaining an official permission from the National Archives of Malaysia.

26

Seminar Kesedaran SAIDI, *Smart Meter* dan Standard Prestasi Perkhidmatan Bekalan Elektrik TNB 2020
Seminar memberikan pendedahan tentang manfaat smart meter dan mempromosikan kepada peserta pindaan terhadap GSL dan MSL TNB.

SAIDI Awareness, Smart Meters and TNB Electricity Supply Service Performance Standards Seminar 2020
The seminar highlighted the benefits of smart meters and provided updates on the amendments to TNB's GSL and MSL.

23

ASEAN Electrotechnical Virtual Symposium Exhibition 2020
Bertemakan *Standards Drive Electrotechnical Safety Innovation*, simposium ini mempromosikan jalinan hubungan kerjasama di kalangan negara-negara ASEAN untuk merealisaikan hasrat ke arah komuniti yang dinamik dan mengamalkan prinsip keterbukaan.

ASEAN Electrotechnical Virtual Symposium Exhibition 2020.
The symposium, themed Standards Drive Electrotechnical Safety Innovation, aimed to promote regional cooperation between ASEAN countries to realise aspirations for a dynamic community that practises the principle of openness.

1

Operasi *Bitcoin* ST Tumpas Kegiatan Penyambungan Secara Haram
Operasi Bersepadu ST yang menyerbu sebuah premis yang dilapor dan disiasat menggunakan elektrik secara curang dalam menjalankan kegiatan melombong bitcoin.

The Commission Combats Illegal Connections by Bitcoin Mining Activities
In a joint operation, the Commission raided premises suspected to be involved in the dishonest use of electricity to operate bitcoin mining activities.

20

IECEx National Virtual Conference
ST dijemput memberi perkongsian maklumat mengenai kemalangan elektrik dan pelan mitigasi yang menitikberatkan pepasangan elektrik, peranan orang kompeten dan kelengkapan elektrik dari aspek keselamatan elektrik.

IECEx National Virtual Conference
The Commission was invited to share information regarding electrical accidents and mitigation plans that focus on the safety aspects of electrical installations and equipment, as well as the role of competent persons.

28

Majlis Menandatangani MoU Antara ST dan *Energy Market Authority* (EMA), Singapura
Hubungan dua hala dan kerjasama strategik antara ST dan EMA, Singapura bertujuan meningkatkan kerjasama kedua-dua agensi kawal selia tenaga ini khususnya dalam bidang tenaga dengan lebih bersepadu dalam pembangunan ekonomi serantau.

MoU Signing Ceremony between the Commission and the Energy Market Authority (EMA), Singapore
Strategic bilateral relations between the Commission and EMA, Singapore aim to enhance the cooperation between the two energy regulatory agencies in the field of energy, in line with economic development within the region.

16

Pelancaran *Staff Wellness Programme*
Staff Wellness Programme dilancarkan bersekali dengan aplikasi *Flabuless* yang digunakan sebagai platform merekodkan catatan langkah harian *ST Malaysia Book of Records (MBR) Steps Challenge.*

Launch of the Staff Wellness Programme
The Staff Wellness Programme was launched with Flabuless, an application used to record the daily steps of employees for the Commission's Malaysia Book of Records (MBR) Steps Challenge.

November
November

12

Coffee with COO
Dalam sesi secara dalam talian ini, KPO menegaskan bahawa ST masih relevan dalam industri tenaga sebagai pusat rujukan oleh pelanggan. Oleh itu, warga kerja hendaklah memberi layanan terbaik dalam perkhidmatan pelanggan sehingga selesai.

Coffee with COO
In this online session, the COO highlighted the importance of service quality as part of the Commission's role as a reference hub for the energy industry.

Disember
December

11

Taklimat *ST's Function in Regulating Competition in Electricity and Gas Market*

The Commission's Function in Regulating Competition in Electricity and Gas Market Briefing

14

Bengkel *ST Strategic Planning*

The Commission's Strategic Planning Workshop

16

Sesi Taklimat Perlaksanaan *Program Sustainability Achieved Via Energy Efficiency (SAVE) 2.0*
Program ini menyokong aspirasi Kerajaan dalam proses menggalakkan inisiatif penjimatan dan kecekapan tenaga, rendah karbon dan tenaga lestari yang secara tidak langsung membantu Malaysia mencapai sasaran pengurangan pelepasan karbon.

Briefing Session on the Implementation of the Sustainability Achieved Via Energy Efficiency (SAVE) 2.0 Programme
The programme supports the Government's aspirations in promoting energy savings and efficiency, low carbon and sustainable energy initiatives that contribute to Malaysia's goal to reduce carbon emissions.

17 → 20

Mesyuarat Menteri-Menteri ASEAN Mengenai Tenaga (AMEM) ke-38
AMEM ke-38 menyentuh isu-isu Tenaga Boleh Baharu (TBB), kecekapan tenaga, AERN, ASEAN-*International Renewable Energy Agency* (IRENA) dan lain-lain.

38th ASEAN Ministers on Energy Meeting (AMEM)
The 38th AMEM discussed issues relating to Renewable Energy (RE), energy efficiency, AERN, ASEAN-International Renewable Energy Agency (IRENA) and others.

20

Sanitasi dan Disinfeksi Pejabat
Sebagai langkah-langkah keselamatan dan kesihatan dalam membendung penularan pandemik Covid-19, seluruh bangunan Ibu Pejabat ST dan juga Pejabat Kawasan disanitasi dan disinfeski dari semasa ke semasa.

Office Sanitation and Disinfection
The Commission's Head Office and Regional Offices were regularly sanitised and disinfected to curb the spread of the Covid-19 pandemic.

19

Ekspedisi Pendakian Gunung Angsi, Negeri Sembilan
Aktiviti anjuran oleh Kelab Kristal ini bertujuan meningkatkan ketahanan mental dan fizikal untuk memberi persediaan bagi menyahut cabaran pendakian Gunung Kinabalu yang akan diadakan.

Mount Angsi Climbing Expedition, Negeri Sembilan
Kelab Kristal organised this expedition to increase mental and physical endurance in preparation for the Mount Kinabalu climb.

23

Taklimat MyCC Berkenaan Pengawalseliaan Persaingan
Taklimat ini bertujuan meningkatkan pengetahuan warga kerja ST di dalam bidang pengawalseliaan persaingan pasaran elektrik dan gas berpaip.

MyCC Briefing on Regulating Competition
A briefing to enhance the understanding among the Commission's employees on regulating competition within the electricity and piped gas industry.

SURUHANJAYA TENAGA DI MEDIA
ENERGY COMMISSION IN THE MEDIA

ST meneruskan usaha untuk meningkatkan pengetahuan dan kesedaran orang ramai mengenai isu-isu berkaitan sektor tenaga negara melalui pelbagai saluran media cetak, media dalam talian, TV dan radio walaupun dengan pelbagai kekangan dalam usaha mencegah penularan pandemik Covid-19.

Bagi 2020, antara topik yang menjadi tumpuan adalah berkaitan tarif elektrik dan gas, isu keselamatan elektrik dan kelengkapan elektrik, operasi penguatkuasaan, kecekapan tenaga serta program tanggungjawab sosial korporat (CSR) yang lebih dikenali sebagai *Touchpoint*.

SIDANG MEDIA

Norma baharu selaras dengan pelaksanaan Perintah Kawal Pergerakan (PKP) menyaksikan kebanyakan pengguna melalui hari biasa dan bekerja atau belajar dari rumah, dan ini secara tidak langsung menyebabkan penggunaan elektrik di kediaman meningkat. Kegusaran mengenai perkara ini adalah antara yang menjadi tumpuan, lebih-lebih lagi apabila sebahagian pengguna yang kehilangan atau berkurangan sumber pendapatan sejak PKP dilaksanakan merasa terbeban dengan bil elektrik yang tinggi. Kekeliruan juga semakin menular dengan penggunaan kaedah prorata dalam pengiraan bil elektrik, memandangkan pembaca meter tidak dibenarkan menjalankan tugas sepanjang tempoh PKP.

Berikutan itu, satu sidang media telah diadakan pada 20 Jun 2020 oleh Menteri KeTSA, YB Datuk Seri Dr. Shamsul Anuar Nasarah berkaitan Bantuan Prihatin Elektrik Tambahan untuk semua pengguna elektrik dalam kategori domestik di Semenanjung yang bernilai RM942 juta.

Sidang media tersebut telah mendapat liputan luas pelbagai media, tradisional dan dalam talian, termasuk TV1, TV3, Astro Awani, TV Alhijarah, Harian Metro, *The Star, Malaysia Gazette*, Sinar Harian, Berita Harian, *Edge Markets*, BERNAMA, *China Press, Oriental Daily News, New Sunday Times* dan *Borneo Post*.

The Commission continued to enhance public knowledge and awareness on issues relating to the country's energy sector through various print and online media, TV and radio platforms despite the constraints faced during the Covid-19 pandemic.

The key topics highlighted in 2020 were electricity and gas tariffs, electrical safety and the safety of electrical equipment, enforcement operations, energy efficiency as well as the Commission's corporate social responsibility (CSR) programme, Touchpoint.

PRESS CONFERENCE

During the Movement Control Order (MCO), consumers were faced with high electricity bills as a result of the increase in electricity consumption at home. This led to concerns especially among consumers whose source of income were affected during the MCO. In addition, confusions with regards to the prorated method used in the calculation of electricity bills were also rampant, as meter readers were not allowed to carry out their duties during the MCO period.

To address this issue, a press conference was held on 20 June 2020 by the Minister of KeTSA, YB Datuk Seri Dr. Shamsul Anuar Nasarah to announce the Additional Bantuan Prihatin Elektrik worth RM942 million for domestic electricity consumers in the Peninsula.

The press conference received coverage on various traditional and online media including TV1, TV3, Astro Awani, TV Alhijarah, Harian Metro, The Star, Malaysia Gazette, Sinar Harian, Berita Harian, Edge Markets, BERNAMA, China Press, Oriental Daily News, New Sunday Times and Borneo Post.

ST juga telah menganjurkan sidang media pada 28 Mei 2020 bagi mengumumkan mengenai program *Large Scale Solar by Malaysia Electricity Industry to Attract RE Investment* (LSS@MEnTARI). Sidang media ini turut mendapat liputan meluas dari media bukan sahaja untuk isu LSS, tetapi juga berkenaan isu bil elektrik yang turut diajukan pada sidang media tersebut.

Antara media yang menyiarkan berita ini termasuklah TV1, TV3, NTV7, TV9, Astro Awani, BERNAMA, Berita Harian, Sinar Harian, *Edge Markets, Sin Chew Daily, China Press, Nanyang Siang Pau, Malaysian Nanban, Tamil Malar, New Sabah Times, Sabah News Today* dan Utusan Sarawak.

On 28 May 2020, the Commission organised a press conference to announce the Large-Scale Solar by Malaysia Electricity Industry to Attract RE Investment (LSS@MEnTARI) programme. Extensive coverage of the press conference also highlighted the issue of electricity bills which were raised during the event.

The news was broadcasted on TV1, TV3, NTV7, TV9, Astro Awani, BERNAMA, Berita Harian, Sinar Harian, Edge Markets, Sin Chew Daily, China Press, Nanyang Siang Pau, Malaysian Nanban, Tamil Malar, New Sabah Times, Sabah News Today and Utusan Sarawak.

KLIP AKHBAR

Selain sidang media, ST juga telah mengeluarkan beberapa kenyataan media bagi memberi penerangan atau nasihat mengenai pelbagai isu semasa seperti isu keselamatan elektrik dan gas terutama ketika musim perayaan dan musim banjir, tarif elektrik dan gas, kecekapan tenaga serta program *Touchpoint*.

NEWSPAPER CLIPPINGS

The Commission also issued several media statements to provide updates and advice on prevalent issues such as electrical and gas safety especially during the festive and flood seasons, electricity and gas tariffs, energy efficiency and the Touchpoint programme.

SESI TEMUBUAL MEDIA

Bagi membolehkan ST memberi penerangan lebih lanjut serta meningkatkan kesedaran orang ramai berkenaan keselamatan elektrik dan gas serta kecekapan tenaga, beberapa slot temu bual radio dan rancangan TV telah diatur. Ini termasuklah di saluran BERNAMA Radio, Suria FM, rancangan Selamat Pagi Malaysia di saluran TV1 dan Agenda Awani di saluran Astro Awani.

Topik-topik yang dibicarakan adalah seperti keselamatan elektrik dan gas di musim cuti, kecekapan tenaga, keselamatan elektrik di musim banjir, kelengkapan elektrik yang selamat, keselamatan elektrik di rumah dan meter pintar. Walau bagaimanapun, ada antara sesi temu bual ini dijalankan melalui panggilan telefon sebagai sokongan ST terhadap usaha mengekang penularan pandemik Covid-19.

MEDIA INTERVIEWS

Radio interviews and TV show appearances were also arranged, providing a platform for the Commission to raise public awareness on electrical and gas safety and energy efficiency. These include interviews with BERNAMA Radio, Suria FM, Selamat Pagi Malaysia on TV1 and Agenda Awani on Astro Awani.

Topics discussed were electrical and gas safety during the holiday season, energy efficiency, electrical safety during floods, the usage of safe electrical equipment, electrical safety at home and smart meters. However, several interview sessions were conducted via telephone calls, in line with the Commission's commitment to curb the spread of the Covid-19 pandemic.

22 Jun / *June*

Temu bual di segmen Jendela Fikir, Radio BERNAMA mempromosikan konsep *Be Energy Smart*, iaitu penggunaan tenaga elektrik tanpa pembaziran dan pada masa yang sama tidak menggangu keselesaan pengguna.

An interview in the Jendela Fikir segment of BERNAMA Radio to promote the Be Energy Smart campaign to encourage the efficient use of electricity in a manner that does not compromise the comfort of consumers.

23 Jun / *June*

Temu bual SURIA FM berkaitan keselamatan elektrik di rumah berkongsi tiga (3) punca utama kemalangan elektrik iaitu pemasangan dan senggaraan yang tidak sempurna, kecacatan pada kelengkapan elektrik dan salah guna sistem pendawaian elektrik melibatkan pemasangan pagar elektrik yang tidak mengikut standard dan tidak mendapat kelulusan ST.

Interview with SURIA FM on electrical safety revealed three (3) main causes of electrical accidents at home, namely improper installation and maintenance, defects in electrical equipment and misuse of electrical wiring systems involving the installation of electric fences that do not adhere to standards nor approved by the Commission.

24 Jun / *June*

Temu bual di saluran BERNAMA Radio mengenai keselamatan elektrik di rumah yang turut disiarkan secara *'live'* di laman Facebook radio berkenaan.

A BERNAMA Radio interview on electrical safety at home which was also broadcasted live on the radio's Facebook page.

27 Julai / *July*

Temu bual ST bersama TNB mengenai meter pintar di rancangan Agenda Awani yang disiarkan di saluran Astro Awani.

The Commission and TNB were jointly interviewed on smart meters on the Agenda Awani programme on Astro Awani.

30 Julai / *July*

Temu bual mengenai kelengkapan elektrik yang selamat di saluran BERNAMA Radio.

Interview on safe electrical equipment with BERNAMA Radio.

25 Ogos / *August*

Dalam temu bual di saluran BERNAMA Radio, ST menekankan 34 kategori kelengkapan elektrik yang perlu mematuhi penandaan label keselamatan yang ditetapkan samada secara label SIRIM-ST atau embossing pada kelengkapan itu sendiri.

In an interview with BERNAMA Radio, the Commission highlighted 34 categories of electrical equipment that are required to comply with safety label requirements, either with the SIRIM-ST label or embossing on the equipment itself.

27 Ogos / *August*

ST ditemu bual di saluran BERNAMA Radio dengan topik keselamatan gas berpaip di premis dobi dan rumah di mana ST mengingatkan para pendengar untuk melaporkan kepada ST sekiranya meragui status lesen gas premis dobi yang tidak mempamerkan lesen gas atau perakuan Kelulusan Untuk Memasang (ATI)/ Kelulusan Untuk Mengendali (ATO) di premis tersebut.

The Commission was interviewed by BERNAMA Radio on piped gas safety at launderettes and residential premises. The Commission advised listeners to lodge a report on launderettes that do not display their gas licences or Approval to Install (ATI)/ Approval to Operate (ATO) certificates at the premises.

21 Disember / *December*

Temu bual di dalam rancangan Selamat Pagi Malaysia di saluran TV1 mengenai topik keselamatan elektrik.

Interview with Selamat Pagi Malaysia, TV1 on electrical safety.

21 Disember / *December*

Temu bual mengenai topik keselamatan elektrik di musim banjir di saluran BERNAMA Radio.

Interview on electrical safety during the flood season with BERNAMA Radio.

28 Disember / *December*

Temu bual di BERNAMA Radio bagi membicarakan tentang keselamatan elektrik dan gas di musim cuti.

Interview with BERNAMA Radio about electricity and gas safety during the holiday season.

22 Disember / *December*

Temu bual ini membicarakan tentang topik kecekapan tenaga di saluran BERNAMA Radio.

Interview with BERNAMA Radio to discuss the topic of energy efficiency.

29 Disember / *December*

Temu bual di saluran BERNAMA yang berkongsi tentang kelengkapan elektrik yang selamat dan tips jimat tenaga.

Sharing information on safe electrical equipment and energy saving tips during an interview with BERNAMA.

LIPUTAN MEDIA

Liputan media mengenai program-program yang dilaksanakan oleh ST juga termasuk seminar yang dijalankan dari semasa ke semasa serta program CSR ST, atau lebih dikenali sebagai program *Touchpoint*.

Selain itu, operasi penguatkuasaan yang dijalankan ST sepanjang tahun turut mendapat kerjasama baik dari pihak media pelbagai bahasa, lebih-lebih lagi media dalam talian.

Operasi yang melibatkan kesalahan penggunaan elektrik secara curang ini dilaksanakan di Sabah, Pahang, Selangor, Melaka, Johor dan Pulau Pinang. Liputan yang meluas secara tidak langsung dapat mengingatkan orang ramai agar tidak melakukan kesalahan yang serupa.

MEDIA COVERAGE

Programmes implemented by the Commission including seminars and the Commission's Touchpoint CSR programme also received media coverage in 2020.

In addition, the enforcement operations carried out by the Commission throughout the year gained the attention of multilingual media platforms online.

Operations to eradicate the dishonest use of electricity were carried out in Sabah, Pahang, Selangor, Melaka, Johor and Penang. Extensive coverage on the issue served as a warning to the public to avoid similar offences.

8 Julai / *July*

Liputan media selepas serbuan yang diadakan di Pelabuhan Klang, Selangor terhadap premis yang disyaki mencuri elektrik.

Media coverage after a raid on a premise in Port Klang, Selangor suspected to be involved in the dishonest use of electricity.

7 Ogos / *August*

Sidang media yang diadakan selepas serbuan yang dijalankan di sekitar Kota Kinabalu dan Keningau, Sabah bagi membanteras kejadian penggunaan elektrik secara curang.

A press conference was held after the raids carried out around Kota Kinabalu and Keningau, Sabah in an effort to combat the dishonest use of electricity.

28 Ogos / *August*

Liputan media semasa serbuan terhadap premis perlombongan bitcoin yang disyaki menggunakan elektrik secara curang di Iskandar Puteri, Johor.

A media conference conducted during a raid on a bitcoin mining premise in Iskandar Puteri, Johor, suspected of dishonest use of electricity.

18 September

ST memberi penerangan kepada media semasa serbuan terhadap premis perlombongan bitcoin yang disyaki menggunakan elektrik secara curang di Butterworth, Pulau Pinang.

The Commission briefing the media during a raid on a bitcoin mining premise in Butterworth, Penang, suspected of dishonest use of electricity.

1 Oktober / *October*

ST menjawab soalan media selepas operasi bersepadu bersama TNB, Majlis Perbandaran Subang Jaya (MPSJ) dan Lembaga Hasil Dalam Negeri (LHDN) di Puchong, Selangor.

The Commission answering questions from the media after a joint operation with TNB, Subang Jaya Municipal Council (MPSJ) and Inland Revenue Board (IRB) in Puchong, Selangor.

01

MEMASTIKAN DAYA HARAP BEKALAN TENAGA DAN KUALITI PERKHIDMATAN INDUSTRI

ENSURING RELIABILITY OF ENERGY SUPPLY AND INDUSTRY SERVICE QUALITY

PRESTASI PERMINTAAN DAN PEMBEKALAN ELEKTRIK
ELECTRICITY DEMAND AND SUPPLY PERFORMANCE

PERMINTAAN ELEKTRIK

Semenanjung Malaysia

Secara keseluruhannya, permintaan puncak di sistem grid telah pun menunjukkan peningkatan sejak tiga (3) tahun yang lalu. Pada 2020, permintaan puncak sistem grid di Semenanjung adalah 18,808 MW seperti yang direkodkan pada 10 Mac 2020, seminggu sebelum bermulanya Perintah Kawalan Pergerakan (PKP) yang dikuatkuasakan di seluruh negara. Ini menunjukkan peningkatan sebanyak 1.3% berbanding 18,566 MW yang telah dicatatkan pada tahun sebelumnya.

Walau bagaimanapun, bacaan permintaan puncak telah beransur menjadi lebih rendah sehingga akhir 2020 setelah bermulanya PKP pada 18 Mac 2020.

ELECTRICITY DEMAND

Peninsular Malaysia

Overall, peak demand in the Peninsula's grid system has been on an upward trend over the past three (3) years. In 2020, peak demand increased by 1.3% from 18,566 MW in 2019 to 18,808 MW as recorded on 10 March 2020, a week before the nationwide enforcement of the Movement Control Order (MCO).

However, this gradually decreased throughout the remainder of the year following the implementation of MCO on 18 March 2020.

Permintaan Puncak di Semenanjung Malaysia, 2018-2020
Peak Demand in Peninsular Malaysia, 2018-2020

15 Ogos 2018
15 August 2018

18 April 2019
18 April 2019

10 Mac 2020
10 March 2020

Jumlah tenaga elektrik di Semenanjung pada 2020 telah mencatatkan penurunan sebanyak 3.83% kepada 125,032 GWj berbanding 130,009 GWj pada 2019. Penurunan jumlah ini adalah disebabkan impak secara langsung PKP yang menyebabkan penangguhan operasi bagi kebanyakkan pengguna industri dan juga komersial.

In 2020, total electricity generated in the Peninsula decreased by 3.83% to 125,032 GWh compared to 130,009 GWh in 2019 due to operational delays experienced by many industrial and commercial consumers during the MCO.

Sabah

Permintaan juga telah menurun di Sabah, di mana permintaan puncak tahunan dicatatkan pada 987 MW bagi 2020, yang merupakan penurunan sebanyak 1.4% berbanding tahun sebelumnya.

Jumlah pembekalan tahunan yang direkodkan bagi 2020 pula adalah 6,391.5 GWj, iaitu penurunan sebanyak 3.6% berbanding 2019. Ini juga merupakan kesan perlaksanaan PKP dan Perintah Kawalan Bersyarat (PKPB) di seluruh Sabah.

Sabah

Over in Sabah, electricity demand declined in 2020 by 1.4% compared to the previous year, with annual peak demand reaching 987 MW in 2020.

Total annual electricity supply decreased by 3.6% to 6,391.5 GWh compared to 2019 due to the implementation of MCO and Conditional Movement Control Order (CMCO) throughout the State.

Permintaan Puncak Tahunan di Sabah, 2019 & 2020
Annual Peak Demand in Sabah, 2019 & 2020

KAPASITI PENJANAAN

Semenanjung Malaysia

Pada 2020, jumlah kapasiti terpasang dari penjanaan stesen jana kuasa di Semenanjung adalah sebanyak 25,257 MW dengan campuran penjanaan yang terdiri daripada arang batu (65%), gas asli (29.8%), hidro (4.4%) dan lain-lain (0.8%).

Secara umumnya, tenaga elektrik yang dijana dibekalkan kepada pengguna industri (40%), pengguna komersial (34%), dan pengguna domestik (24%), manakala 2% yang selebihnya dibekalkan kepada aktiviti perlombongan, pertanian dan lampu awam.

GENERATION CAPACITY

Peninsular Malaysia

In 2020, the total installed capacity in the Peninsula amounted to 25,257 MW, with a generation mix of coal (65%), natural gas (29.8%), hydro (4.4%) and others (0.8%).

The electricity generated was supplied to industrial (40%), commercial (34%), and domestic (24%) consumers, while the remaining 2% was used by mining, agriculture and public lighting.

Kapasiti Terpasang di Semenanjung Malaysia, 2019 & 2020
Installed Capacity in Peninsular Malaysia, 2019 & 2020

	2019	2020
Kapasiti Terpasang *Installed Capacity*	Arang batu *Coal* **(12,066 MW)**	Arang batu *Coal* **(12,054 MW)**
	Gas *Gas* **(11,000 MW)**	Gas *Gas* **(9,792 MW)**
	Hidro *Hydro* **(2,240 MW)**	Hidro *Hydro* **(2,237 MW)**
	Solar (LSS) *Solar (LSS)* **(429 MW)**	Solar (LSS) *Solar (LSS)* **(579 MW)**
	Mini hidro *Mini hydro* **(296 MW)**	Mini hidro *Mini hydro* **(295 MW)**
	Sambungtara *Interconnection* **(100 MW)**	Sambungtara *Interconnection* **(300 MW)**
	JUMLAH: *TOTAL:* **26,132 MW**	JUMLAH: *TOTAL:* **25,257 MW**
Margin Rizab *Reserve Margin*	**38%**	**32%**
Permintaan Puncak *Peak Demand*	**18,566 MW**	**18,808 MW**
Penjanaan Tenaga *Energy Generation*	**391.845 GWj /** *GWh*	**394.238 GWj /** *GWh*

	2019	2020
Tarikh *Date*	18 April 2019 *18 April 2019*	10 Mac 2020 *10 March 2020*
Jumlah Tenaga *Total Energy*	**130,009 GWj /** ***GWh***	**125,032 GWj /** ***GWh***

Jumlah kapasiti terpasang di Semenanjung mencatatkan penurunan lanjutan penamatan operasi loji Powertek Berhad (434 MW) dan Stesen Jana Kuasa Sultan Ismail, Paka (257 MW) pada 31 Disember 2019, serta juga Pahlawan Power (322 MW) pada 5 Ogos 2020.

Pada masa yang sama, sistem grid pula mula menerima penambahan kapasiti dengan permulaan operasi projek Solar Berskala Besar (LSS) RE Gebeng Sdn. Bhd. (29.916 MW), TNB Bukit Selambau Solar Sdn. Bhd. (30 MW), Redsol Sdn. Bhd. (30 MW), KBJ Hecmy Sdn. Bhd. (30 MW) dan Kenyir Gunkul Solar Sdn. Bhd. (29.99 MW).

Di samping itu juga, kapasiti bekalan sambungtara penghantaran daripada Lao PDR melalui grid sambungtara Lao PDR-Thailand-Malaysia (LTM), iaitu sebahagian daripada *ASEAN Power Grid*, juga telah meningkat kepada 300 MW pada 2020 berbanding 100 MW pada 2019.

The total installed capacity in the Peninsula declined following the decommissioning of the Powertek Berhad plant (434 MW) and the Sultan Ismail Power Station, Paka (257 MW) on 31 December 2019 as well as Pahlawan Power (322 MW) on 5 August 2020.

However, additional capacity was added to the grid system with the commencement of the Large Scale Solar (LSS) project RE Gebeng Sdn. Bhd. (29.916 MW), TNB Bukit Selambau Solar Sdn. Bhd. (30 MW), Redsol Sdn. Bhd. (30 MW), KBJ Hecmy Sdn. Bhd. (30 MW) and Kenyir Gunkul Solar Sdn. Bhd. (29.99 MW).

In addition, capacity supplied from Lao PDR via the Lao PDR-Thailand-Malaysia (LTM) interconnection grid, which is part of the ASEAN Power Grid, also increased to 300 MW in 2020 from 100 MW in 2019.

Sabah

Penjanaan tenaga di Sabah terdiri daripada gas, diesel, hidro dan tenaga boleh baharu (TBB) seperti biojisim dan biogas serta penjanaan daripada LSS.

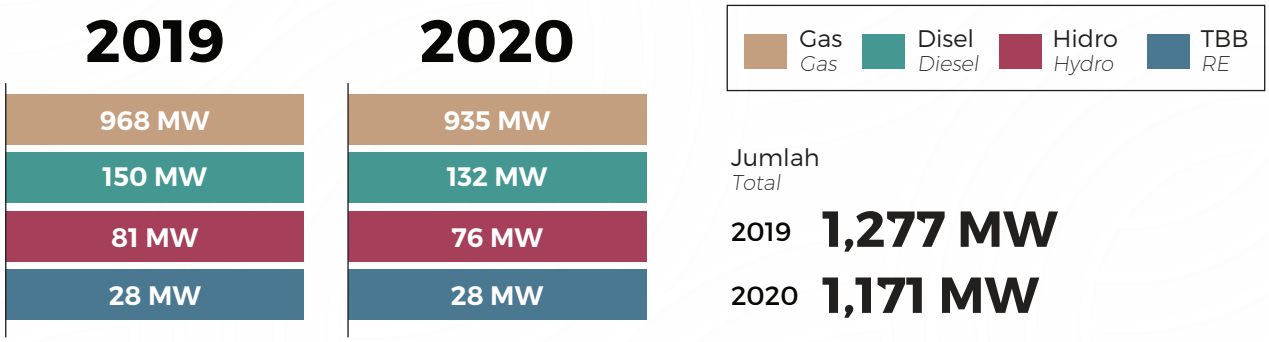
Pada 2020, kapasiti boleh harap di Sabah adalah sebanyak 1,171 MW berbanding 1,277 MW pada 2019.

Sabah

In Sabah, the electricity generation mix consists of gas, diesel, hydro and renewable energy (RE) such as biomass and biogas as well as generation from LSS.

In 2020, the state recorded a dependable capacity of 1,171 MW in comparison to 1,277 MW in 2019.

Kapasiti Boleh Harap di Sabah, 2019 & 2020
Dependable Capacity in Sabah, 2019 & 2020



Jumlah
Total

2019 **1,277 MW**

2020 **1,171 MW**

Nota: Jumlah kapasiti boleh harap ini tidak termasuk LSS yang berkapasiti 50 MW.
Note: The total dependable capacity is not inclusive of LSS with a capacity of 50 MW.

Penurunan jumlah kapasiti boleh harap berkait rapat dengan semakan semula keboleharapan yang dijalankan oleh pihak *Grid System Operator* (GSO) kepada Stesen Jana Kuasa Hidro Tenom Pangi, Stesen Jana Kuasa Tawau (Caterpillar Genset) dan Stesen Jana Kuasa Sabah Electricity Sdn. Bhd. (SESB).

Beberapa projek penjanaan juga telah ditunda pada 2020 termasuk *One River*, SJ Serudong, SJ Libaran, GT Melawa dan *Tawau DG Rehab* yang membabitkan sejumlah 101 MW kapasiti penjanaan. Penangguhan projek-projek ini adalah berpunca daripada penguatkuasaan PKP di Sabah.

Berkuatkuasa 1 Februari 2020, jumlah kapasiti kebolehharapan baharu bagi unit hidro di Stesen Jana Kuasa Hidro Tenom Pangi selepas pengujian *Tested Annual Availability Capacity* (TAAC) adalah sebanyak 67 MW, berbanding 72.55 MW sebelum pengujian dikuatkuasakan. Ini menyumbang kepada penurunan jumlah kapasiti boleh harap daripada 1228.76 MW ke 1223.21 MW.

Terdapat juga perubahan jumlah kapasiti kebolehharapan bagi beberapa unit di Stesen Jana Kuasa SESB iaitu di SJ Patau-Patau, SJ Kubota dan SJ Tawau setelah dikuatkuasakan pada 1 Julai 2020 yang telah membawa jumlah kapasiti kebolehharapan daripada 1,223.21 MW ke 1,174.96 MW.

Selain itu, perubahan jumlah kapasiti kebolehharapan bagi beberapa unit di Stesen Jana Kuasa Tawau (CAT) dan Stesen Jana Kuasa SPRE setelah dikuatkuasakan pada 15 Oktober 2020 juga telah membawa jumlah kapasiti kebolehharapan baharu daripada 1,174.96 MW ke 1,174.52 MW.

Akhir sekali, penguatkuasaan pada 30 November 2020 ke atas beberapa unit di Stesen Jana Kuasa Tawau (CAT) juga telah menurunkan jumlah kapasiti kebolehharapan daripada 1,174.52 MW ke jumlah keseluruhan terkini iaitu 1,170.88 MW.

The decrease in total dependable capacity was largely due to the reliability review conducted by the Grid System Operator (GSO) on the Tenom Pangi Hydro Power Station, the Tawau Power Station (Caterpillar Genset) and the Sabah Electricity Sdn. Bhd. (SESB) Power Station.

Several generation projects with a total capacity of 101 MW, namely One River, SJ Serudong, SJ Libaran, GT Melawa and Tawau DG Rehab, were also postponed in 2020 due to the enforcement of the MCO in Sabah.

Also, as of 1 February, the dependable capacity of hydro units at the Tenom Pangi Hydro Power Station was reduced to 67 MW from 72.55 MW. This came as a result of the Tested Annual Availability Capacity (TAAC) testing and contributed to the decrease in the total dependable capacity from 1228.76 MW to 1223.21 MW.

Similar trends were seen at the SESB Power Station, namely units SJ Patau-Patau, SJ Kubota and SJ Tawau, with dependable capacity decreasing from 1,223.21 MW to 1,174.96 MW after the enforcement of the TAAC testing on 1 July.

Several units at the Tawau Power Station (CAT) and SPRE Power Station also experienced a drop in total dependable capacity, from 1,174.96 MW to 1,174.52 MW after testing on 15 October.

The final round of TAAC testing was carried out on 30 November, after which several units at the Tawau Power Station (CAT) saw a reduction in total dependable capacity from 1,174.52 MW to the current total of 1,170.88 MW.

CAMPURAN PENJANAAN
GENERATION MIX

Campuran Penjanaan di Semenanjung Malaysia, 2018-2020
Generation Mix in Peninsular Malaysia, 2018-2020

Tahun *Year*	Arang Batu *Coal*	Gas Asli *Natural Gas*	Hidro *Hydro*	Lain-lain *Others*
2018	**55.7%**	**40.0%**	**4.0%**	**0.3%**
2019	**55.0%**	**41.0%**	**3.0%**	**1.0%**
2020	**65.0%**	**29.8%**	**4.4%**	**0.8%**

Tahun 2020 menyaksikan peningkatan ketara terhadap penggunaan arang batu dalam penjanaan elektrik berbanding tahun sebelumnya. Selain daripada faktor harga arang batu yang lebih rendah, penamatan operasi bagi beberapa stesen jana kuasa gas turut menyumbang kepada peningkatan penggunaan arang batu tersebut, di samping kelewatan *Commercial Operation Date* (COD) bagi stesen jana kuasa gas yang baharu.

Stesen-stesen jana kuasa gas yang telah tamat beroperasi adalah Powertek Berhad (434 MW) dan Stesen Jana Kuasa Sultan Ismail, Paka (257 MW) pada 31 Disember 2019 serta Pahlawan Power (322 MW) pada 5 Ogos 2020.

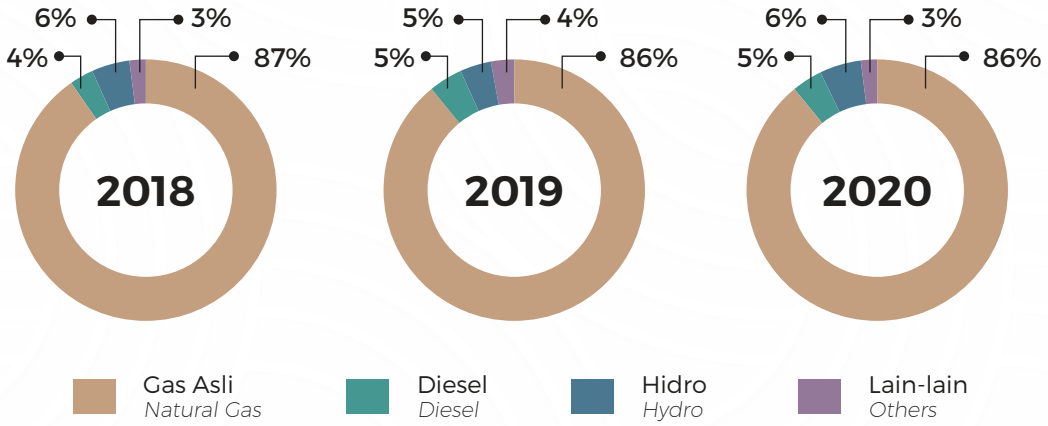
Manakala, penangguhan tarikh COD bagi stesen jana kuasa gas yang baharu pula melibatkan *SPG Block 1* (720 MW) dan *SPG Block 2* (720 MW), iaitu masing-masing daripada tarikh asal 1 Julai 2020 kepada 1 Januari 2021 dan 4 Februari 2021.

The use of coal for electricity generation also increased significantly in 2020 compared to the previous year. Apart from lower coal price, the decommissioning of several gas-fired power stations and the delay to the Commercial Operation Date (COD) for new gas-fired power stations also contributed to the increase in coal consumption.

Gas-fired power stations that have ceased operations were Powertek Berhad (434 MW) and Sultan Ismail Power Station, Paka (257 MW) on 31 December 2019 as well as Pahlawan Power (322 MW) on 5 August 2020.

Meanwhile, the COD for new gas-fired power stations, which include SPG Block 1 (720 MW) and SPG Block 2 (720 MW), were also postponed from 1 July 2020 to 1 January 2021 and 4 February 2021, respectively.

Campuran Penjanaan di Sabah, 2018-2020
Generation Mix in Sabah, 2018-2020



Bagi Sabah pula, trend campuran penjanaan tidak banyak berubah berbanding tahun sebelumnya. Campuran gas asli dan diesel masing-masing kekal pada paras 86% dan 5%, campuran hidro naik ke 6% dan campuran lain turun ke paras 3%.

In Sabah, there were no significant changes in the generation mix trend compared to the previous year. Natural gas and diesel remained at 86% and 5% respectively, while hydro grew to 6% and generation by other fuels decreased to 3%.

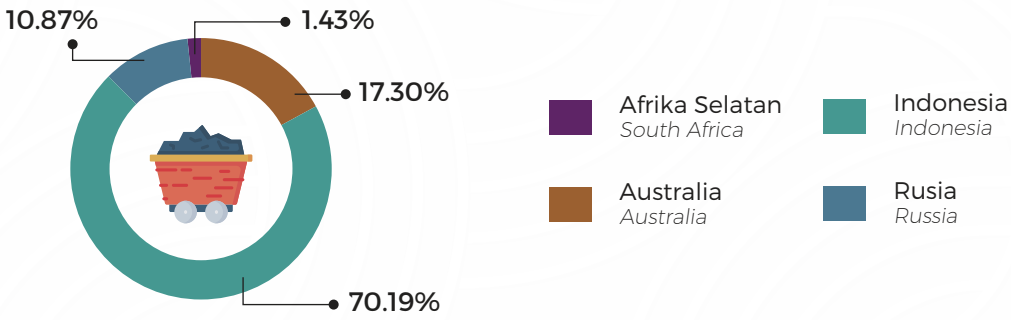
Arang Batu

Sebanyak 34 juta tan arang batu telah diimport ke stesen-stesen jana kuasa arang batu di Semenanjung. Daripada jumlah tersebut, 70% adalah arang batu *sub-bituminous* manakala 30% adalah arang batu *bituminous.*

Coal

A total of 34 million tonnes of coal was imported to coal-fired power stations in the Peninsula with sub-bituminous coal accounting for 70% of coal imported while bituminous coal made up the remaining 30%.

Kuantiti Sumber Arang Batu yang Diimport, 2020
Quantity of Imported Coal Resources, 2020



Gas Asli

Jumlah penggunaan bekalan gas asli oleh sektor tenaga mencatatkan purata 720 mmscfd bagi Semenanjung, iaitu lebih rendah daripada yang dijangkakan. Pelaksanaan PKP yang menjejaskan operasi industri-industri telah mengakibatkan pengurangan sekitar 30% terhadap permintaan elektrik. Situasi ini sekali gus telah memberikan impak yang signifikan terhadap kadar penggunaan gas asli oleh sektor penjanaan ekoran daripada kekurangan permintaan elektrik tersebut.

Walau bagaimanapun, kadar penggunaan gas asli kembali meningkat dan beransur pulih setelah industri-industri dibenarkan untuk beroperasi semula apabila PKP ditamatkan dan digantikan dengan Perintah Kawalan Pergerakan Diperketatkan (PKPD), Perintah Kawalan Pergerakan Bersyarat (PKPB), dan Perintah Kawalan Pergerakan Pemulihan (PKPP).

Bagi negeri Sabah pula, penggunaan gas asli oleh sektor tenaga mencatatkan purata 120 mmscfd. Tidak seperti di Semenanjung, pelaksanaan PKP di negeri tersebut tidak menjejaskan kadar penggunaan gas asli dengan signifikan.

Natural Gas

The overall consumption of natural gas by the energy sector was lower than projected, at an average of 720 mmscfd in the Peninsula. Electricity demand in the Peninsula experienced a reduction of approximately 30% primarily due to the impact of the MCO on industrial operations. This decrease in electricity demand significantly affected the rate of natural gas consumption by the generation sector.

However, the rate of natural gas consumption gradually increased and recovered once industries were permitted to resume operations during the Enhanced Movement Control Order (EMCO), Conditional Movement Control Order (CMCO) and Recovery Movement Control Order (RMCO).

In Sabah, the consumption of natural gas by the energy sector stood at an average of 120 mmscfd. Unlike in the Peninsula, the rate of natural gas consumption in the state was not significantly impacted by the implementation of MCO.

Penjanaan Berasaskan Tenaga Boleh Baharu (TBB)

Tenaga boleh baharu (TBB) merupakan salah satu agenda utama dalam skop perkembangan sektor tenaga di Malaysia. Bermula dengan pengenalan Dasar Bahan Bakar Kelima di bawah Rancangan Malaysia Kelapan (2001-2005), Kerajaan Malaysia telah mengenal pasti sumber TBB sebagai bahan bakar kelima untuk dimasukkan ke dalam campuran penjanaan nasional, khususnya sisa biojisim dari kilang minyak sawit sebagai sumber TBB yang utama. Dasar ini secara tidak langsung telah mendorong penggunaan sumber TBB untuk mencapai pengurangan pelepasan karbon di atmosfera dengan maksimum.

Renewable Energy (RE) Based Generation

Renewable energy (RE) constitutes one of the main agendas in the development of the energy sector in Malaysia. With the introduction of the Fifth Fuel Policy under the Eighth Malaysia Plan (2001-2005), the Malaysian Government identified RE as the fifth fuel to be included into the national generation mix, with an emphasis on biomass from palm oil mills as the main source of RE. By encouraging the adoption of renewable energy sources, the policy has also indirectly contributed to efforts in reducing carbon emissions.

Selaras dengan perkembangan teknologi terkini serta kesedaran tentang pentingnya kelestarian alam sekitar, Kerajaan telah memperkenalkan Akta Tenaga Boleh Baharu 2011. Akta ini menetapkan dan melaksanakan sistem tarif khusus untuk memangkinkan penjanaan TBB serta langkah penyediaan hal-hal yang berkaitan.

Terkini, sumber TBB di Malaysia terdiri daripada solar PV, biogas, biojisim dan hidrokuasa kecil. Kesemua sumber TBB ini dijana di bawah program Tarif Galakan *(Feed-In Tariff)* atau FiT, LSS, Pemeteran Tenaga Bersih (NEM) dan Skim *Self Consumption* (SelCo).

Pada 2020, sumber TBB mewakili sebanyak 15.2% daripada keseluruhan kapasiti elektrik di Semenanjung dan Sabah. Peratusan ini telah meningkat sebanyak 6.6% berbanding 4.3% pada 2019. Peningkatan paling ketara ialah pada sumber tenaga solar di mana peratusan kapasitinya telah meningkat dari 3.7% pada 2019 kepada 4.6% pada 2020.

Antara faktor yang menyumbang kepada peningkatan peratusan kapasiti solar ini adalah pengenalan program LSS di mana ST bertindak selaku agensi pelaksana. Sehingga akhir 2020, sebanyak 856.75 MW tenaga solar di bawah program ini telah direkodkan untuk Semenanjung dan Sabah.

In line with the latest technological developments and enhanced awareness of environmental sustainability, the Government introduced the Renewable Energy Act 2011 whereby a tariff system was implemented with the aim to drive RE generation together with relevant preparation measures.

Currently, RE resources in Malaysia consist of solar PV, biogas, biomass and small hydropower which are generated through the Feed-In Tariff (FiT), LSS, Net Energy Metering (NEM) and Self Consumption Scheme (SelCo) programmes.

In 2020, renewable energy accounted for 15.2% of the total electricity capacity in the Peninsula and Sabah, which is an increase of 6.6% compared to 4.3% in 2019. The most significant increase was in solar capacity which went from 3.7% in 2019 to 4.6% in 2020.

Among the factors that contributed to the increase in solar capacity was the introduction of the LSS programme with the Commission as the implementing agency. At the end of 2020, a total of 856.75 MW of solar energy was generated under this programme in the Peninsula and Sabah.

Peratusan Kapasiti Elektrik TBB di Semenanjung Malaysia dan Sabah, 2019 & 2020
Percentage of RE Electricity Capacity in Peninsular Malaysia and Sabah, 2019 & 2020

Tahun *Year*	Hidro *Hydro*	Biojisim *Biomass*	Solar *Solar*	Biogas *Biogas*	Jumlah *Total*
2019	**8.9%**	**1.2%**	**3.7%**	**0.5%**	**14.3%**
2020	**8.9%**	**1.2%**	**4.6%**	**0.5%**	**15.2%**

PEMBEKALAN GAS ASLI
NATURAL GAS SUPPLY

PENGGUNAAN GAS ASLI MENGIKUT SEKTOR

Semenanjung Malaysia

Pada 2020, jumlah penggunaan gas asli di Semenanjung yang dibekalkan oleh Petronas Energy and Gas Trading Sdn. Bhd. (PEGT) adalah sebanyak 723,181,850.62 mmBTU, manakala jumlah penggunaan yang dibekalkan oleh Gas Malaysia Energy and Services Sdn. Bhd. (GMES) adalah sebanyak 199,853,557 mmBTU.

NATURAL GAS CONSUMPTION BY SECTOR

Peninsular Malaysia

In 2020, 723,181,850.62 mmBTU of natural gas consumed in the Peninsula was supplied by Petronas Energy and Gas Trading Sdn. Bhd. (PEGT), while 199,853,557 mmBTU was supplied by Gas Malaysia Energy and Services Sdn. Bhd. (GMES).

Penggunaan Gas Asli di Semenanjung Malaysia, 2020
Natural Gas Consumption in Peninsular Malaysia, 2020

Syarikat *Company*	Penggunaan mengikut Sektor (mmBTU) *Consumption by Sector (mmBTU)*			
	Industri *Industry*	**Komersial** *Commercial*	**Domestik** *Domestic*	**Jumlah** *Total*
PEGT	**204,570,076.34**	**296,281,027.61**	**222,330,746.67**	**723,181,850.62**
GMES	**199,216,710**	**606,643**	**30,204**	**199,853,557**

Bagi penggunaan oleh PEGT, 28% daripada jumlah penggunaan adalah dalam sektor industri, makakala 41% adalah daripada sektor komersial dan baki 31% daripada sektor domestik.

Majoriti penggunaan gas asli oleh GMES pula adalah digunakan oleh sektor industri iaitu sebanyak 199,216,710 mmBTU atau bersamaan dengan 99.68% daripada jumlah keseluruhan penggunaan gas asli oleh GMES. Sektor komersial pula telah menggunakan sebanyak 606,643 mmBTU dan sektor domestik 30,204 mmBTU.

The industrial sector accounted for 28% of the total consumption of PEGT natural gas, whereas 41% was by the commercial sector with the remaining 31% by the domestic sector.

The majority of natural gas supplied by GMES was used by the industrial sector amounting to 199,216,710 mmBTU, which is equivalent to 99.68% of its total supply. The remaining was consumed by the commercial and domestic sectors at 606,643 mmBTU and 30,204 mmBTU respectively.

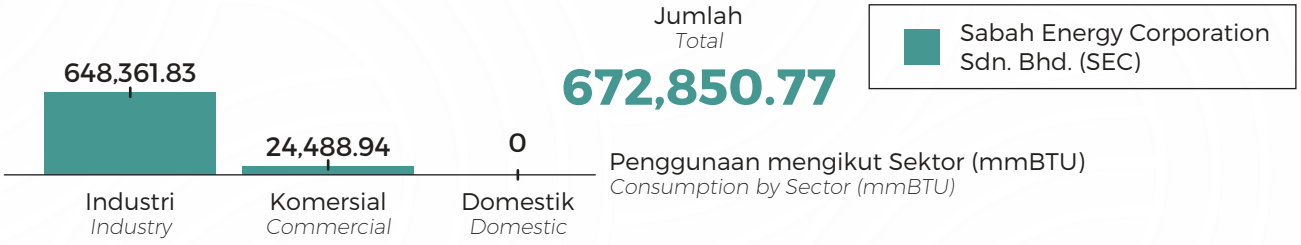
Sabah dan Labuan

Pada 2020, penggunaan gas asli di Sabah dan Labuan merekodkan bacaan sebanyak 672,850.77 mmBTU. Sebahagian besar daripada penggunaan gas asli adalah oleh sektor industri dengan jumlah penggunaan sebanyak 648,361.83 mmBTU dan selebihnya digunakan oleh sektor komersial sebanyak 24,488.94 mmBTU. Tiada penggunaan gas asli dicatatkan oleh sektor domestik negeri tersebut.

Sabah and Labuan

In 2020, natural gas consumption in Sabah and Labuan stood at 672,850.77 mmBTU. The majority of natural gas amounting to 648,361.83 mmBTU was used by the industrial sector and the remaining 24,488.94 mmBTU by the commercial sector. The domestic sector in Sabah and Labuan did not record any consumption of natural gas.

Penggunaan Gas Asli di Sabah dan Labuan, 2020
Natural Gas Consumption in Sabah and Labuan, 2020



PENGGUNAAN GAS ASLI MENGIKUT SUB-INDUSTRI

Penggunaan gas asli untuk sektor bukan tenaga yang dibekalkan oleh PEGT bagi kategori sub-industri kimia, mesin dan peralatan dan lain-lain masing-masing adalah sebanyak 112,638,418.19 mmBTU, 2659.91 mmBTU dan 91,928,998.24 mmBTU. Ini menjadikan jumlah penggunaan gas asli untuk sektor bukan tenaga yang dibekalkan oleh PEGT sebanyak 204,570,076.34 mmBTU.

NATURAL GAS CONSUMPTION BY SUB-INDUSTRY

PEGT natural gas supplied to the chemical, machinery and equipment, and other sub-industries within the non-energy sector were 112,638,418.19 mmBTU, 2659.91 mmBTU and 91,928,998.24 mmBTU respectively. This brings the total consumption of PEGT natural gas by the non-energy sector to 204,570,076.34 mmBTU.

Selain itu, penggunaan gas asli bagi sektor tenaga pula adalah sebanyak 296,281,027.61 mmBTU, manakala bagi eksport adalah 50,976,956.57 mmBTU.

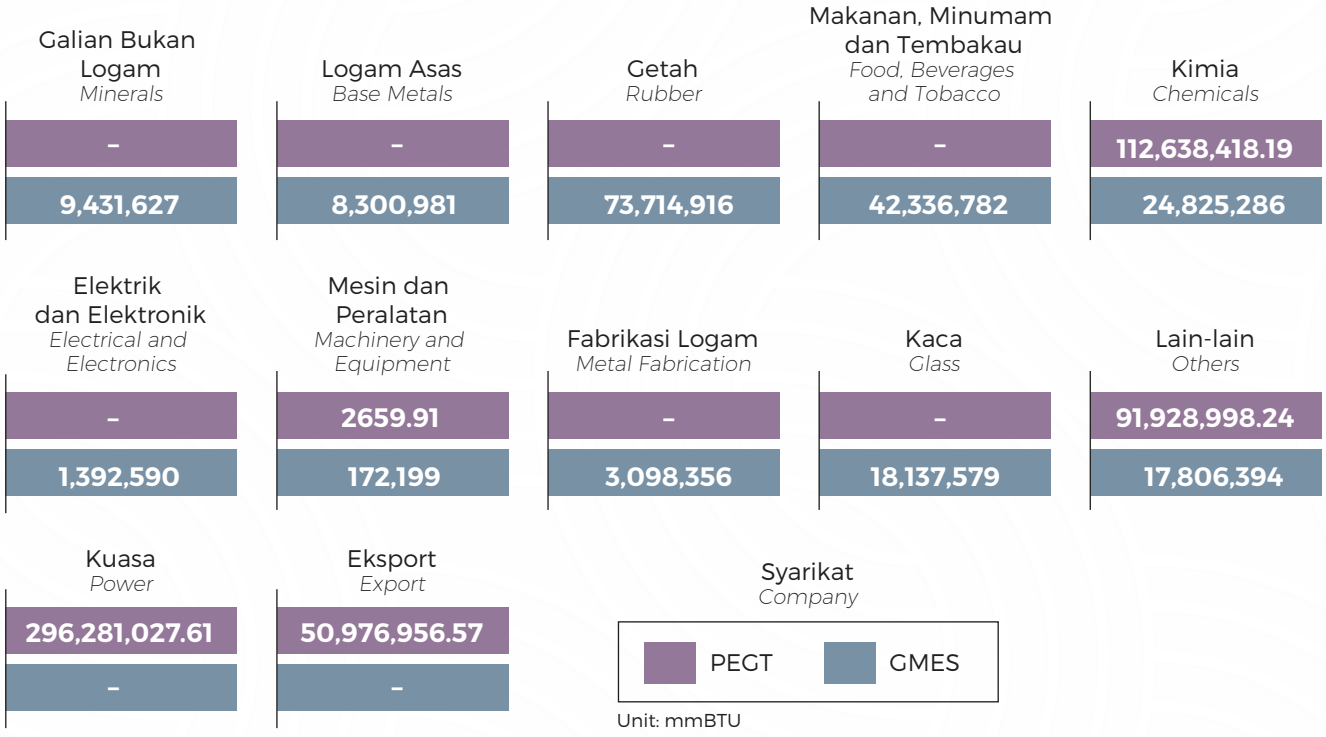
Bagi tahun yang sama, penggunaan secara keseluruhan untuk GMES pula adalah sebanyak 199,216,710 mmBTU gas asli untuk sektor bukan tenaga. Penggunaan tertinggi jatuh di bawah sub-industri getah iaitu sebanyak 73,714,916 mmBTU.

Consumption of natural gas by the energy sector and export sector amounted to 296,281,027.61 mmBTU and 50,976,956.57 mmBTU respectively.

Meanwhile, the total consumption of GMES natural gas by the non-energy sector was 199,216,710 mmBTU, led by the rubber sub-industry with 73,714,916 mmBTU consumed.

Penggunaan Gas Asli mengikut Sub-Industri Bagi Sektor Bukan Tenaga, Tenaga dan Eksport di Semenanjung Malaysia, 2020

Natural Gas Consumption by Sub-Industry for the Non-Energy, Energy and Export Sectors in Peninsular Malaysia, 2020



PENGGUNA GAS ASLI MENGIKUT SEKTOR
NATURAL GAS CONSUMERS BY SECTOR

Jumlah Pengguna Gas Asli mengikut Sektor di Semenanjung Malaysia dan Sabah/Labuan, 2020

Total Natural Gas Consumers by Sector in Peninsular Malaysia and Sabah/Labuan, 2020

Syarikat *Company*	**Penggunaan mengikut Sektor (mmBTU)** *Consumption by Sector (mmBTU)*			
	Industri *Industry*	**Komersial** *Commercial*	**Domestik** *Domestic*	**Jumlah** *Total*
PEGT	**24**	**13**	**1**	**38**
GMES	**961**	**946**	**11,348**	**13,255**
SEC	**24**	**2**	**0**	**26**

Bagi PEGT, jumlah pengguna gas asli terdiri daripada 24 pengguna dari sektor industri, 13 pengguna dari sektor komersial dan hanya satu (1) pengguna dari sektor domestik.

Bagi GMES pula, sebahagian besar pengguna mereka adalah daripada sektor domestik iaitu seramai 11,348 pengguna. Pengguna sektor industri dan sektor komersial GMES tidak menunjukkan perbezaan bilangan pengguna yang ketara iaitu masing-masing mencatatkan bilangan pengguna sebanyak 961 dan 946. Secara keseluruhannya, jumlah pengguna gas asli GMES adalah seramai 13,255 pengguna.

Di Sabah dan Labuan, pengguna gas asli SEC adalah seramai 26 pengguna sahaja, di mana 24 daripadanya adalah pengguna dari sektor industri dan selebihnya adalah dari sektor komersial.

For PEGT, there were a total of 24 natural gas consumers from the industrial sector, 13 consumers from the commercial sector and one (1) consumer from the domestic sector.

The majority of GMES consumers were from the domestic sector amounting to 11,348 consumers. There was no significant difference in the number of consumers in the industrial and commercial sectors with 961 and 946 consumers respectively. Overall, the total number of consumers of GMES natural gas stood at 13,255.

In Sabah and Labuan, there were only 26 consumers of SEC natural gas, of which 24 were consumers from the industrial sector and the remaining from the commercial sector.

TALIAN PAIP GAS ASLI

NATURAL GAS PIPELINE

Setakat 2020, talian paip jenis *steel* untuk pengagihan gas asli adalah sepanjang 4,474.63 km, manakala bagi jenis *polyethylene* adalah sepanjang 430.24 km untuk Semenanjung, Sabah dan Labuan.

As of 2020, the steel pipeline within the natural gas distribution of the Peninsula, Sabah and Labuan is 4,474.63 km in length while the polyethylene pipeline is 430.24 km in length.

Talian Paip Gas Asli di Semenanjung Malaysia dan Sabah/Labuan, 2020
Natural Gas Pipelines in Peninsular Malaysia and Sabah/Labuan, 2020

Syarikat *Company*	**Talian Paip (km)** *Pipeline (km)*	
	Polyethylene	***Steel***
PGB	**-**	**2,522.72**
TTMM	**-**	**8.2**
GMD	**420.43**	**1,939.71**
SEC	**9.81**	**4.00**

Di Semenanjung, kebanyakan talian paip adalah daripada jenis *steel* yang merupakan milik Petronas Gas Berhad (PGB), Trans Thai-Malaysia (Malaysia) Sdn. Bhd. (TTMM) dan juga Gas Malaysia Distribution Sdn. Bhd. (GMD), manakala talian paip jenis *polyethylene* sepanjang 420.43 km merupakan milik GMD.

Panjang talian paip PGB adalah 2,522.72 km, TTMM pada 8.2 km dan GMD sepanjang 1,939.71 km.

Talian paip pengagihan di Sabah dan Labuan sepanjang 13.81 km merupakan milik SEC di mana 9.81 km adalah paip jenis *polyethylene* dan 4.00 km lagi adalah paip jenis *steel*.

In the Peninsula, most of the pipelines are of the steel variant and are owned by Petronas Gas Berhad (PGB), Trans Thai-Malaysia (Malaysia) Sdn. Bhd. (TTMM) and Gas Malaysia Distribution Sdn. Bhd. (GMD) while the 420.43 km pipeline of the polyethylene variant belongs to GMD.

The PGB pipeline is 2,522.72 km in length, followed by TTMM at 8.2 km and GMD at 1,939.71 km in length.

The 13.81 km distribution pipelines in Sabah and Labuan are owned by SEC of which 9.81 km are polyethylene pipes and the remaining 4.00 km are steel pipes.

PRESTASI SISTEM PENGHANTARAN
TRANSMISSION SYSTEM PERFORMANCE

Semenanjung Malaysia

Di Semenanjung, sistem penghantaran dibina, dikendali dan disenggara oleh syarikat utiliti nasional iaitu Tenaga Nasional Berhad (TNB). ST bertanggungjawab memantau prestasi sistem penghantaran dalam memastikan kebolehharapan bekalan elektrik dengan mengukur prestasi daya harap bekalan elektrik menggunakan *Delivery Points Unreliability Index* (DePUI) atau sistem minit.

Prestasi sistem penghantaran TNB di Semenanjung dalam tempoh lima (5) tahun ke belakang menunjukkan peningkatan yang signifikan dengan penurunan DePUI sebanyak 70%, iaitu daripada 0.271 minit pada 2019 kepada 0.080 minit pada 2020. Jika dibandingkan dengan 2018 pula, trend penurunan DePUI juga dapat dilihat menurun sebanyak 77% daripada 0.348 minit kepada 0.080 minit pada 2020.

Secara keseluruhannya, prestasi DePUI bagi grid nasional pada 2020 masih berada di tahap yang baik dan tidak melebihi sasaran yang ditetapkan oleh ST iaitu dua (2) minit.

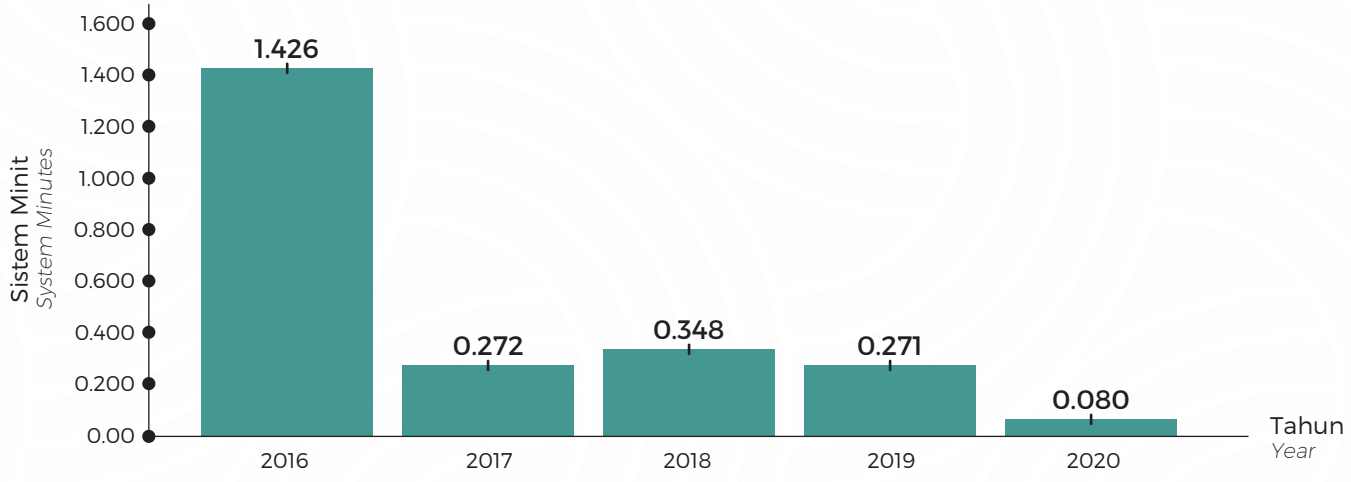
Peninsular Malaysia

The transmission system in the Peninsula is built, operated and maintained by the national utility company, Tenaga Nasional Berhad (TNB). The Commission is responsible for monitoring the performance of the transmission system in ensuring the reliability of electricity supply which is measured using the Delivery Points Unreliability Index (DePUI) or system minutes.

There were significant improvements to TNB's transmission system performance in the Peninsula over the past five (5) years. This is reflected in the decline of DePUI by 70%, from 0.271 minutes in 2019 to 0.080 minutes in 2020. Furthermore, there was a downward trend in DePUI with a decline of 77% to 0.080 minutes in 2020 compared to 0.348 minutes back in 2018.

Overall, the national grid's DePUI performance fared well in 2020 and did not exceed the target as set at two (2) minutes by the Commission.

Prestasi DePUI di Semenanjung Malaysia (TNB), 2016-2020
DePUI Performance in Peninsular Malaysia (TNB), 2016-2020



Selain itu, tiada kejadian insiden lucutan beban (UFLS) dicatatkan di Semenanjung pada 2020.

Tiada juga kejadian *Wide Area System Loss* (WASL) dilaporkan bagi Semenanjung pada 2020 yang melibatkan kehilangan beban melebihi 1,880 MW atau 10% daripada permintaan puncak, 18,808 MW.

In addition, no incidents of under frequency load shedding (UFLS) were recorded in the Peninsula in 2020.

There were also no Wide Area System Loss (WASL) incidents involving load losses exceeding 1,880 MW or 10% of the peak demand, 18,808 MW, reported in the Peninsula in 2020.

Sabah and Labuan

Di Sabah dan Labuan, sistem penghantaran dimiliki, dioperasi dan disenggara oleh SESB. Dalam tempoh lima (5) tahun terakhir, prestasi sistem penghantaran telah menunjukkan prestasi yang bertambah baik dengan penurunan DePUI sebanyak 45%, di mana gangguan di sistem grid telah menurun daripada 25.29 minit pada 2016 kepada 13.96 minit pada 2020. Walau bagaimanapun, tetap terdapat peningkatan DePUI sebanyak 0.522 minit pada 2020 berbanding 2019, disebabkan peningkatan pada bilangan insiden lucutan beban daripada sembilan (9) insiden pada 2019 kepada 13 insiden pada 2020.

Di samping itu juga, terdapat tiga (3) insiden *Special Protection System* (SPS) yang telah beroperasi iaitu pada 11 Mei 2020, 3 Julai 2020 dan 14 Julai 2020.

Pada keseluruhannya, prestasi sistem minit bagi grid Sabah dan Labuan pada 2020 berada di tahap yang baik dan dalam sasaran yang ditetapkan ST iaitu 50 minit.

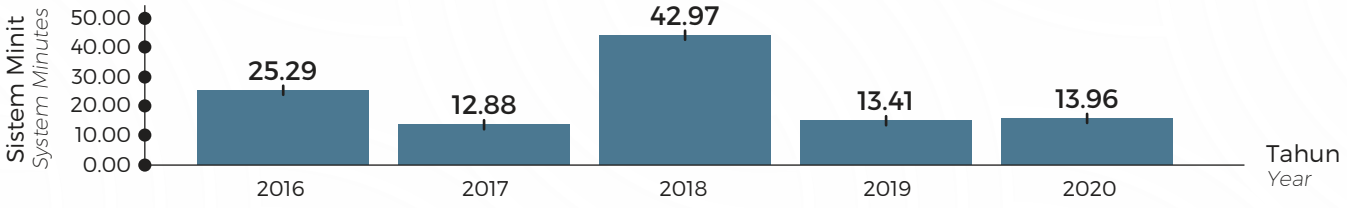
Sabah and Labuan

In Sabah and Labuan, the transmission system is owned, operated and maintained by SESB. Over the last five (5) years, the performance of the transmission system showcased improvements with a 45% decrease in DePUI, whereby grid system interruptions decreased from 25.29 minutes in 2016 to 13.96 minutes in 2020. However, there was an increase in DePUI of 0.522 minutes in 2020 compared to 2019 due to an increase in the number of load loss incidents from nine (9) incidents in 2019 to 13 incidents in 2020.

Additionally, there were three (3) Special Protection System (SPS) incidents which operated on 11 May 2020, 3 July 2020 and 14 July 2020.

Overall, the performance of the system minutes for the Sabah and Labuan grids in 2020 stood at a satisfactory level within the 50 minutes target as set by the Commission.

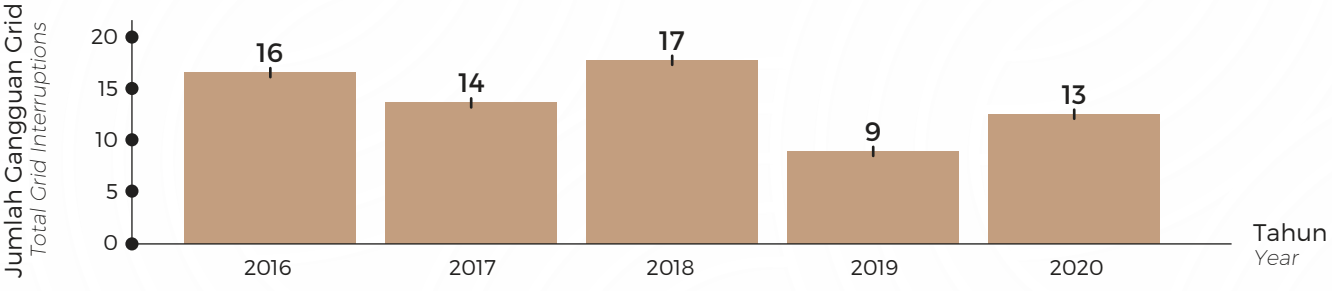
Prestasi DePUI di Sabah dan Labuan (SESB), 2016-2020
DePUI Performance in Sabah and Labuan (SESB), 2016-2020



Lanjutan peningkatan bilangan insiden lucutan beban dari sembilan (9) insiden pada 2019 ke 13 insiden pada 2020 ini juga, jumlah kehilangan bekalan akibat gangguan di sistem grid dicatatkan pada 489.47 MWj iaitu peningkatan sebanyak 119% pada 2020 berbanding 223.65 MWj pada 2019.

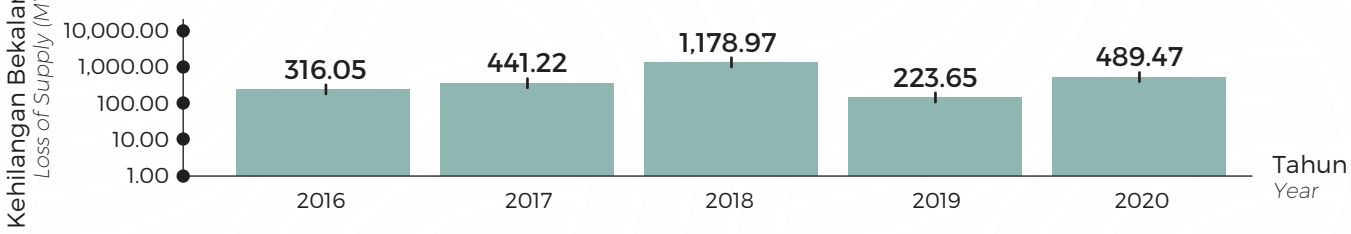
Following the increase in the number of load loss incidents from nine (9) incidents in 2019 to 13 incidents in 2020, the total supply loss due to grid system interruptions was recorded at 489.47 MWh, which is an increase of 119% in 2020 compared to 223.65 MWh in 2019.

Jumlah Insiden Kehilangan Beban Berpunca daripada Gangguan Sistem Grid di Sabah dan Labuan, 2016-2020
Total Load Loss Incidents due to Grid System Interruptions in Sabah and Labuan, 2016-2020



Kehilangan Bekalan di Sabah dan Labuan, 2016-2020

Loss of Supply in Sabah and Labuan, 2016-2020



Tiada WASL direkodkan pada 2020 sama seperti 2019 yang melibatkan kehilangan beban melebihi 300 MW atau 30% permintaan puncak, 1,001 MW.

As with 2019, there were no WASL incidents involving load losses exceeding 300 MW or 30% of the peak demand, 1,001 MW, recorded in 2020.

PRESTASI SISTEM PENGAGIHAN
DISTRIBUTION SYSTEM PERFORMANCE

SAIDI, SAIFI DAN CAIDI ELEKTRIK

Semenanjung Malaysia

Pencapaian *System Average Interruption Duration Index* (SAIDI) terkumpul di Semenanjung telah menunjukkan prestasi yang baik dengan catatan SAIDI sebanyak 44.95 minit/pelanggan/tahun pada 2020, berbanding 48.13 minit/pelanggan/tahun pada 2019, yang bersamaan dengan penurunan sebanyak 6.6%.

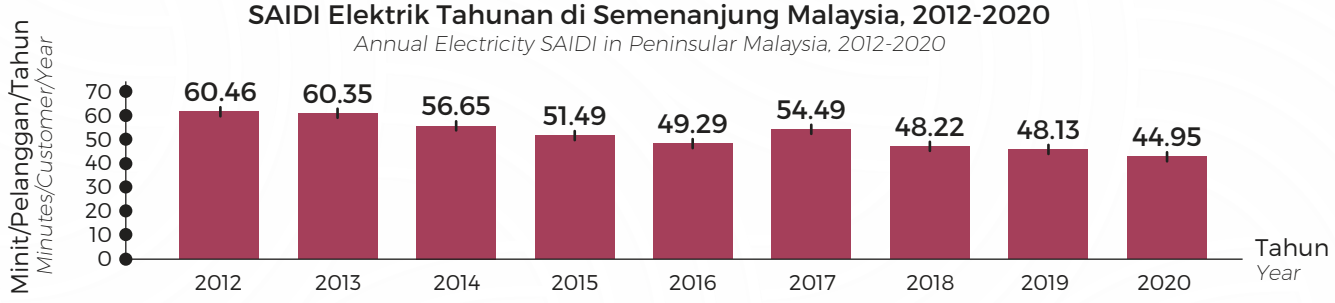
ELECTRICITY SAIDI, SAIFI AND CAIDI

Peninsular Malaysia

The System Average Interruption Duration Index (SAIDI) performance in the Peninsula fared well with SAIDI recorded at 44.95 minutes/customer/year in 2020, compared to 48.13 minutes/customer/year in 2019, which is equivalent to a decrease of 6.6%.

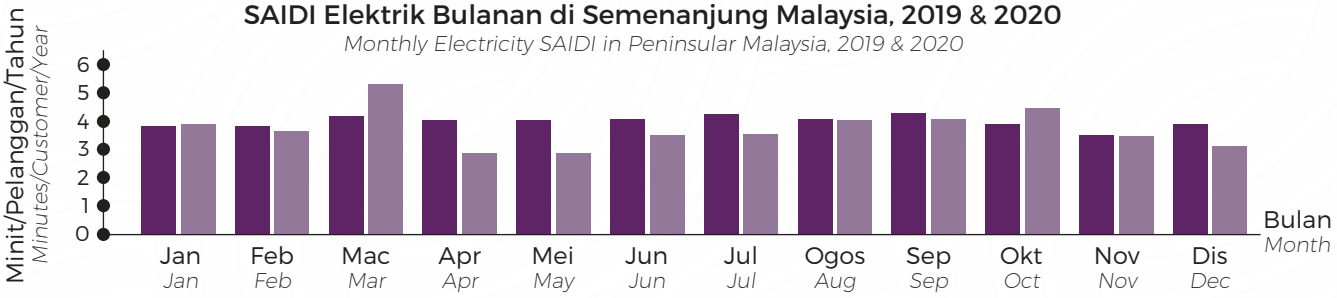
SAIDI Elektrik Tahunan di Semenanjung Malaysia, 2012-2020

Annual Electricity SAIDI in Peninsular Malaysia, 2012-2020



SAIDI Elektrik Bulanan di Semenanjung Malaysia, 2019 & 2020

Monthly Electricity SAIDI in Peninsular Malaysia, 2019 & 2020



	Jan	Feb	Mac	Apr	Mei	Jun	Jul	Ogos	Sep	Okt	Nov	Dis
SAIDI 2019	3.86	3.8	4.2	4.05	4.06	4.08	4.27	4.09	4.3	3.94	3.54	3.94
SAIDI 2020	3.89	3.68	5.3	2.87	2.88	3.51	3.58	4.06	4.11	4.48	3.48	3.14

Sasaran SAIDI di Semenanjung kekal di bawah 55 minit/pelanggan/tahun seperti 2019.

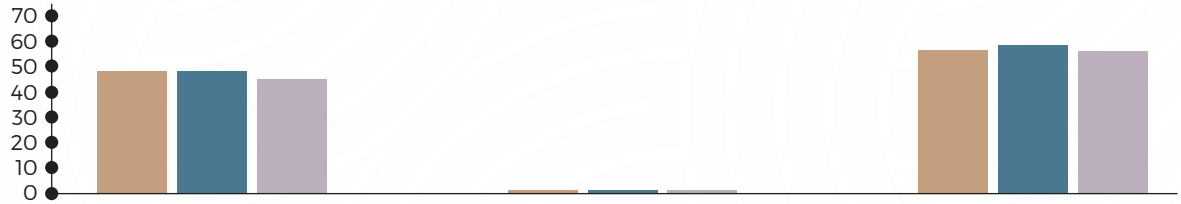
Secara keseluruhannya, prestasi SAIDI, *System Average Interruption Frequency Index* (SAIFI) dan *Customer Average Interruption Duration Index* (CAIDI) adalah bertambah baik di Semenanjung hasil daripada usaha bersama untuk memastikan grid sentiasa berada di dalam keadaan yang mantap.

The target for SAIDI in the Peninsula remained below 55 minutes/customer/year as in 2019.

Overall, the performance of SAIDI, System Average Interruption Frequency Index (SAIFI) dan Customer Average Interruption Duration Index (CAIDI) in the Peninsula improved as a result of joint efforts to ensure that the grid remains in peak condition.

SAIDI, SAIFI dan CAIDI di Semenanjung Malaysia, 2018-2020

SAIDI, SAIFI dan CAIDI in Peninsular Malaysia, 2018-2020



	SAIDI Minit/Pelanggan/TAHUN *Minutes/Customer/Year*	**SAIFI** Gangguan/Pelanggan/TAHUN *Interruptions/Customer/Year*	**CAIDI** Minit *Minutes*
2018	48.22	0.86	56.07
2019	48.13	0.83	57.99
2020	44.95	0.8	56.05

Sabah

Bagi Sabah, SAIDI terkumpul pada 2020 secara keseluruhannya telah menurun iaitu pada 189.44 minit/pelanggan/tahun berbanding 205.31 minit/pelanggan/tahun pada 2019.

Walaupun prestasi SAIDI bagi 2020 menunjukkan penurunan yang signifikan, pencapaian tersebut masih tidak mencapai sasaran yang telah ditetapkan iaitu di bawah 150 minit/pelanggan/tahun.

Sabah

For Sabah, the overall SAIDI decreased to 189.44 minutes/customer/year in 2020 compared to 205.31 minutes/customer/year in 2019.

Although SAIDI performance in 2020 recorded a significant improvement, the set target of below 150 minutes/customer/year was not met.

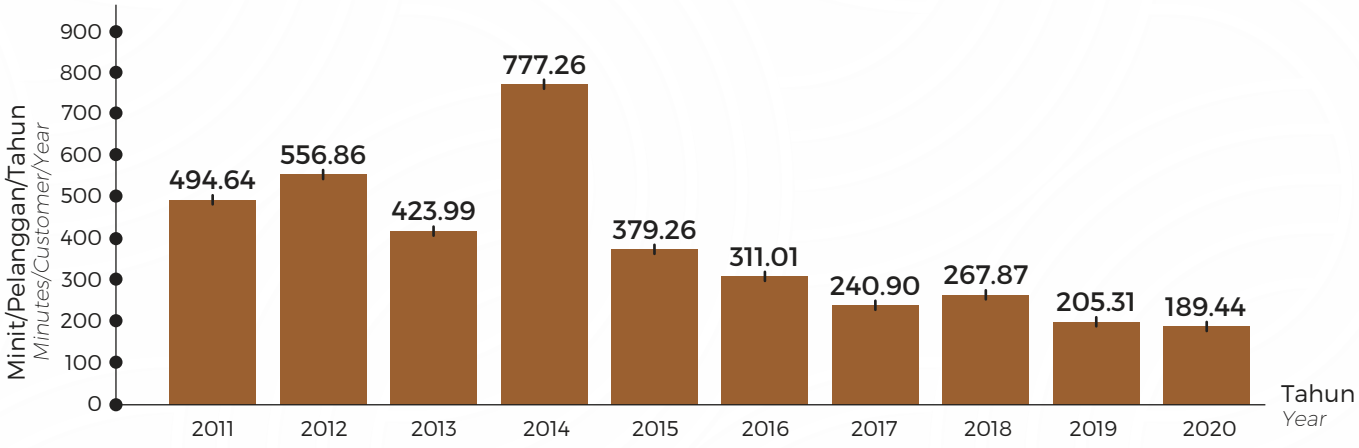
Pecahan SAIDI Elektrik Tahunan di Sabah (Minit/Pelanggan/Tahun), 2014-2020

Annual Electricity SAIDI Breakdown in Sabah (Minutes/Customer/Year), 2014-2020

SAIDI	2014	2015	2016	2017	2018	2019	2020
Keseluruhan *Overall*	**777.26**	**379.26**	**311.01**	**240.90**	**267.87**	**205.31**	**189.44**
SAIDI Penjanaan *Generation SAIDI*	**385.74**	**22.31**	**70.95**	**3.70**	**6.46**	**4.29**	**2.80**
SAIDI Penghantaran *Transmission SAIDI*	**157.83**	**130.92**	**18.39**	**10.12**	**2.88**	**2.09**	**1.56**
SAIDI Pengagihan *Distribution SAIDI*	**233.7**	**226.04**	**221.67**	**227.08**	**258.54**	**198.93**	**185.07**

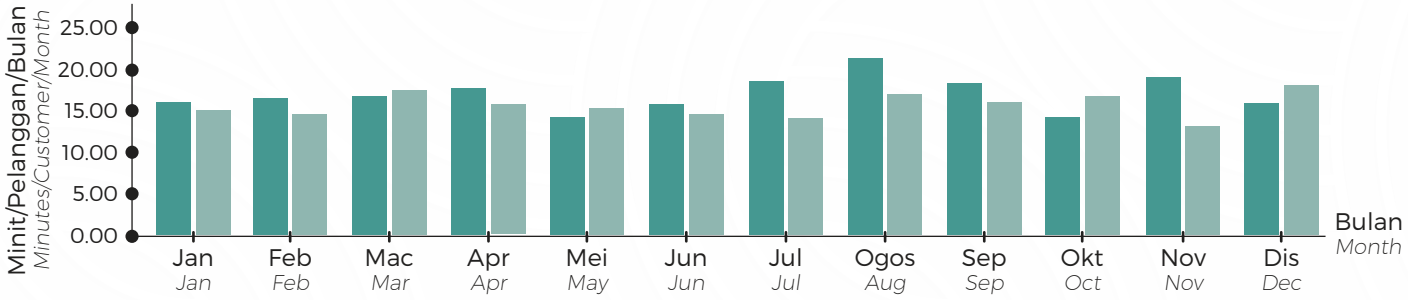
SAIDI Elektrik Tahunan di Sabah, 2011-2020

Annual Electricity SAIDI in Sabah, 2011-2020



SAIDI Elektrik Bulanan di Sabah, 2019 & 2020

Monthly Electricity SAIDI in Sabah, 2019 & 2020



	Jan	Feb	Mac	Apr	Mei	Jun	Jul	Ogos	Sep	Okt	Nov	Dis
SAIDI 2019	16.14	16.41	16.98	17.82	14.25	15.85	19.03	21.37	18.47	14.20	19.04	15.75
SAIDI 2020	15.28	14.84	17.63	15.97	15.19	14.68	14.31	17.15	15.97	16.90	13.26	18.25

Bagi menangani isu daya harap bekalan elektrik di Sabah, inisiatif di peringkat pengagihan perlu dipergiatkan memandangkan ianya menyumbang sebanyak 97.7% kepada SAIDI keseluruhan pada 2020, dengan catatan 185.07 minit/pelanggan/tahun, diikuti penjanaan pada 2.80 minit/pelanggan/tahun dan penghantaran pada 1.56 minit/pelanggan/tahun.

Sepanjang tempoh 2015 sehingga 2020, jurang SAIDI antara ketiga-tiga sektor di Sabah telah berkurangan dengan perbezaan yang ketara dengan penurunan purata sebanyak 30% sehingga 50% bagi setiap sektor pada 2020.

To address the issue of electricity supply reliability in Sabah, initiatives at the distribution level need to be intensified as it contributed to 97.7% of the overall SAIDI in 2020. This was recorded at 185.07 minutes/customer/year, followed by generation at 2.80 minutes/customer/year and transmission at 1.56 minutes/customer/year.

During the period of 2015 to 2020, the difference in SAIDI between the three sectors in Sabah narrowed substantially with an average decline of 30% to 50% in each sector in 2020.

SAIDI mengikut Sektor di Sabah (Minit/Pelanggan/Tahun), 2014-2020

SAIDI by Sector in Sabah (Minutes/Customer/Year), 2014-2020

SAIDI	2014	2015	2016	2017	2018	2019	2020
SEKTOR 1 *SECTOR 1*	**627.75**	**306.35**	**236.56**	**235.55**	**282.78**	**166.20**	**133.06**
SEKTOR 2 *SECTOR 2*	**925.06**	**469.55**	**380.48**	**208.30**	**254.41**	**284.67**	**318.56**
SEKTOR 3 *SECTOR 3*	**996.86**	**418.74**	**436.05**	**148.07**	**302.63**	**297.74**	**266.67**
JUMLAH *TOTAL*	**777.26**	**379.26**	**311.01**	**240.90**	**267.87**	**205.31**	**189.44**

Pada 2020, kadar SAIFI telah meningkat sebanyak 14.6% kepada 12.41 gangguan/pelanggan/tahun berbanding 10.83 gangguan/pelanggan/tahun pada 2019.

Punca utama kenaikan SAIFI pada 2020 adalah disebabkan kekerapan gangguan oleh kerosakan kabel dan gangguan pokok yang juga telah menyumbang kepada SAIDI yang tinggi.

CAIDI pula telah menunjukkan penurunan sebanyak 21.7% kepada 22.89 minit berbanding 29.26 minit pada 2019, hasil daripada tindakan pantas oleh pihak SESB dalam mengurangkan tempoh pemulihan bekalan melalui penaiktarafan sistem yang telah dibuat.

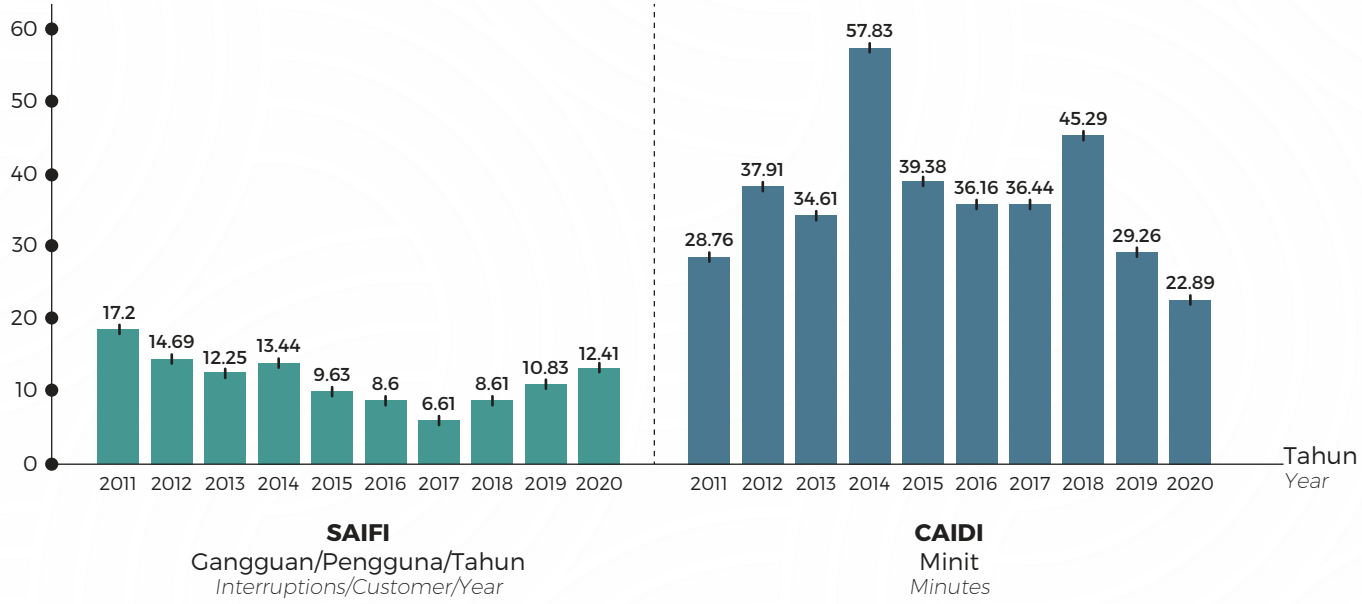
In 2020, the SAIFI rate increased by 14.6% to 12.41 interruptions/customer/year compared to 10.83 interruptions/customer/year in 2019.

This increase in SAIFI in 2020 was primarily due to frequent interruptions caused by cable damage and trees which also contributed to the increased SAIDI recorded.

Furthermore, CAIDI declined by 21.7% to 22.89 minutes compared to 29.26 minutes in 2019 as a result of the swift action undertaken by SESB to shorten the supply recovery period with the implementation of system upgrades.

SAIFI dan CAIDI di Sabah, 2011-2020

SAIFI and CAIDI in Sabah, 2011-2020



SAIDI SISTEM BEKALAN GAS BERPAIP UNTUK SEKTOR BUKAN TENAGA

Daya harap talian paip pengagihan gas asli di Semenanjung terus dipantau berdasarkan pencapaian SAIDI oleh pemegang lesen iaitu GMD.

Pencapaian SAIDI oleh GMD pada 2020 adalah 5.775 minit/pelanggan/tahun dan telah meningkat pada bulan Jun dan November disebabkan kerja-kerja penyenggaraan bagi pembuangan takungan air di dalam talian paip dan juga kebocoran pada talian paip disebabkan kebocoran paip air yang berhampiran. Bacaan ini telah melebihi sasaran yang ditetapkan iaitu 3.4505 minit/pelanggan/tahun.

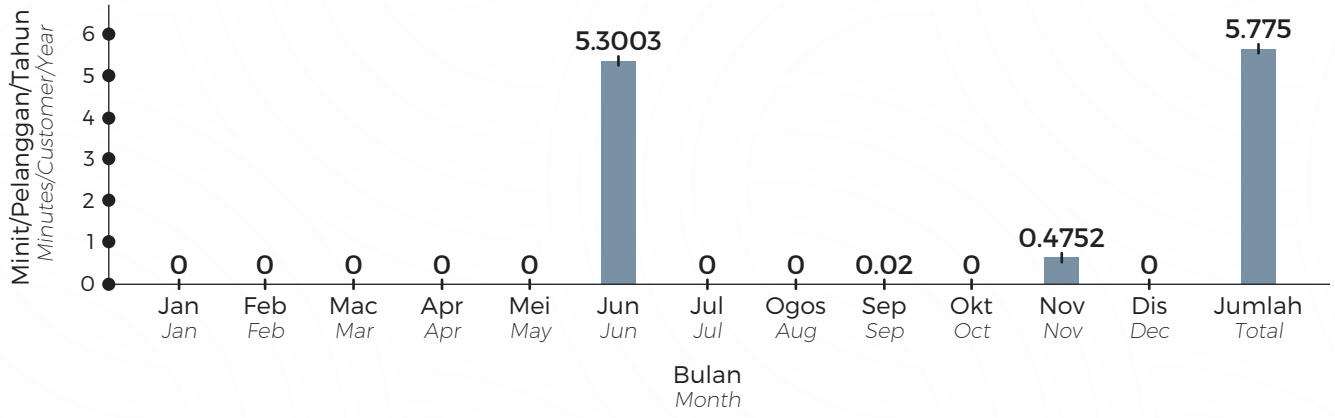
PIPED GAS SUPPLY SYSTEM SAIDI IN THE NON-ENERGY SECTOR

The reliability of the natural gas distribution pipeline in the Peninsula is continuously monitored based on the SAIDI achievements of the licensee, GMD.

GMD's SAIDI performance stood at 5.775 minutes/customer/year in 2020, having increased in June and November and exceeding the set target of 3.4505 minutes/customer/year. The increase was due to maintenance work for water reservoir discharge in the pipelines as well as pipeline leakages caused by water pipe leakages in the surrounding area.

SAIDI Sistem Bekalan Gas Berpaip untuk Sektor Bukan Tenaga di Semenanjung Malaysia (GMD), 2020

Piped Gas Supply System SAIDI in the Non-Energy Sector in Peninsular Malaysia (GMD), 2020



GANGGUAN BEKALAN ELEKTRIK

Semenanjung Malaysia

Semenanjung telah mencatatkan sedikit penurunan bagi jumlah keseluruhan bilangan gangguan bekalan elektrik bagi setiap 1,000 pelanggan pada 2020 di mana sebanyak 7.14 gangguan telah dicatatkan bagi setiap 1,000 orang pelanggan berbanding dengan 7.77 gangguan pada 2019.

Jumlah ini terdiri daripada 64,512 gangguan, di mana kebanyakannya merupakan insiden voltan rendah dan sederhana yang tidak berjadual.

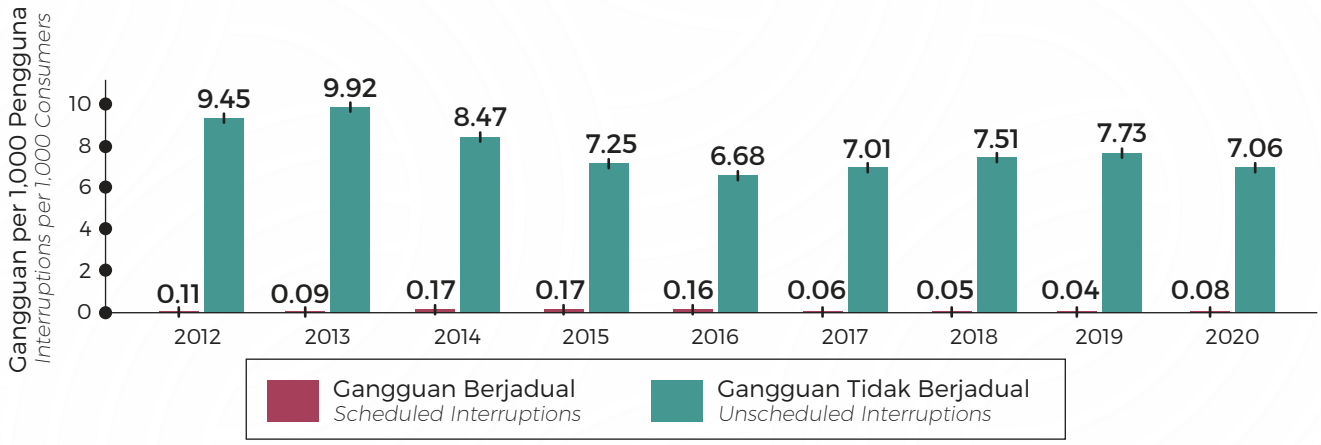
ELECTRICITY SUPPLY INTERRUPTIONS

Peninsular Malaysia

The Peninsula recorded a slight decrease in the total number of supply interruptions per 1,000 customers in 2020 with a total of 7.14 interruptions recorded per 1,000 customers compared to 7.77 interruptions in 2019.

This total accounted for 64,512 interruptions, the majority of which were unscheduled low and medium voltage incidents.

Gangguan Bekalan Elektrik TNB per 1,000 Pengguna di Semenanjung Malaysia, 2012-2020
TNB Electricity Supply Interruptions per 1,000 Consumers in Peninsular Malaysia, 2012-2020



Gangguan Bekalan mengikut Tahap Voltan Sehingga 2020
Supply Interruptions by Voltage Level as of 2020

Jenis Voltan *Voltage Level*	**Gangguan Tidak Berjadual** *Unscheduled Interruptions*	**Gangguan Berjadual** *Scheduled Interruptions*	**Jumlah** *Total*
Voltan Rendah *Low Voltage*	**55,648**	**653**	**56,301**
Voltan Sederhana *Medium Voltage*	**8,153**	**50**	**8,203**
Voltan Tinggi *High Voltage*	**8**	**–**	**8**
Jumlah *Total*	**63,809**	**703**	**64,512**

Sabah

Pada 2020, sistem pembekalan elektrik mencatatkan sebanyak 2.96 gangguan bagi setiap 1,000 pengguna yang terdiri daripada 4,188 gangguan berjadual dan 18,846 gangguan yang tidak berjadual.

Sabah

In 2020, the electricity supply system recorded a total of 2.96 interruptions per 1,000 consumers consisting of 4,188 scheduled interruptions and 18,846 unscheduled interruptions.

PRESTASI KUALITI KUASA
POWER QUALITY PERFORMANCE

KEJADIAN JUNAMAN VOLTAN

Sebanyak 678 kejadian junaman voltan telah direkodkan oleh *Power Quality Management System* (PQMS) TNB di Semenanjung bagi 2020 berbanding 805 kejadian pada 2019. Nilai $SARFI_{70}$ bagi TNB juga telah berkurang sebanyak 18 kepada 176 bagi 2020 berbanding 194 pada 2019.

VOLTAGE SAG INCIDENTS

A total of 678 voltage sag incidents were recorded by TNB's Power Quality Management System (PQMS) in the Peninsula for 2020 compared to 805 incidents in 2019. The $SARFI_{70}$ value for TNB also decreased by 18 to 176 in 2020 compared to 194 in 2019.

Johor telah mencatatkan rekod $SARFI_{70}$ tertinggi iaitu pada nilai 44, diikuti Kedah (21) dan Perak (20).

Walaupun bilangan aduan tertinggi yang direkodkan adalah di Pulau Pinang dengan 114 aduan, namun bilangan pengguna yang terlibat hanyalah 56 pengguna, dengan bilangan junaman voltan sebanyak 44 kejadian yang direkodkan oleh alat perakam TNB.

Bilangan insiden junaman voltan di *Kulim Hi-Tech Park* (KHTP) menurun kepada 27 insiden berbanding 28 insiden pada tahun sebelumnya. Begitu juga dengan bilangan pengguna terlibat iaitu daripada dua (2) pengguna pada 2019 kepada satu (1) pengguna sahaja pada 2020.

Tiada punca insiden junaman voltan yang disebabkan oleh NUR pada 2019 dan 2020.

Johor recorded the highest $SARFI_{70}$ at 44, followed by Kedah (21) and Perak (20).

Although the highest number of complaints recorded was in Penang with 114 complaints, the number of consumers involved was only 56 with TNB recording 44 incidents of voltage sags.

The number of voltage sag incidents at the Kulim Hi-Tech Park (KHTP) decreased to 27 incidents compared to 28 incidents in the previous year. The number of consumers involved also went down from two (2) in 2019 to only one (1) in 2020.

There were no voltage sag incidents caused by NUR in 2019 and 2020.

Punca-Punca Kejadian Junaman Voltan di Semenanjung Malaysia, 2018-2020
Causes of Voltage Sags in Peninsular Malaysia, 2018-2020

Sistem Penghantaran
Transmission System

Punca Junaman Voltan *Cause of Voltage Sags*	**2018**	**2019**	**2020**
Kilat *Lightning*	**92**	**75**	**48**
Kerosakan Talian Atas *Overhead Line Damage*	**19**	**26**	**14**
Kerosakan Alat Ubah *Transformer Damage*	**3**	**3**	**4**
Kerosakan Kabel *Cable Damage*	**8**	**7**	**3**
Pencerobohan *Trespassing*	**13**	**11**	**14**
Kerosakan Busbar *Busbar Damage*	**4**	**7**	**1**
Binatang / *Vegetation* *Animals / Vegetation*	**3**	**11**	**8**
Kerosakan Peralatan Suis *Switchgear Damage*	**5**	**2**	**5**
Tidak Diketahui *Unknown Causes*	**19**	**18**	**20**

Stesen Jana Kuasa Terpelantik *Tripped Power Station*	**0**	**0**	**0**
Pancaran Arca *Flashover*	**3**	**2**	**0**
Pihak Ketiga dan Vandalisme *Third Parties and Vandalism*	**3**	**2**	**3**

Sistem Pengagihan
Distribution System

Punca Junaman Voltan *Cause of Voltage Sags*	**2018**	**2019**	**2020**
Tidak Diketahui *Unknown Causes*	**238**	**106**	**56**
Kerosakan Kabel *Cable Damage*	**117**	**99**	**166**
Kerosakan Sambungan Kabel *Cable Joint Damage*	**123**	**97**	**113**
Autorecloser / Transient Fault	**41**	**22**	**111**
Kerosakan Konduktor Talian Atas *Overhead Line Conductor Damage*	**35**	**22**	**28**
Kerosakan Tamatan Kabel *Cable Termination Damage*	**10**	**15**	**23**
Kerosakan Peralatan Suis *Switchgear Damage*	**8**	**3**	**12**
Pancaran Arca *Flashover*	**14**	**5**	**3**
Kerosakan Sambungan Talian Atas *Overhead Line Joint Damage*	**10**	**2**	**1**
Pihak Ketiga dan Vandalisme *Third Parties and Vandalism*	**1**	**1**	**2**
Korekan Pihak Ketiga *Third Party Digging*	**6**	**2**	**5**
Kerosakan Alat Ubah *Transformer Damage*	**1**	**0**	**3**
Kilat *Lightning*	**7**	**2**	**1**
Pencerobohan / Binatang *Trespassing / Animals*	**0**	**1**	**0**
AVR / Kerosakan Alat Ubah *AVR / Transformer Damage*	**0**	**0**	**2**
Kerosakan Busbar *Busbar Damage*	**1**	**0**	**0**

PEMATUHAN TERHADAP TAHAP PERKHIDMATAN YANG DIJAMIN (GSL) DAN TAHAP PERKHIDMATAN MINIMUM (MSL) BAGI SEKTOR BEKALAN ELEKTRIK

COMPLIANCE OF THE GUARANTEED SERVICE LEVELS (GSL) AND MINIMUM SERVICE LEVELS (MSL) FOR THE ELECTRICITY SUPPLY SECTOR

Tahap Perkhidmatan yang Dijamin (GSL) Elektrik

Pencapaian keseluruhan Tahap Perkhidmatan yang Dijamin (GSL) bagi 2020 adalah lebih tinggi berbanding 2019 (98.66%) di mana ianya telah mencatatkan GSL sebanyak 99.61%. Peningkatan pencapaian bagi GSL 2 (97.45%) dan GSL 4 (99.72%) telah menyumbang kepada peningkatan pencapaian keseluruhan GSL tersebut.

Jumlah penalti keseluruhan GSL pada 2020 adalah dianggarkan sebanyak RM380,805.05. Penalti tertinggi adalah daripada GSL 2 iaitu sebanyak RM380,605.05.

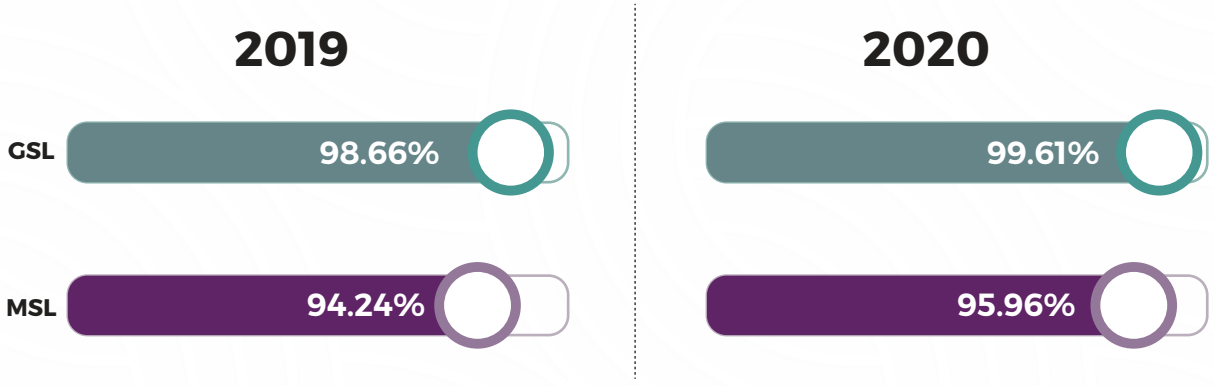
Electricity Guaranteed Service Levels (GSL)

The overall Guaranteed Service Levels (GSL) improved in 2020 with GSL recorded at 99.61% compared to 98.66% in 2019. The improved performance for GSL 2 (97.45%) and GSL 4 (99.72%) contributed to the increase in the overall performance of the GSL.

The total GSL penalty in 2020 was estimated at RM380,805.05 with the largest amount paid under GSL 2 amounting to RM380,605.05.

Kadar Pematuhan TNB untuk GSL dan MSL, 2019 dan 2020

TNB Compliance Rate for GSL and MSL, 2019 and 2020



Jumlah Penalti mengikut Jenis GSL, 2020

Total Penalty by Type of GSL, 2020

Jenis GSL *GSL Type*	**Jumlah Permohonan** *Total Applications*	**Jumlah Permohonan Diluluskan** *Total Approved Applications*	**Rebat Diluluskan (RM)** *Approved Rebates (RM)*
GSL 1	**0**	**0**	**–**
GSL 2	**0**	**40,415**	**380,605.05**
GSL 3	**0**	**0**	**–**
GSL 4	**0**	**0**	**–**
GSL 5	**14**	**2**	**200**

Pembayaran Rebat mengikut Jenis GSL (RM), 2016-2020
Rebate Payment by Type of GSL (RM), 2016-2020

Jenis GSL *GSL Type*	2016	2017	2018	2019	2020
GSL 1	0	0	–	–	–
GSL 2	848.55	169,652.63	516,314.96	276,890.95	380,605.05
GSL 3	0	0	–	–	–
GSL 4	0	0	–	–	–
GSL 5	0	0	200	24,200	200
Jumlah Keseluruhan *Overall Total*	848.55	169,652.63	516,514.96	301,090.95	380,805.05

Tahap Perkhidmatan Minimum (MSL) Elektrik

Pencapaian keseluruhan Tahap Perkhidmatan Minimum (MSL) juga didapati meningkat dari 94.24% pada 2019 kepada 95.96% pada 2020. MSL 2a, MSL 2b, MSL 4c dan MSL 5a mencatatkan peningkatan yang ketara berbanding 2019.

Electricity Minimum Service Levels (MSL)

The overall Minimum Service Levels (MSL) also increased from 94.24% in 2019 to 95.96% in 2020 with significant improvements recorded by MSL 2a, MSL 2b, MSL 4c and MSL 5a.

KAJIAN INDEKS KEPUASAN PELANGGAN TNB (CSI TNB)
TNB CUSTOMER SATISFACTION INDEX (CSI TNB) SURVEY

Pelaksanaan Kajian Indeks Kepuasan Pelanggan TNB (CSI-TNB) adalah bertujuan untuk mencapai dan mengekalkan kualiti khidmat pelanggan oleh TNB selaku syarikat utiliti tenaga elektrik. Antara tujuan Kajian CSI-TNB dilaksanakan adalah bagi:

- Mendapatkan tahap kepuasan pelanggan merentasi semua segmen.
- Mengenal pasti jurang di antara harapan pelanggan dan perkhidmatan yang diberikan oleh TNB bagi menambah baik kualiti perkhidmatan.
- Menghasilkan pelan tindakan strategik untuk memenuhi keperluan pelanggan.

Pada 2020, ST telah terlibat secara langsung dalam pelaksanaan Kajian CSI-TNB bagi 2020 bagi memastikan kaedah kajian yang digunapakai oleh TNB serta soalan-soalan kaji selidik adalah telus dan berintegriti.

Kerja-kerja lapangan dan pengumpulan maklumat Kajian CSI-TNB ini terdiri daripada temuramah secara fizikal dan secara dalam talian ke atas 5,200 responden bagi empat (4) segmen iaitu *Residential, Commercial, Industry* dan *Prime.*

The objective of the TNB Customer Satisfaction Index (CSI-TNB) Survey was to enhance and maintain the quality of customer service by TNB as an electricity utility company. The objectives of the CSI-TNB Survey were:

- *To obtain customer satisfaction levels across all segments.*
- *To identify the gap between customer expectations and the services provided by TNB to improve service quality.*
- *To produce strategic action plans to meet customer needs.*

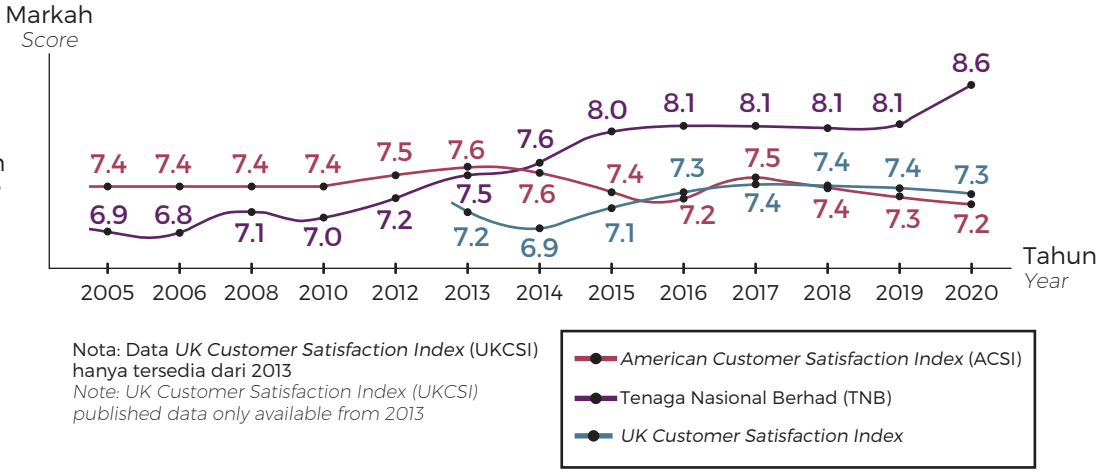
In 2020, the Commission was directly involved in the implementation of the CSI-TNB Survey to ensure the transparency and integrity of the research methods as well as the survey questions employed by TNB.

Fieldwork and information gathering under the CSI-TNB Survey involved physical and online interviews with 5,200 respondents from four (4) segments, namely Residential, Commercial, Industry and the Prime segments.

TNB telah mencatat rekod yang baik pada 2020 dengan pencapaian CSI sebanyak 8.6, melebihi markah tanda aras syarikat utiliti global

TNB has raised the bar in 2020 with an increase in CSI performance to 8.6, outperforming other global utility companies

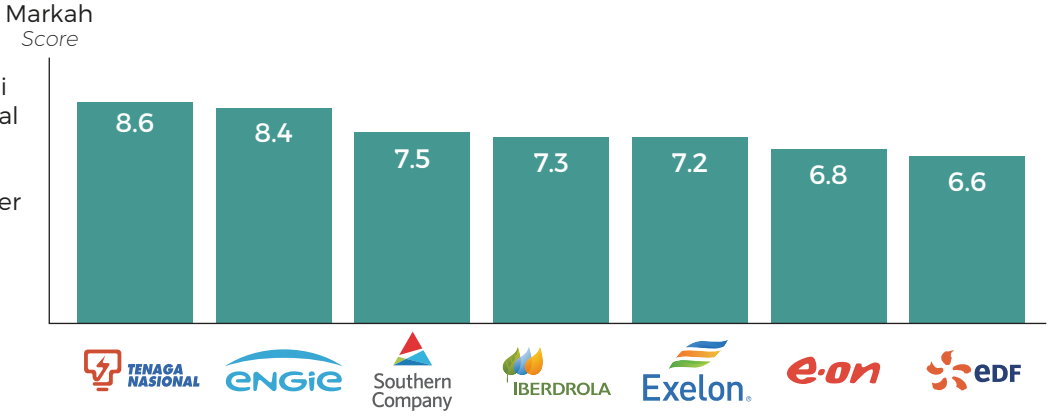
Markah TNB tercapai di sebalik prestasi global syarikat utiliti global yang menurun
TNB's score is impressive given the declining performance of global utility companies



Nota: Data *UK Customer Satisfaction Index* (UKCSI) hanya tersedia dari 2013
Note: UK Customer Satisfaction Index (UKCSI) published data only available from 2013

American Customer Satisfaction Index (ACSI)
Tenaga Nasional Berhad (TNB)
UK Customer Satisfaction Index

Markah TNB melebihi 10 syarikat utiliti global terbesar (mengikut nilai pasaran yang diterbitkan oleh Power Technology)
TNB scored higher than some of top 10 utility companies (by market value in 2019 published by Power Technology)



Nota: Data terkini yang diterbitkan diperoleh dari dalam talian
Note: Latest available published data obtained online

Bagi 2020, skor keputusan Kajian CSI-TNB mencatatkan sebanyak 8.6 mata, iaitu peningkatan sebanyak 0.5 mata berbanding skor yang diperolehi pada 2019. Pencapaian ini juga adalah melebihi markah tanda aras bagi beberapa syarikat utiliti global yang lain.

The CSI-TNB Survey in 2020 achieved a score of 8.6 points, an increase of 0.5 points compared to the results in 2019. This achievement also exceeded the benchmark score of other global utility companies.

MESYUARAT JAWATANKUASA PERANCANGAN DAN PELAKSANAAN PEMBEKALAN ELEKTRIK DAN TARIF (JPPPET)

THE PLANNING AND IMPLEMENTATION COMMITTEE FOR ELECTRICITY SUPPLY AND TARIFF (JPPPET) MEETING

Kabinet telah bersetuju dengan Pelan Pembangunan Penjanaan Semenanjung Malaysia yang telah diluluskan oleh Jawatankuasa Perancangan dan Pelaksanaan Pembekalan Elektrik dan Tarif (JPPPET) pada Oktober 2020. Pelan tersebut telah dibangunkan dengan memenuhi kriteria-kriteria perancangan yang ditetapkan serta bertujuan untuk mengimbangi tiga (3) elemen dalam Trilema Tenaga merangkumi jaminan, kemampuan dan kelestarian bekalan elektrik.

Semakan terhadap Pelan Pembangunan Penjanaan Semenanjung Malaysia (2020-2039) telah dilaksanakan dengan mempertimbangkan situasi semasa ekonomi negara yang terkesan oleh penularan pandemik Covid-19.

Bagi Sabah, mesyuarat JPPPET Sabah Bil. 1/2019 telah mengambil kira keperluan kapasiti baharu termal pada 2024 hingga 2025 iaitu selepas tamat operasi sejumlah 135 MW penjanaan diesel. Di samping itu, beberapa projek TBB seperti LSS dan hidro juga dirancang untuk dilaksanakan dalam tempoh jangka masa sederhana. Semakan terhadap Pelan Pembangunan Penjanaan Sabah juga sedang dilaksanakan dengan meneliti situasi semasa pembekalan dan permintaan serta ekonomi terkini Sabah lanjutan penularan pandemik Covid-19.

Kekurangan kapasiti penjanaan di Pantai Timur Sabah pula disokong oleh penjanaan di Pantai Barat melalui talian penghantaran 275 kV Kolopis-Segaliud. Kementerian juga telah bersetuju dengan pengoperasian semula Stesen Jana Kuasa Serudong dan Stesen Jana Kuasa Libaran bagi menyokong kapasiti penjanaan tersebut, terutamanya di kawasan Pantai Timur Sabah, namun ianya tertakluk kepada beberapa syarat teknikal dan komersial termasuklah tarif yang akan ditawarkan.

Di bawah Rancangan Malaysia ke-10 dan ke-11, dana sejumlah RM2.3 bilion juga telah diperuntukkan bagi pelaksanaan projek pengukuhan rangkaian oleh SESB dan Pasukan Projek Khas Bekalan Elektrik Sabah (PPKBES). Ini termasuk projek menaiktaraf talian penghantaran 132 kV kepada 275 kV daripada Segaliud ke Dam Road bagi meningkatkan kapasiti penyaluran elektrik daripada Pantai Barat ke Pantai Timur Sabah kepada 400 MW, yang dijangkakan siap pada 2022.

The Cabinet has agreed to the Peninsular Malaysia Generation Development Plan approved by the Planning and Implementation Committee for Electricity Supply and Tariff (JPPPET) in October 2020. The plan was developed based on the relevant planning criteria centred on the three (3) elements of the Energy Trilemma consisting of electricity supply security, affordability and sustainability.

A review of the Peninsular Malaysia Generation Development Plan (2020-2039) was implemented by taking into consideration the current economic situation of the country which had been impacted by the Covid-19 pandemic.

The Sabah JPPPET meeting No. 1/2019 reviewed the new thermal capacity requirements for 2024 to 2025 that will be enforced after the operational end of a 135 MW diesel generation. In addition, several LSS and hydro RE projects will be implemented in the near future. A review of the Sabah Generation Development Plan is also being carried out by examining the current supply and demand trends as well as the economic situation in Sabah following the Covid-19 pandemic.

The insufficient generation capacity in the East Coast of Sabah is being relieved by the West Coast via the 275 kV Kolopis-Segaliud transmission line. The Ministry also agreed to the reoperation of the Serudong Power Station and Libaran Power Station to support generation capacity in the East Coast of Sabah. However, this is subject to several technical and commercial conditions including tariffs to be offered.

Under the 10th Malaysia Plan and 11th Malaysia Plan, a total of RM2.3 billion was allocated for the network strengthening projects by SESB and the Special Project for Electricity Supply in Sabah (PPKBES) team. This includes a project to upgrade the 132 kV to 275 kV transmission line from Segaliud to Dam Road to increase electricity transmission capacity from the West Coast to the East Coast of Sabah to 400 MW. This project is targeted for completion in 2022.

DEMAND FORECASTING COMMITTEE (DFC) 2020

Penubuhan *Demand Forecasting Committee* (DFC) adalah sebagai platform bagi mendapatkan input dan nasihat daripada pihak-pihak berkepentingan serta kepakaran berhubung unjuran pertumbuhan ekonomi dan permintaan elektrik. Input daripada DFC dan unjuran permintaan elektrik yang diluluskan akan diguna pakai dalam Pelan Pembangunan Penjanaan di Semenanjung dan Sabah untuk kelulusan JPPPET di peringkat Kementerian yang seterusnya.

Mesyuarat DFC 2020 pada 19 Mei 2020 yang dipengerusikan oleh ST turut disertai wakil daripada Kementerian, utiliti, persatuan pengguna dan institusi penyelidikan. Antara agenda perbincangan adalah kaedah kajian dan andaian yang diguna pakai sebagai input bagi membangunkan unjuran permintaan elektrik untuk 2020 sehingga 2039. Antara penambahbaikan andaian lain dalam DFC 2020 melibatkan kemasukan tenaga yang dieksport oleh pengguna NEM dan penyertaan *cogeneration* untuk *New Enhanced Dispatch Arrangement* (NEDA).

Bagi 2020, pastinya salah satu cabaran yang dihadapi dalam penentuan andaian adalah ketidaktentuan unjuran pertumbuhan ekonomi lantaran penularan pandemik Covid-19, selain Keluaran Dalam Negara Kasar (KDNK) pada 2020 yang juga dilihat semakin merundum. Sehubungan dengan itu, dijangkakan permintaan puncak elektrik bagi 2021 sehingga 2023 juga akan menurun.

Bagi tempoh 2021 sehingga 2039, unjuran permintaan puncak telah disemak dan dijangkakan menurun berbanding unjuran pada DFC 2019. Pertumbuhan permintaan puncak elektrik pula diunjurkan pada kadar 1.2% bagi Semenanjung dan 2.2% bagi Sabah untuk tempoh 19 tahun ke hadapan.

The Demand Forecasting Committee (DFC) serves as a platform in obtaining input, advice and expertise from the relevant stakeholders on economic growth projection and electricity demand forecast. The approved electricity demand forecasts and other relevant inputs from the DFC will be adopted into both the Peninsula and Sabah Generation Development Plan for JPPPET's approval at the subsequent Ministry level.

The DFC 2020 meeting on 19 May 2020, chaired by the Commission, was attended by representatives from the Ministry, utilities, consumer associations and research institutions. Matters discussed include the methodology performed and assumptions that were used as inputs to develop the electricity demand forecasts for 2020 to 2039. Among the improvements in the DFC 2020 were the additional assumptions of the exported energy by NEM consumers and cogeneration participation in the New Enhanced Dispatch Arrangement (NEDA).

The main challenge faced was the uncertainty of economic growth projections due to the outbreak of the Covid-19 pandemic and the declining Gross Domestic Product (GDP) in 2020. Therefore, peak electricity demand in 2021 to 2023 is expected to decline.

Meanwhile, the peak demand forecasts, for the period of 2021 to 2039, were reviewed and are expected to decline in comparison to the forecast made in DFC 2019. The growth in peak electricity demand for the next 19 years is projected at 1.2% for the Peninsula and 2.2% for Sabah.

02

MENGUTAMAKAN KESELAMATAN DAN PENGUATKUASAAN
PRIORITISING SAFETY AND ENFORCEMENT

PRESTASI KEMALANGAN ELEKTRIK DAN GAS BERPAIP
ELECTRICAL AND PIPED GAS ACCIDENTS PERFORMANCE

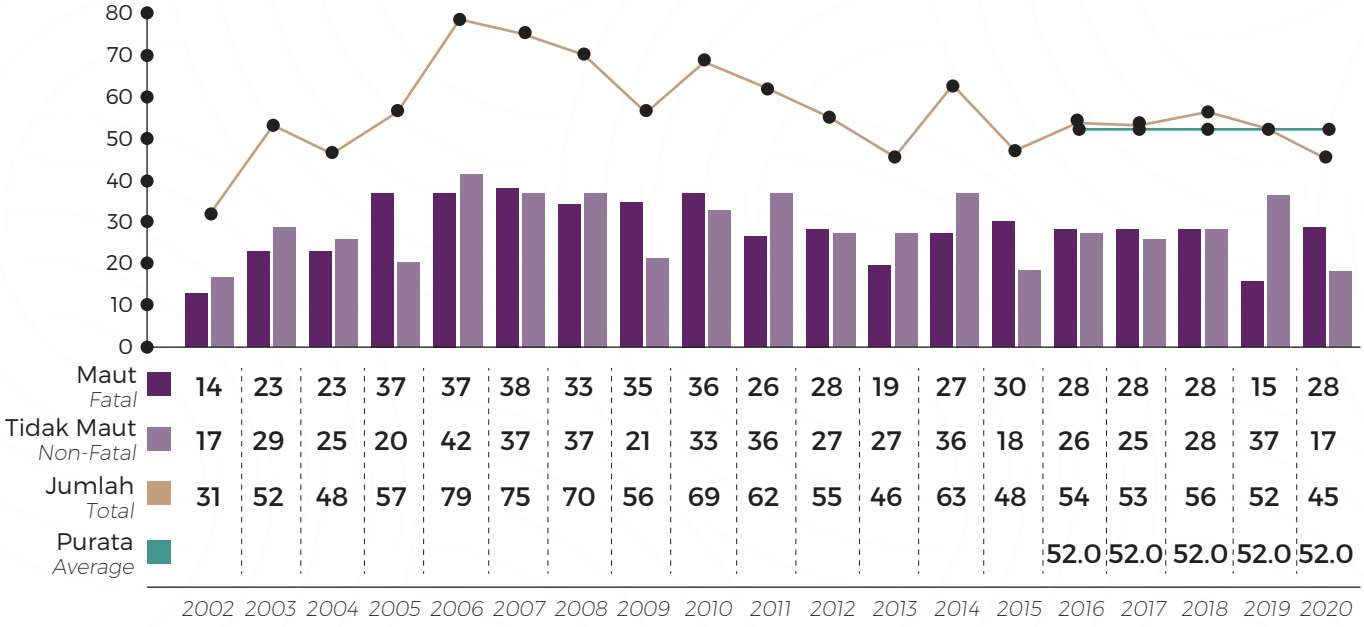
STATISTIK KEMALANGAN ELEKTRIK

Sejak 2002, sebanyak 1,071 kes kemalangan elektrik telah dilaporkan dan disiasat oleh ST. Kes-kes tersebut melibatkan 533 kes maut dan 538 kes tidak maut. Pada 2020, kemalangan elektrik terendah telah dicatatkan bagi lima (5) tahun ke belakang iaitu sebanyak 45 kes (28 maut dan 17 tidak maut) yang menunjukkan pengurangan sebanyak 13.5% berbanding jumlah kes pada tahun lepas. Analisis turut menunjukkan purata kemalangan elektrik yang berlaku bagi tempoh tersebut adalah sebanyak 52 kes setahun.

ELECTRICAL ACCIDENT STATISTICS

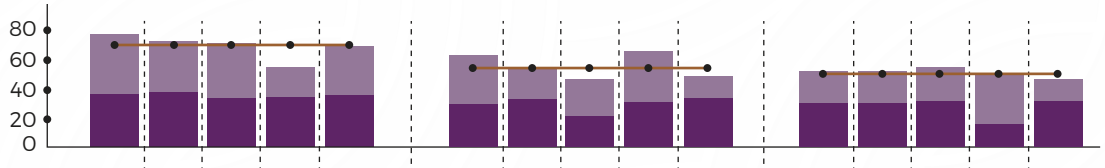
Since 2002, the Commission has investigated a total of 1,071 reported cases of electrical accidents, of which 533 were fatal and 538 were non-fatal. The lowest number of electrical accidents over the past five (5) years was recorded in 2020 with 45 cases (28 fatal and 17 non-fatal), which was a year-on-year decrease of 13.5%. Analysis also showed that the average number of electrical accidents during this period was 52 cases per year.

Bilangan Kemalangan Elektrik, 2002-2020
Number of Electrical Accidents, 2002-2020



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Maut *Fatal*	14	23	23	37	37	38	33	35	36	26	28	19	27	30	28	28	28	15	28
Tidak Maut *Non-Fatal*	17	29	25	20	42	37	37	21	33	36	27	27	36	18	26	25	28	37	17
Jumlah *Total*	31	52	48	57	79	75	70	56	69	62	55	46	63	48	54	53	56	52	45
Purata *Average*															52.0	52.0	52.0	52.0	52.0

Bilangan Kemalangan Elektrik: Perbandingan Tempoh 5-Tahun
Number of Electrical Accidents: Comparative 5-Year Cycle



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Tidak Maut/*Non-Fatal*	42	37	37	21	33	36	27	27	36	18	26	25	28	37	17
Maut/*Fatal*	37	38	33	35	36	26	28	19	27	30	28	28	28	15	28
Jumlah/*Total*	79	75	70	56	69	62	55	46	63	48	54	53	56	52	45
Purata/*Average*	69.8	69.8	69.8	69.8	69.8	54.8	54.8	54.8	54.8	54.8	52	52	52	52	52

Trend penurunan kes kemalangan elektrik direkodkan dalam perbandingan kitaran lima (5) tahun sejak 2006. Bagi tempoh semasa 2016 hingga 2020, jumlah kes menurun sebanyak 5.1% berbanding dengan tempoh lima (5) tahun sebelumnya (2011 hingga 2015), dan sebanyak 25.5% berbanding dengan tempoh lima (5) tahun terawal, iaitu dari 2006 hingga 2010.

The comparative five (5) year cycle showcased a downward trend in electrical accidents since 2006. For the current period (2016 to 2020), the number of cases decreased by 5.1% compared to the previous five (5) year cycle (2011 to 2015), and by 25.5% in comparison with the earliest five (5) year cycle (2006 to 2010).

KADAR KEMALANGAN ELEKTRIK MENGIKUT POPULASI

Populasi penduduk Semenanjung dan Sabah telah menunjukkan pertambahan sebanyak 25.8% bagi tempoh 15 tahun. Namun begitu, jumlah kadar kemalangan elektrik bagi setiap sejuta penduduk pula telah menurun secara konsisten bagi setiap tempoh lima (5) tahun.

Purata kadar kes kemalangan elektrik setiap sejuta penduduk bagi tempoh lima (5) tahun secara keseluruhannya menunjukkan trend positif iaitu penurunan dari 26.7% (tempoh 2006-2010 kepada 2011-2015) dan seterusnya kepada 12.3% (tempoh 2011-2015 kepada 2016-2020).

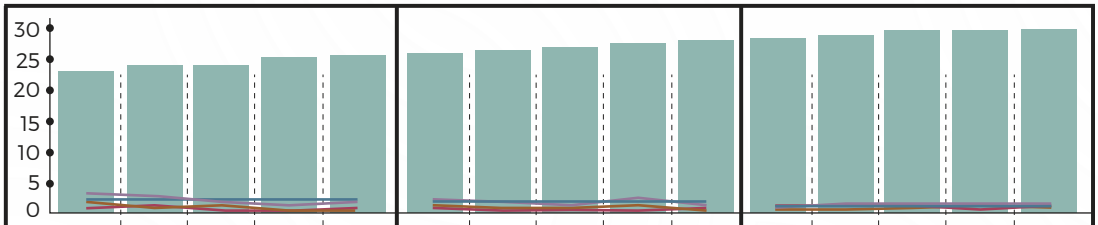
ELECTRICAL ACCIDENT RATE BY POPULATION

The Peninsula and Sabah recorded a population growth rate of 25.8% over the past 15 years. However, the electrical accident rate per million population has decreased consistently every five (5) years.

Overall, the average rate of electrical accidents per million population during a period of five (5) years showed a positive trend, with the number of electrical accidents per million population declining by 26.7% (from 2006-2010 to 2011-2015) and subsequently by 12.3% (from 2011-2015 to 2016-2020).

Kadar Kemalangan per Populasi, Perbandingan Tempoh 5-Tahun

Accident Rate per Population: Comparative 5-Year Cycle



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Populasi Penduduk (juta)/ *Population (million)*	23.76	24.23	24.66	25.11	25.64	26.12	26.57	27.10	27.56	28.02	28.45	28.85	29.61	29.79	29.88
Tidak maut (per sejuta penduduk)/ *Non-Fatal (per million population)*	1.77	1.53	1.50	0.84	1.29	1.38	1.02	1.00	1.31	0.64	0.91	0.87	0.95	1.24	0.57
Maut (per sejuta penduduk/ *Fatal (per million population)*	1.56	1.57	1.34	1.39	1.40	1.00	1.05	0.70	0.98	1.07	0.98	0.97	0.95	0.50	0.94
Kadar Kemalangan (per sejuta penduduk) *Accident Rate (per million population),*	3.33	3.10	2.84	2.23	2.69	2.37	2.07	1.70	2.29	1.71	1.90	1.84	1.89	1.75	1.51
Purata Kadar Kemalangan/per sejuta penduduk) *Average Accident Rate (per million population)*	2.77	2.77	2.77	2.77	2.77	2.03	2.03	2.03	2.03	2.03	1.78	1.78	1.78	1.78	1.78

LOKASI KEMALANGAN ELEKTRIK

Pada 2020, sebanyak sembilan (9) kes kemalangan telah berlaku di kawasan kediaman (2019: dua kes). Perintah Kawalan Pergerakan (PKP), Perintah Kawalan Pergerakan Bersyarat (PKPB) dan Perintah Kawalan Pergerakan Pemulihan (PKPP) yang dilaksanakan dipercayai antara sebab kes kemalangan di lokasi ini menjadi lokasi utama memandangkan orang ramai lebih banyak menghabiskan masa di rumah.

Kedua-dua lokasi talian atas voltan rendah dan premis swasta (komersial) masing-masing menyumbang sebanyak enam (6) kes kemalangan iaitu kedua tertinggi pada 2020 berbanding tujuh (7) dan enam (6) kes masing-masing pada 2019.

Manakala lokasi talian atas voltan tinggi berada di kedudukan ketiga iaitu sebanyak lima (5) kes sekaligus merekodkan penurunan yang paling ketara iaitu sebanyak 58.3% berbanding 12 kes pada tahun sebelumnya.

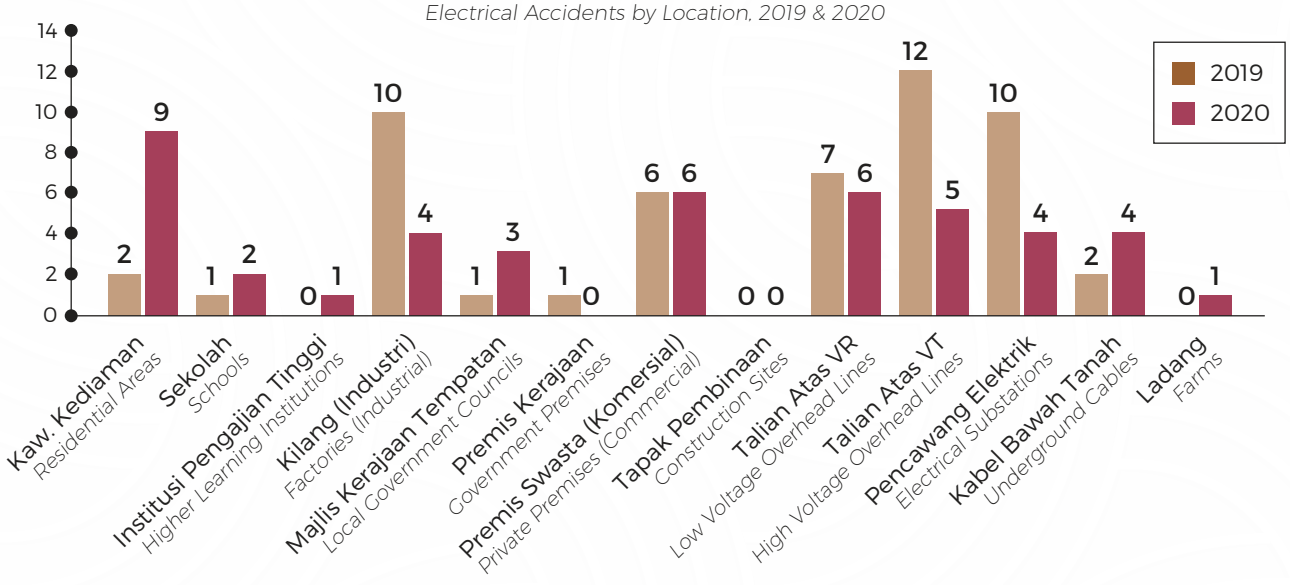
ELECTRICAL ACCIDENT LOCATIONS

In 2020, a total of nine (9) electrical accidents occurred in residential areas (2019: two cases). This may be due to the increase in the average time consumers spent at home, particularly during the Movement Control Order (MCO), Conditional Movement Control Order (CMCO) and Recovery Movement Control Order (RMCO).

Low voltage overhead lines and private (commercial) premises recorded the second highest number of cases with six (6) cases each in 2020 compared to seven (7) and six (6) cases respectively in 2019.

This is followed by high voltage overhead lines which recorded a 58.3% decrease in the number of electrical accidents from 12 cases in the previous year to five (5) cases in 2020.

Kemalangan Elektrik mengikut Lokasi, 2019 & 2020
Electrical Accidents by Location, 2019 & 2020



Kemalangan Elektrik mengikut Lokasi, 2002-2020
Electrical Accidents by Location, 2002-2020

Tahun *Year*	Kaw. Kediaman *Residential Areas*	Sekolah *Schools*	Institusi Pengajian Tinggi *Higher Learning Institutions*	Kilang (Industri) *Factories (Industrial)*	Majlis Kerajaan Tempatan *Local Government Councils*	Premis Kerajaan *Government Premises*	Premis Swasta (Komersial) *Private Premises (Commercial)*	Tapak Pembinaan *Construction Sites*	Talian Atas VR *Low Voltage Overhead Lines*	Talian Atas VT *High Voltage Overhead Lines*	Pencawang Elektrik *Electrical Substations*	Kabel Bawah Tanah *Underground Cables*	Ladang *Farms*	Jumlah *Total*
2002	5	1	0	4	0	0	3	0	9	2	4	2	1	31
2003	10	0	0	8	3	2	2	0	10	9	7	1	0	52

Tahun *Year*	Kaw. Kediaman *Residential Areas*	Sekolah *Schools*	Institusi Pengajian Tinggi *Higher Learning Institutions*	Kilang (Industri) *Factories (Industrial)*	Majlis Kerajaan Tempatan *Local Government Councils*	Premis Kerajaan *Government Premises*	Premis Swasta (Komersial) *Private Premises (Commercial)*	Tapak Pembinaan *Construction Sites*	Talian Atas VR *Low Voltage Overhead Lines*	Talian Atas VT *High Voltage Overhead Lines*	Pencawang Elektrik *Electrical Substations*	Kabel Bawah Tanah *Underground Cables*	Ladang *Farms*	**Jumlah** *Total*
2004	**4**	**0**	**1**	**6**	**2**	**1**	**3**	**0**	**11**	**10**	**9**	**0**	**1**	**48**
2005	**11**	**1**	**0**	**2**	**0**	**4**	**6**	**1**	**17**	**4**	**11**	**0**	**0**	**57**
2006	**9**	**0**	**0**	**5**	**3**	**4**	**4**	**1**	**15**	**12**	**21**	**3**	**2**	**79**
2007	**14**	**2**	**1**	**10**	**0**	**2**	**5**	**2**	**16**	**9**	**14**	**0**	**0**	**75**
2008	**11**	**1**	**1**	**5**	**1**	**2**	**7**	**0**	**10**	**8**	**22**	**2**	**0**	**70**
2009	**9**	**1**	**0**	**7**	**1**	**1**	**4**	**1**	**12**	**5**	**12**	**1**	**2**	**56**
2010	**8**	**0**	**0**	**8**	**3**	**0**	**10**	**2**	**10**	**6**	**17**	**3**	**2**	**69**
2011	**15**	**0**	**2**	**7**	**2**	**0**	**4**	**1**	**11**	**4**	**13**	**2**	**1**	**62**
2012	**6**	**0**	**0**	**5**	**2**	**2**	**4**	**0**	**13**	**13**	**7**	**2**	**1**	**55**
2013	**8**	**0**	**0**	**5**	**0**	**3**	**6**	**1**	**6**	**5**	**9**	**3**	**0**	**46**
2014	**11**	**0**	**0**	**7**	**1**	**1**	**9**	**0**	**11**	**5**	**14**	**4**	**0**	**63**
2015	**10**	**0**	**0**	**5**	**1**	**1**	**1**	**0**	**4**	**7**	**13**	**1**	**5**	**48**
2016	**5**	**0**	**0**	**11**	**2**	**2**	**6**	**0**	**9**	**6**	**11**	**0**	**2**	**54**
2017	**7**	**0**	**1**	**3**	**3**	**0**	**7**	**0**	**11**	**8**	**8**	**3**	**2**	**53**
2018	**15**	**0**	**0**	**8**	**2**	**0**	**6**	**1**	**6**	**8**	**7**	**2**	**1**	**56**
2019	**2**	**1**	**0**	**10**	**1**	**1**	**6**	**0**	**7**	**12**	**10**	**2**	**0**	**52**
2020	**9**	**2**	**1**	**4**	**3**	**0**	**6**	**0**	**6**	**5**	**4**	**4**	**1**	**45**
Jumlah *Total*	**169**	**9**	**7**	**120**	**30**	**26**	**99**	**10**	**194**	**138**	**213**	**35**	**21**	**1,071**

Pencawang elektrik, talian atas voltan rendah dan talian atas voltan tinggi merupakan tiga (3) lokasi tertinggi berlakunya kemalangan elektrik bagi tempoh lima (5) tahun yang lalu.

Secara kumulatif, bagi tempoh lima (5) tahun, pencawang elektrik menjadi lokasi utama bagi kemalangan elektrik. Namun, daripada segi jumlah, penurunan dicatatkan iaitu daripada 86 kes (tempoh 2006 hingga 2010) kepada 56 kes (tempoh 2011 hingga 2015) dan seterusnya 40 kes bagi lima (5) tahun ke belakang ini.

Terdapat peningkatan kes berlaku yang melibatkan talian atas voltan tinggi bagi tempoh 2016 hingga 2020 iaitu sebanyak 14.7% berbanding tempoh 2011 hingga 2015. Kes kemalangan elektrik di kawasan kediaman, secara keseluruhannya, menunjukkan penurunan sebanyak 25% bagi tempoh lima (5) tahun lepas berbanding tempoh sepuluh (10) tahun sebelumnya.

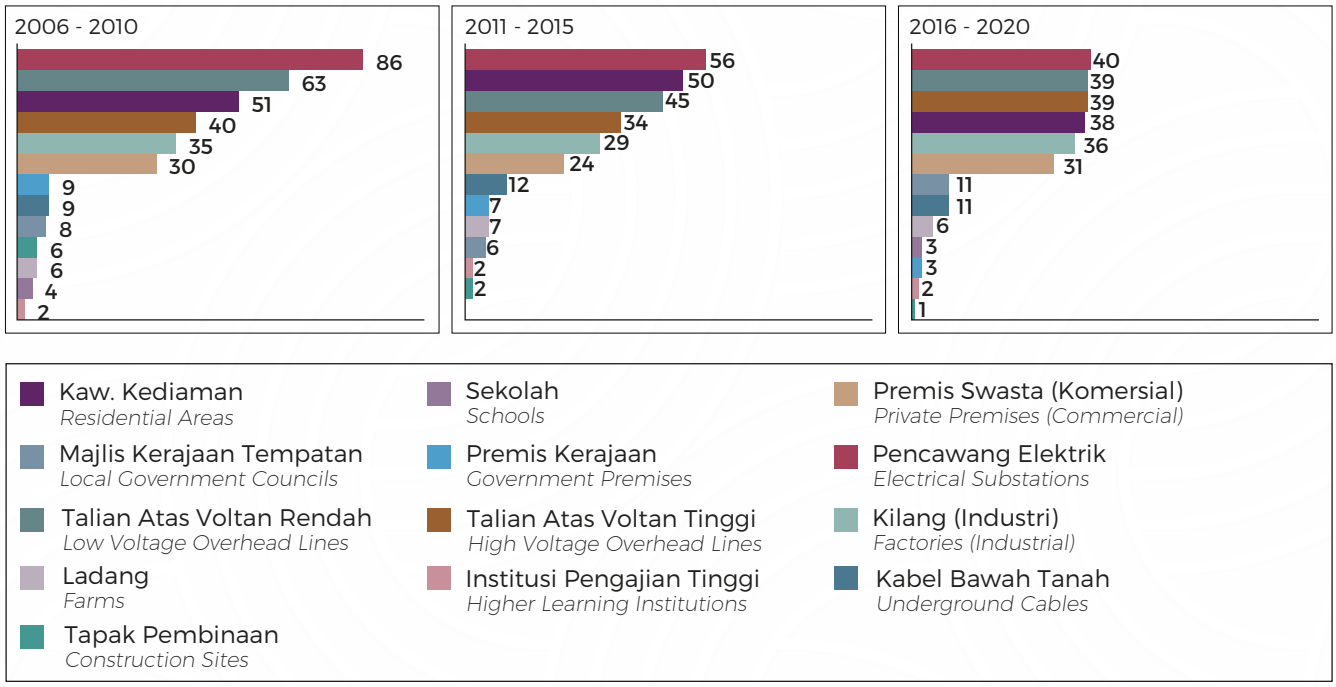
Electrical substations, low voltage overhead lines and high voltage overhead lines were the three (3) locations with the highest number of electrical accidents over the past five (5) years.

Cumulatively, over a period of five (5) years, the majority of electrical accidents occurred at electrical substations. However, in terms of numbers, cases have gone down from 86 (2006 to 2010) to 56 (2011 to 2015) and subsequently to 40 over the last five (5) years.

Cases involving high voltage overhead lines increased by 14.7% from 2016 to 2020 compared to the period from 2011 to 2015. Overall, the number of electrical accidents in residential areas decreased by 25% over the last five (5) years compared to ten (10) years prior.

Kemalangan Elektrik mengikut Lokasi, Perbandingan Tempoh 5-Tahun

Electrical Accidents by Location: Comparative 5-Year Cycle



PUNCA KEMALANGAN ELEKTRIK

Pada 2020, ST merekodkan sebanyak 18 kes akibat pemasangan dan senggaraan yang tidak sempurna (2019: 16 kes), aktiviti kerja orang awam berhampiran dengan pepasangan elektrik sebanyak 11 kes (2019: 9 kes) dan sebanyak tujuh (7) kes ketidakpatuhan pada prosedur kerja selamat (2019: 25 kes).

Inisiatif-inisiatif berterusan yang diambil oleh ST dalam memastikan amalan kerja selamat di kalangan pihak utiliti dan kontraktor antara faktor pengurangan kes akibat ketidakpatuhan pada prosedur kerja selamat iaitu sebanyak 72% berbanding 2019.

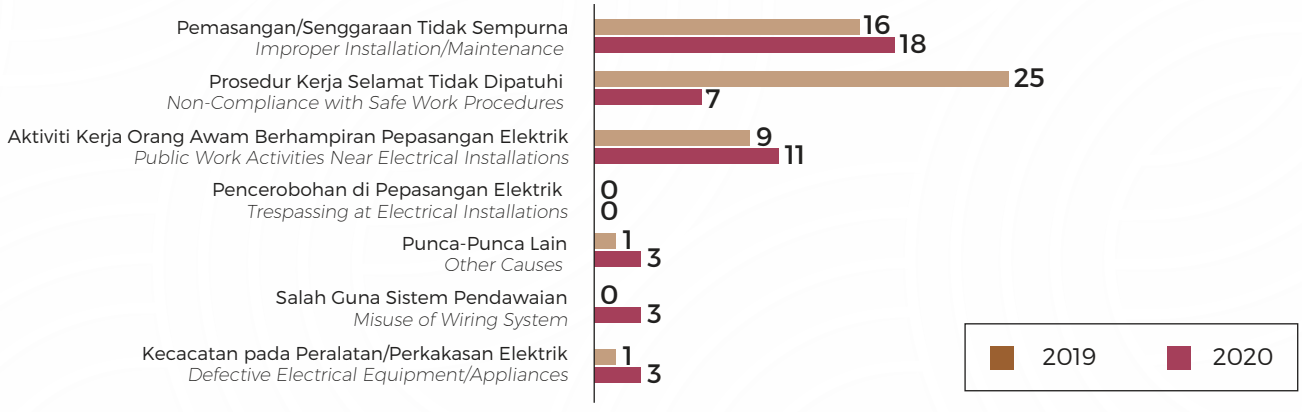
CAUSES OF ELECTRICAL ACCIDENTS

In 2020, the Commission recorded a total of 18 cases caused by improper installation and maintenance (2019: 16 cases), 11 cases caused by public work activities near electrical installations (2019: 9 cases) and seven (7) cases caused by non-compliance with safe work procedures (2019: 25 cases).

The ongoing initiatives by the Commission in ensuring safe work practices among utilities and contractors contributed to the 72% reduction in the number of cases caused by non-compliance with safe work procedures compared to 2019.

Kemalangan Elektrik mengikut Punca, 2019 & 2020

Causes of Electrical Accidents, 2019 & 2020



Kemalangan Elektrik mengikut Punca, 2002-2020

Causes of Electrical Accidents, 2002-2020

Tahun *Year*	Pemasangan/ Senggaraan Tidak Sempurna *Improper Installation/ Maintenance*	Prosedur Kerja Selamat Tidak Dipatuhi *Non-Compliance with Safe Work Procedures*	Aktiviti Kerja Orang Awam Berhampiran Pepasangan Elektrik *Public Work Activities Near Electrical Installations*	Pencerobohan di Pepasangan Elektrik *Trespassing at Electrical Installations*	Punca-Punca Lain *Other Causes*	Salah Guna Sistem Pendawaian *Misuse of Wiring System*	Kecacatan pada Peralatan/ Perkakasan Elektrik *Defective Electrical Equipment/Appliances*
2002	**11**	**12**	**4**	**1**	**1**	**2**	**0**
2003	**18**	**18**	**9**	**3**	**3**	**1**	**0**
2004	**15**	**15**	**9**	**3**	**4**	**1**	**1**
2005	**24**	**22**	**2**	**3**	**4**	**1**	**1**
2006	**26**	**22**	**7**	**10**	**8**	**3**	**3**
2007	**34**	**23**	**5**	**7**	**4**	**1**	**1**
2008	**25**	**21**	**6**	**11**	**5**	**1**	**1**
2009	**27**	**13**	**6**	**6**	**2**	**2**	**0**
2010	**18**	**21**	**9**	**12**	**2**	**4**	**3**
2011	**24**	**15**	**5**	**6**	**6**	**2**	**4**
2012	**22**	**15**	**5**	**5**	**2**	**2**	**4**
2013	**12**	**16**	**7**	**9**	**0**	**2**	**0**
2014	**20**	**21**	**11**	**7**	**0**	**1**	**3**
2015	**12**	**12**	**8**	**5**	**5**	**3**	**3**
2016	**19**	**17**	**7**	**3**	**3**	**1**	**4**
2017	**18**	**16**	**10**	**1**	**2**	**3**	**3**
2018	**21**	**17**	**10**	**0**	**5**	**1**	**2**
2019	**16**	**25**	**9**	**0**	**1**	**0**	**1**
2020	**18**	**7**	**11**	**0**	**3**	**3**	**3**
Jumlah *Total*	**380**	**328**	**140**	**92**	**60**	**34**	**37**

Sepanjang tempoh-tempoh lima (5) tahun sebelum ini iaitu 2006 hingga 2010, 2011 hingga 2015 dan 2016 hingga 2020, punca utama kemalangan elektrik adalah pemasangan atau senggaraan yang tidak sempurna diikuti dengan punca kedua iaitu kegagalan untuk mematuhi prosedur kerja selamat.

Kegagalan untuk mematuhi prosedur kerja selamat termasuklah penggunaan Permit Menjalankan Kerja (PMK) yang salah dan tidak berkesan. Antara usaha ST bagi mitigasi mengurangkan kes berkaitan pemasangan atau senggaraan yang tidak sempurna adalah menjalankan lawatan pemeriksaan penyenggaraan pepasangan utiliti, audit pepasangan utiliti dan sesi perbincangan penggunaan PMK dengan berkesan di Sabah sebelum pelaksanaan PKP. Inisiatif mitigasi mengurangkan kes kemalangan elektrik yang ST laksanakan bersama sektor tenaga adalah seperti Program *Refresher Course* berkenaan Penggunaan PMK baharu dengan betul kepada warga kerja pihak utiliti secara webinar dalam talian.

Punca ketiga adalah aktiviti kerja orang awam berhampiran pepasangan elektrik di mana bagi tempoh lima (5) tahun ke belakang ini menunjukkan peningkatan sebanyak 30.6% berbanding tempoh sepuluh (10) tahun terdahulu dan 42.4% berbanding tempoh 15 tahun sebelumnya.

Aktiviti kerja orang awam ini termasuklah aktiviti mengait atau menyawit menggunakan galah aluminium berhampiran talian atas elektrik. Justeru, ST mengambil pendekatan mengadakan sesi-sesi libat urus bersama sektor perladangan iaitu *Malaysian Palm Oil Board* (MPOB), *Malaysian Palm Oil Association* (MPOA), *Malaysian Estate Owner Association* (MEOA), *National Association of Smallholders Malaysia* (NASH) dan *IOI Group* bagi mitigasi kes melibatkan sektor ini.

Over the last 15 years from 2006 to 2010, 2011 to 2015 and 2016 to 2020, the primary causes of electrical accidents were improper installation or maintenance followed by failure to comply with safe work procedures.

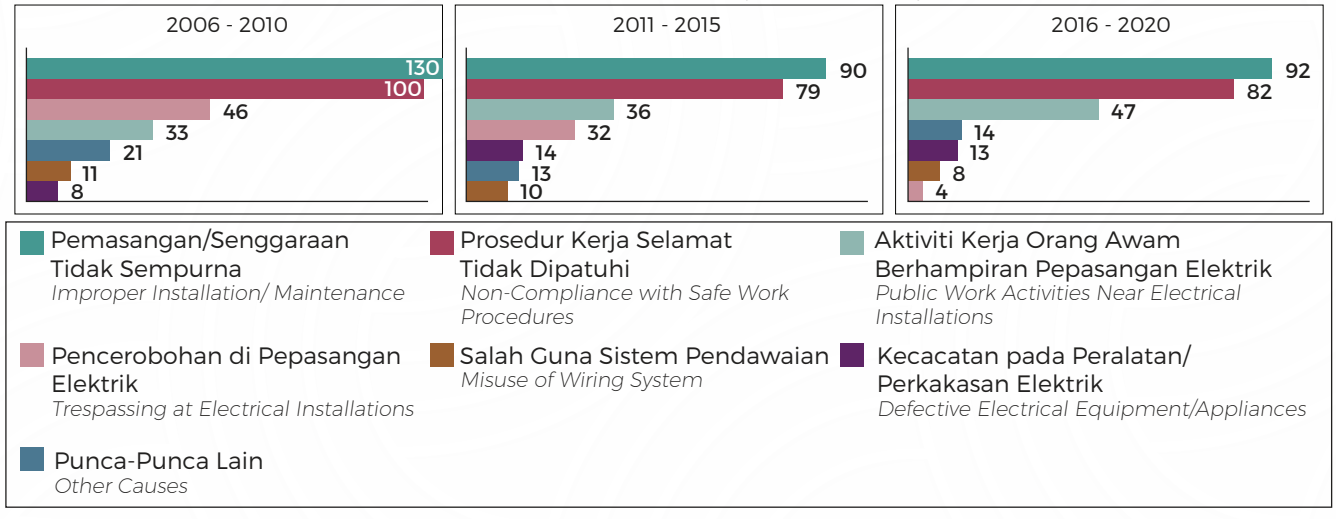
Failure to comply with safe work procedures includes the misuse and ineffective use of Permit to Work (PTW). To reduce cases related to improper installation or maintenance, the Commission conducted utility installation maintenance inspection visits, utility installation audits and discussion sessions on the effective use of PTW in Sabah prior to the MCO. The Refresher Course Programme on the Proper Use of the New PTW for utility employees, held via an online webinar, was another initiative the Commission undertook to reduce the number of electrical accidents.

Electrical accidents due to public work activities near electrical installations increased by 30.6% over the last five (5) years compared to the previous ten (10) years and by 42.4% compared to the previous 15 years.

These public work activities include palm oil extraction activities using aluminium poles near electrical overhead lines. The Commission initiated engagement sessions with the plantations sector, namely the Malaysian Palm Oil Board (MPOB), Malaysian Palm Oil Association (MPOA), Malaysian Estate Owner Association (MEOA), National Association of Smallholders Malaysia (NASH) and IOI Group to address electrical accident cases involving the sector.

Kemalangan Elektrik mengikut Punca, Perbandingan Tempoh 5-Tahun

Causes of Electrical Accidents: Comparative 5-Year Cycle



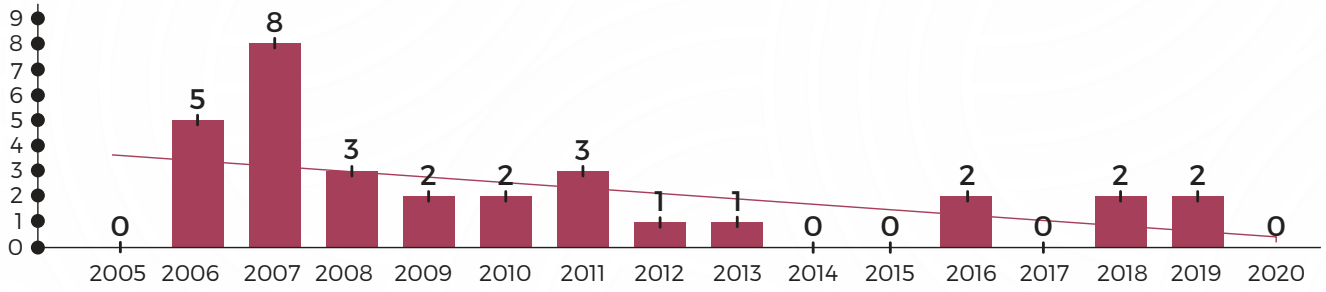
STATISTIK KEMALANGAN GAS BERPAIP

Pada 2020, tiada kemalangan gas direkodkan. ST berharap prestasi ini dapat dikekalkan di samping terus berusaha untuk melakukan penambahbaikan dari semasa ke semasa dengan menjalankan beberapa sesi libat urus bersama agensi-agensi dan Pihak Berkuasa Tempatan (PBT) lain yang berkaitan. Hasil, usaha sama tersebut, jumlah kemalangan yang direkodkan dari 2005 sehingga 2020 telah menunjukan trend penurunan.

PIPED GAS ACCIDENT STATISTICS

There were no recorded incidents of gas accidents in 2020. To ensure that this performance can be sustained, the Commission continuously strives to make necessary improvements from time to time by conducting engagement sessions with relevant agencies and Local Authorities. As a result, the number of accidents recorded has been on a downward trend from 2005 to 2020.

Bilangan Kemalangan Gas Berpaip, 2005-2020
Number of Piped Gas Accidents, 2005-2020



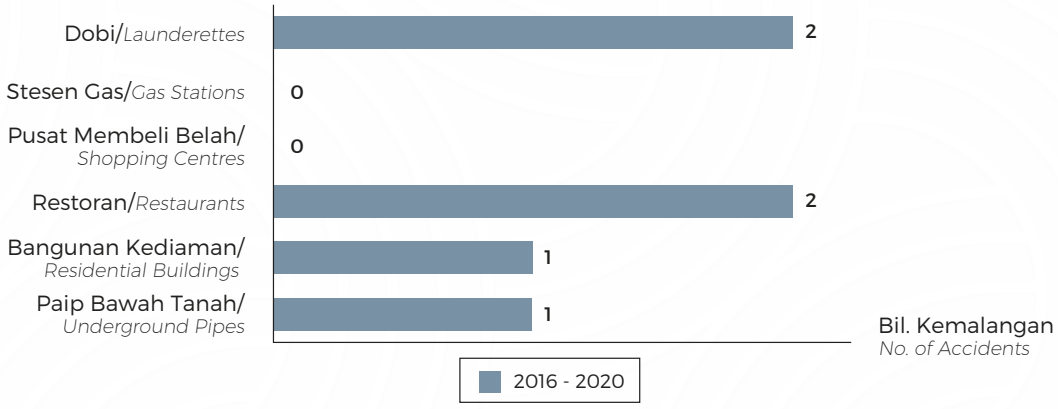
LOKASI KEMALANGAN GAS BERPAIP

Bagi kemalangan yang direkodkan berdasarkan lokasi untuk 2016 sehingga 2020, kemalangan di restoran dan pusat dobi mencatatkan jumlah kes tertinggi.

PIPED GAS ACCIDENT LOCATIONS

In terms of location, restaurants and launderettes recorded the highest number of gas accidents from 2016 to 2020.

Kemalangan Gas Berpaip mengikut Lokasi, 2016-2020
Piped Gas Accidents by Location, 2016-2020



PUNCA KEMALANGAN GAS BERPAIP

Pada tempoh 2016 hingga 2020, dua (2) punca utama telah direkodkan iaitu prosedur kerja tidak sempurna dan kecuaian kontraktor gas.

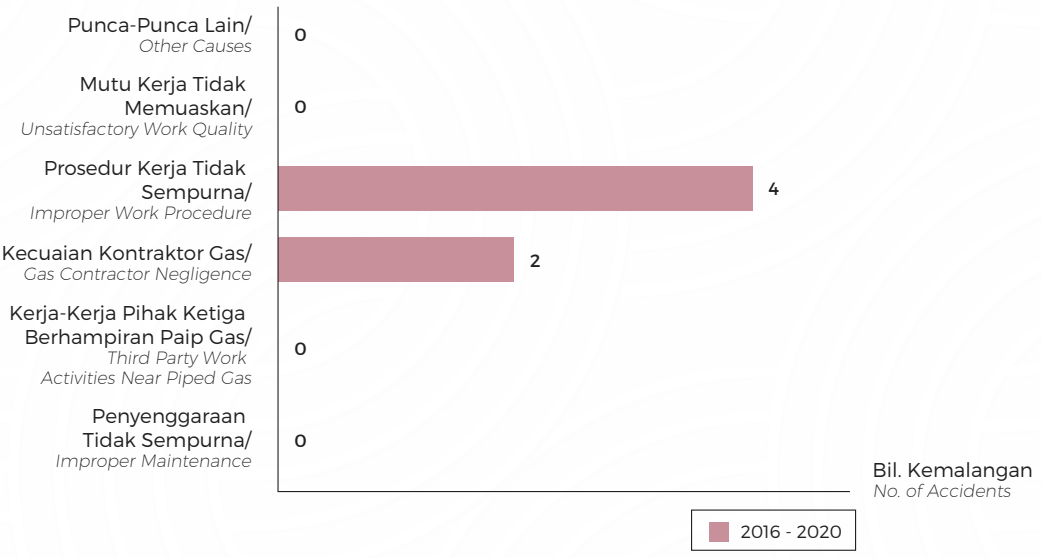
Walau bagaimanapun, tiada kemalangan gas telah berlaku pada 2020.

CAUSES OF PIPED GAS ACCIDENTS

From 2016 to 2020, the two (2) primary causes of gas accidents were improper work procedures and negligence of gas contractors.

However, no gas accidents were recorded in 2020.

Kemalangan Gas Berpaip mengikut Punca, 2016-2020
Causes of Piped Gas Accidents, 2016-2020



INISIATIF-INISIATIF MEMPERTINGKATKAN TAHAP KESELAMATAN ELEKTRIK DAN GAS BERPAIP
INITIATIVES TO IMPROVE ELECTRICAL AND PIPED GAS SAFETY

Selaras dengan peranan ST untuk mempertingkatkan keselamatan elektrik dan gas berpaip, ST telah menjalankan sesi libat urus bersama PBT, agensi-agensi Kerajaan, persatuan dobi, *franchisor* dan *franchisee* yang berkaitan dan golongan sasar terutamanya perusahaan dobi.

Antara program-program yang telah dijalankan adalah:

- Mesyuarat dan dialog bersama Persatuan Pengusaha Dobi Melayu (MULA).
- Seminar Keselamatan Sistem Gas Berpaip di Premis Dobi bersama keseluruhan PBT Sabah, Jabatan Bomba dan Penyelamat Malaysia (JBPM), kontraktor gas dan persatuan berserta pengusaha dobi di Kota Kinabalu.
- Seminar Keselamatan Gas Berpaip di premis dobi, kepatuhan terhadap Akta Bekalan Gas dan Standard Piawaian MS bersama keseluruhan PBT Pahang dan JBPM.
- Seminar Keselamatan Sistem Gas Berpaip bersama warga pendidik negeri Pahang.

ST juga telah menerbitkan garis panduan lengkap khusus untuk sistem gas berpaip di premis dobi untuk rujukan semua pengusaha dobi, orang kompeten dan kontraktor gas.

Beberapa mesyuarat, program, lawatan pemeriksaan, audit keselamatan serta kajian sebagai inisiatif-inisiatif untuk mempertingkatkan tahap keselamatan elektrik dan gas berpaip juga telah dijalankan.

In line with its efforts to enhance electrical and piped gas safety, the Commission conducted engagement sessions with Local Authorities, Government agencies, launderette associations, and relevant franchisors and franchisees, as well as target groups, particularly launderette establishments.

Among the programmes carried out were:

- *Meeting and dialogue with the Malay Unified Laundry Association (MULA).*
- *Piped Gas System Safety Seminar at Launderettes with the Sabah Local Authorities, Fire and Rescue Department of Malaysia (JBPM), gas contractors and associations as well as launderette operators in Kota Kinabalu.*
- *Piped Gas Safety Seminar at launderettes, compliance with the Gas Supply Act and MS Standards seminar with the Pahang Local Authorities and JBPM.*
- *Piped Gas System Safety Seminar with Pahang educators.*

The Commission also published comprehensive guidelines, specifically for piped gas systems at launderettes, for the reference of all launderette operators, competent persons and gas contractors.

Several meetings, programmes, inspection visits, safety audits as well as studies were also conducted as part of the initiative to improve the level of electrical and piped gas safety.

MEMPERTINGKATKAN PEMATUHAN TERHADAP PERATURAN
IMPROVING COMPLIANCE WITH REGULATIONS

PELESENAN ELEKTRIK

Pengeluaran Lesen Pepasangan Awam Dan Pepasangan Persendirian (Bagi Kapasiti 5 MW dan ke Atas)

Pada keseluruhannya, terdapat 11 kategori lesen yang telah dikeluarkan oleh ST mengikut Seksyen 9, Akta Bekalan Elektrik 1990. Sehingga akhir 2020, ST telah mengeluarkan sejumlah 1,451 lesen pepasangan awam dan pepasangan persendirian (bagi kapasiti 5 MW dan ke atas).

Daripada jumlah ini, sebanyak 93.5% (1,357 lesen) adalah untuk pepasangan awam manakala baki sebanyak 6.5% (94 lesen) adalah untuk pepasangan persendirian (bagi kapasiti 5 MW dan ke atas).

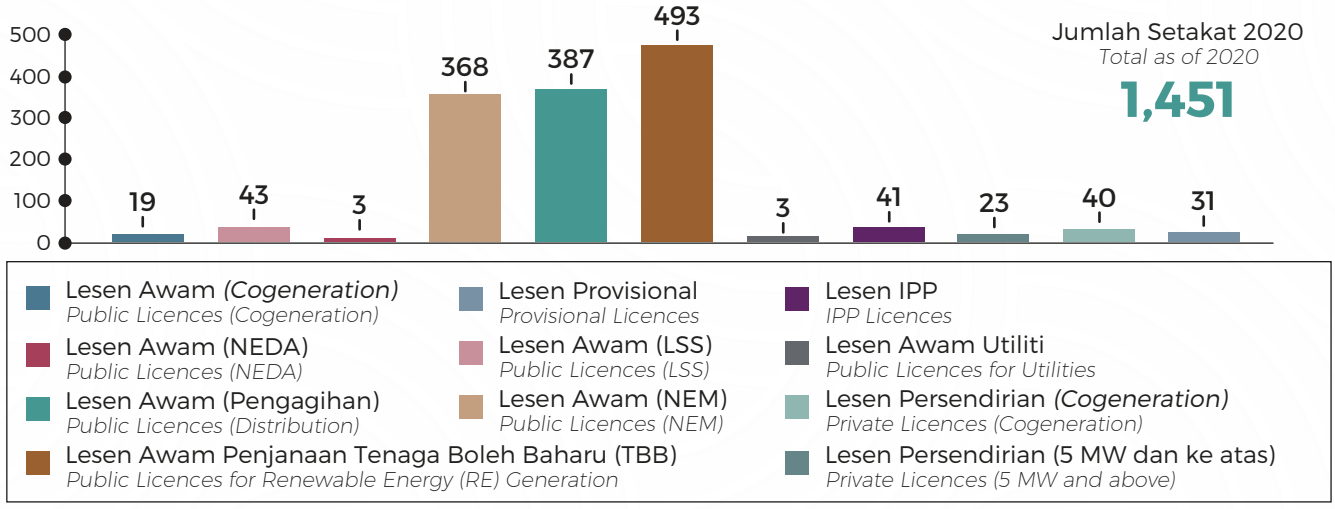
ELECTRICAL LICENSING

Issuance of Licences for Public Installations and Private Installations (for the Capacity of 5 MW and Above)

In total, 11 categories of licences were issued by the Commission in accordance with Section 9, Electricity Supply Act 1990. As of end 2020, the Commission had issued a total of 1,451 licences for public installations and private installations (for the capacity of 5 MW and above).

Approximately 93.5% or 1,357 of the total licences issued were for public installations while the remaining 6.5% or 94 licences were for private installations (for the capacity of 5 MW and above).

Jumlah Pengeluaran Lesen mengikut Kategori, 2020
Total Licences Issued by Category, 2020



Pada 2020, jumlah pengeluaran lesen pepasangan awam dan pepasangan persendirian (bagi kapasiti 5 MW dan ke atas) mencatatkan peningkatan sebanyak 38% kepada 306 lesen (2019: 222 lesen).

Pendaftaran lesen awam Pemeteran Tenaga Bersih (NEM) meningkat sebanyak 59% kepada 208 lesen (2019: 131 lesen) sementara pendaftaran lesen awam *Large Scale Solar* (LSS) menurun sebanyak 20% kepada 12 lesen (2019: 15 lesen).

Pendaftaran lesen Tenaga Boleh Baharu (TBB) juga menurun sebanyak 21.4% kepada 11 lesen (2019: 14 lesen).

In 2020, the total number of licences issued for public installations and private installations (for the capacity of 5 MW and above) increased by 38% to 306 licences (2019: 222 licences).

Net Energy Metering (NEM) public licence registrations increased by 59% to 208 licences (2019: 131 licences) whereas Large Scale Solar (LSS) public licence registrations decreased by 20% to 12 licences (2019: 15 licences).

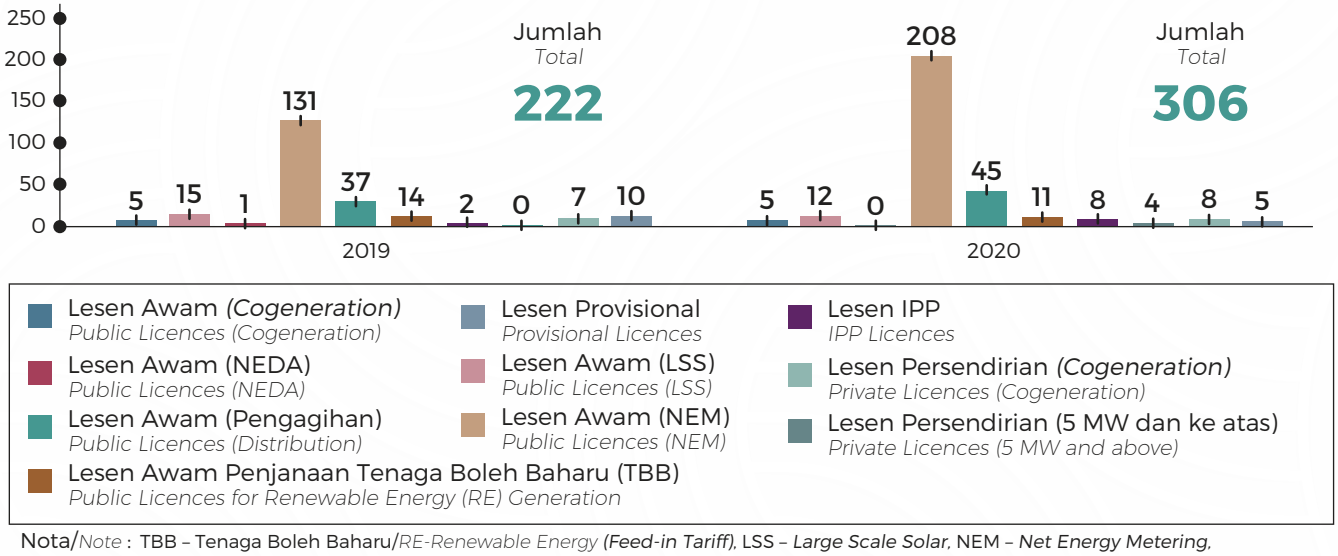
Registration of Renewable Energy (RE) licences also decreased by 21.4% to 11 licences (2019: 14 licences).

Terdapat peningkatan sebanyak 300% dalam lesen Penjana Bebas (IPP) kepada lapan (8) lesen (2019: 2 lesen), manakala bilangan lesen pengagihan telah meningkat sebanyak 22% kepada 45 lesen (2019: 37 lesen), berikutan terdapat lesen awam pengagihan yang akan tamat tempoh lesen sepuluh (10) tahun dalam 2020 yang telah membuat pelesenan semula.

Moreover, Independent Power Producer (IPP) licences issued increased by 300% to eight (8) licences (2019: 2 licences) while the number of distribution licences increased by 22% to 45 licences (2019: 37 licences) due to the renewal of public distribution licences which had expired after ten (10) years.

Pengeluaran Lesen Pepasangan Awam dan Pepasangan Persendirian (bagi Kapasiti 5 MW dan ke Atas), 2019 & 2020

Issuance of Licences for Public Installations and Private Installations (for the Capacity of 5 MW and Above), 2019 & 2020



Nota/*Note* : TBB – Tenaga Boleh Baharu/*RE-Renewable Energy* (*Feed-in Tariff*), LSS – *Large Scale Solar*, NEM – *Net Energy Metering*, NEDA – *New Enhanced Dispatch Arrangement*

PELESENAN GAS BERPAIP

Lesen di bawah Akta Bekalan Gas 1993

Sehingga 31 Disember 2020, sebanyak 38 lesen berkaitan Akses Pihak Ketiga (TPA) telah dikeluarkan oleh ST.

PIPED GAS LICENSING

Licence under the Gas Supply Act 1993

As of 31 December 2020, a total of 38 Third Party Access (TPA) licences were issued by the Commission.

Jumlah Lesen berkaitan Akses Pihak Ketiga sehingga Disember 2020

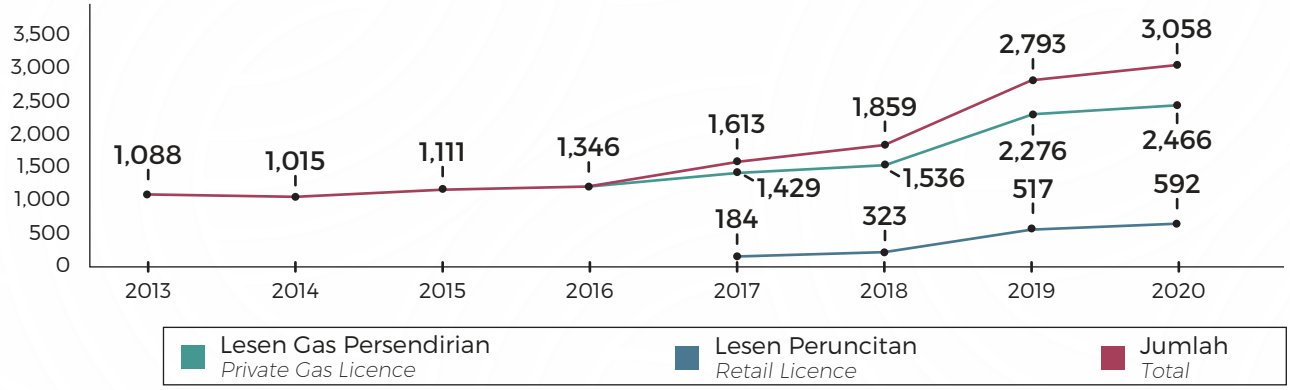
Total Licences Related to the Third Party Access as of December 2020

Kategori Lesen *Licence Category*	**Jumlah** *Total*
Lesen Pengimportan ke Terminal Penggasan Semula *Importation into Regasification Terminal Licence*	**16**
Lesen Penggasan Semula *Regasification Licence*	**2**
Lesen Pengangkutan *Transportation Licence*	**4**
Lesen Pengagihan *Distribution Licence*	**3**
Lesen Pengiriman *Shipping Licence*	**13**

Pada 2020, ST juga telah mengeluarkan sejumlah 3,058 lesen gas persendirian dan lesen peruncitan di bawah Seksyen 11, Akta Bekalan Gas 1993. Jumlah tersebut merupakan tambahan sebanyak 265 lesen berbanding tahun sebelumnya, lanjutan peningkatan kesedaran pengguna serta orang awam tentang keperluan pelesenan gas bagi memastikan keselamatan bersama.

In 2020, the Commission also issued 3,058 private gas and retail licences under Section 11, Gas Supply Act 1993. This was an increase of 265 compared to the previous year and was due to enhanced consumer and public awareness on gas licensing requirements to ensure the safety of all.

Jumlah Lesen Gas Persendirian dan Lesen Peruncitan, 2013 - 2020
Total Private Gas Licences and Retail Licences, 2013 – 2020



MENINGKATKAN BILANGAN ORANG KOMPETEN ELEKTRIK DAN GAS
INCREASING THE NUMBER OF ELECTRICAL AND GAS COMPETENT PERSONS

PERAKUAN KEKOMPETENAN ELEKTRIK

Pengeluaran Perakuan Kekompetenan Elektrik

Pada 2020, sebanyak 4,825 Perakuan Kekompetenan telah dikeluarkan. Ini merupakan penurunan sebanyak 18.98% berbanding dengan jumlah pada 2019.

Daripada jumlah tersebut, 91.18% atau 4,399 perakuan telah dikeluarkan melalui institusi bertauliah manakala 8.82% atau 426 perakuan dikeluarkan melalui peperiksaan kendalian ST.

Sehingga 2020, jumlah perakuan yang telah dikeluarkan oleh ST adalah sebanyak 146,784 perakuan.

Secara amnya, terdapat enam (6) kategori Perakuan Kekompetenan yang dikeluarkan, iaitu:

- Jurutera Perkhidmatan Elektrik (JPE)
- Jurutera Elektrik Kompeten (JEK)
- Penyelia Elektrik (PE)
- Penjaga Jentera (PJ)
- Pendawai / Endorsan Pengujian (PW)
- Pencantum Kabel (PK)

ELECTRICAL CERTIFICATES OF COMPETENCY

Issuance of Electrical Certificates of Competency

In 2020, a total of 4,825 Certificates of Competency were issued, which was a decrease of 18.98% compared to 2019.

Out of the total, 91.18% or 4,399 certificates were issued through examinations facilitated by accredited institutions, while 8.82% or 426 certificates were issued through examinations facilitated by the Commission.

As of 2020, the total number of certificates issued by the Commission stood at 146,784 certificates.

There are six (6) categories of Certificates of Competency issued, namely:

- *Electrical Services Engineer (ESE)*
- *Competent Electrical Engineer (CEE)*
- *Electrical Supervisor*
- *Chargeman*
- *Wireman / Testing Endorsement*
- *Cable Jointer*

Perakuan Kekompetenan Elektrik Yang Dikeluarkan, 2020

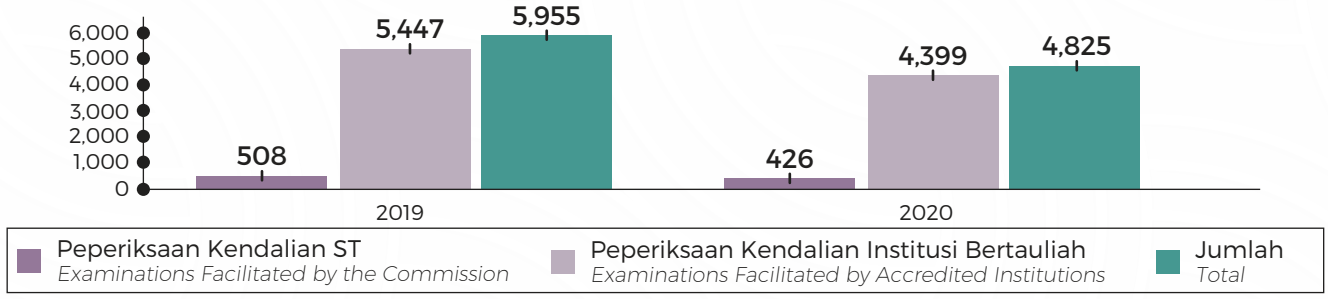
Electrical Certificates of Competency Issued, 2020

	Kategori Perakuan Kekompetenan *Category of Certificate of Competency*										
	PW	END PW	PJ	PJ THD	PK	PE	JEK *CEE*	JEK THD	JPE *ESE*	Ganti Perakuan *Certificate Replacement*	**Jumlah** *Total*
Melalui Peperiksaan kendalian ST *Through Examinations Facilitated by the Commission*	**23**	**9**	**268**	**48**	**5**	**4**	**25**	**12**	**9**	**23**	**426**
Melalui Peperiksaan Kendalian Institusi Bertauliah *Through Examinations Facilitated by Accredited Institutions*	**2,255**	**-**	**1,915**	**116**	**43**	**-**	**-**	**-**	**-**	**70**	**4,399**
Jumlah *Total*	**2,278**	**9**	**2,183**	**164**	**48**	**4**	**25**	**12**	**9**	**93**	**4,825**

Nota/*Note*: THD - Terhad/*Limited*, ENDPW - Pendawai + Endorsan Pengujian / *Wireman + Testing Endorsement*

Pengeluaran Perakuan Kekompetenan Elektrik, 2019 & 2020

Issuance of Electrical Certificates of Competency, 2019 & 2020



PERAKUAN KEKOMPETENAN GAS

Semua kerja yang melibatkan pemasangan, pembinaan, penyenggaraan, pembaikan, atau pengendalian mana-mana talian paip atau pepasangan atau bahagiannya hendaklah dijalankan atau diselia di bawah pengawasan dan diperakui oleh Orang Kompeten Gas.

Pada 2020, ST telah mengeluarkan sebanyak 36 Perakuan Kekompetenan Gas kepada tiga (3) kategori kelas yang berbeza, iaitu Penyelia Kejuruteraan Gas, Jurugegas Gas Kelas I dan III.

Pada keseluruhannya, seramai 1,132 individu telah diberikan Perakuan Kekompetenan Gas sehingga akhir 2020.

GAS CERTIFICATES OF COMPETENCY

All work involving the installation, construction, maintenance, repair, or operation of any pipeline or installation or its parts need to be undertaken or supervised and certified by a Gas Competent Person.

In 2020, the Commission issued a total of 36 Gas Certificates of Competency to three (3) different categories of classes, namely Gas Engineering Supervisors, Gas Fitters Class I and III.

Overall, a total of 1,132 individuals have been granted Gas Certificates of Competency by the end of 2020.

Bilangan Pemegang Perakuan Kekompetenan Gas mengikut Kategori
Number of Gas Certificate of Competency Holders by Category

Kelas Kekompetenan *Competency Class*	**Bilangan** *Number*
Jurutera *Engineer*	**87**
Penyelia Kejuruteraan Gas *Gas Engineering Supervisor*	**309**
Jurugegas Gas Kelas I *Class I Gas Fitter*	**275**
Jurugegas Gas Kelas II *Class II Gas Fitter*	**208**
Jurugegas Gas Kelas III *Class III Gas Fitter*	**235**
Jumlah *Total*	**1,132**

PEPERIKSAAN KEKOMPETENAN ELEKTRIK

Antara aktiviti pada 2020 turut meliputi pengendalian peperiksaan amali dan lisan bagi Penjaga Jentera (Persendirian), dan temuduga bagi Jurutera Perkhidmatan Elektrik (JPE), Jurutera Elektrik Kompeten (JEK termasuk JEK Terhad Makmal Voltan Tinggi dan JEK Terhad Grid *Maintenance* TNB) dan Penyelia Elektrik (PE).

Peperiksaan teori tidak dapat dijalankan bagi 2020 lantaran penguatkuasaan terhadap PKP.

Peperiksaan Jurutera (JPE, JEK & PE)

Peperiksaan JPE, JEK dan Penyelia Elektrik telah dijalankan di Ibu Pejabat ST dan Pejabat Kawasan Kota Kinabalu sementara bagi peperiksaan JEK Terhad Makmal Voltan Tinggi dijalankan di makmal yang terlibat. Peperiksaan ini telah dapat dijalankan pada 2020 kecuali di dalam tempoh PKP dan PKPB.

Sepanjang 2020, jumlah calon peperiksaan JPE, JEK dan PE mencatatkan seramai 85 orang, di mana 44 calon telah lulus dan 41 calon gagal.

Peperiksaan Penjaga Jentera

Pada 2020, peperiksaan amali dan lisan kekompetenan Penjaga Jentera Voltan Tinggi telah diadakan di tiga (3) buah institusi yang ditauliahkan oleh ST.

Jumlah keseluruhan calon yang menduduki peperiksaan Penjaga Jentera Voltan Tinggi bagi 2020 adalah seramai 124 orang, dimana seramai 89 calon telah lulus dan 35 orang gagal.

ELECTRICAL COMPETENCY EXAMINATIONS

Electrical competency examinations in 2020 consisted of practical and oral examinations for Chargemen (Private), and interviews for Electrical Services Engineers (ESE), Competent Electrical Engineers (CEE including Restricted CEE for High Voltage Laboratory and Restricted CEE for TNB Grid Maintenance) and Electrical Supervisors.

In 2020, the theory examination could not be conducted due to the implementation of the MCO.

Examination for Engineers (ESE, CEE & Electrical Supervisors)

The ESE, CEE and Electrical Supervisor examinations were conducted at the Commission's Head Office and Kota Kinabalu Regional Office while the Restricted CEE for High Voltage Laboratory examination was conducted at selected laboratories. These examinations were conducted throughout 2020 except during the MCO and CMCO periods.

In 2020, there were 85 candidates for the ESE, CEE and Electrical Supervisor examinations, of which 44 candidates passed and the remaining 41 candidates failed.

Examination for Chargemen

In 2020, practical and oral examinations for High Voltage Chargeman were held at three (3) institutions accredited by the Commission.

The total number of candidates that sat for the examinations for High Voltage Chargeman in 2020 stood at 124, of which 89 candidates passed and the remaining 35 candidates failed.

Peperiksaan Penjaga Jentera mengikut Kategori
Examinations for Chargemen by Category

Kategori *Category*	**Institusi** *Institution*						
	ILSAS Bangi		ILSAS Malim Nawar Perak		INSTEP K.Terengganu		**Jumlah Calon** *Total Candidates*
	Lulus *Pass*	Gagal *Fail*	Lulus *Pass*	Gagal *Fail*	Lulus *Pass*	Gagal *Fail*	
B0 11 kV	-	-	**39**	**5**	-	-	**44**
B0 33 kV	**45**	**21**	-	-	-	-	**66**
B1 & B4	-	-	-	-	**5**	**9**	**14**
Jumlah Calon *Total Candidates*	**45**	**21**	**39**	**5**	**5**	**9**	**124**

PEPERIKSAAN KEKOMPETENAN GAS

ST juga telah menjalankan peperiksaan-peperiksaan Kekompetenan Gas yang terdiri daripada peperiksaan bertulis dan lisan.

Peperiksaan Bertulis

Peperiksaan bertulis wajib diduduki oleh calon yang tidak mendapat pengecualian. Calon yang lulus peperiksaan bertulis perlu menghadiri temuduga secara lisan sebelum diberi Perakuan Kekompetenan.

Pada 2020, peperiksaan bertulis telah diadakan pada 19 Februari 2020 dimana seramai sembilan (9) orang calon telah menghadirinya. Seramai dua (2) orang calon telah mengambil peperiksaan dalam kategori Penyelia Kejuruteraan Gas dan tujuh (7) orang calon lagi dalam kategori Jurugegas Gas Kelas III. Dari jumlah ini hanya tiga (3) orang calon sahaja yang lulus iaitu bagi kategori Jurugegas Kelas III dan selebihnya telah gagal.

Peperiksaan Lisan (Temuduga)

Calon-calon yang layak untuk menghadiri temuduga mestilah samada telah lulus peperiksaan bertulis atau telah diberikan pengecualian kerana telah lulus kursus-kursus yang ditauliah dari institusi-institusi latihan yang diikitiraf.

Pada 2020, ST telah menjalankan sebanyak 24 sesi temuduga yang telah dihadiri oleh 43 calon. Daripada bilangan ini, seramai 36 calon telah lulus peperiksaan

GAS COMPETENCY EXAMINATIONS

The Commission also conducted Gas Competency examinations consisting of written and oral examinations.

Written Examinations

The written examination is compulsory for all candidates unless they are granted an exemption. Candidates who pass the written examination are required to attend an oral interview before they are granted the Certificate of Competency.

In 2020, a written examination was held on 19 February 2020 with nine (9) candidates. A total of two (2) candidates attended the Gas Engineering Supervisor examination while the remaining seven (7) attended the Class III Gas Fitter examination. Only three (3) candidates from the Class III Gas Fitter category passed while the remainder failed.

Oral Examinations (Interviews)

Candidates eligible for interviews must have either passed their written examination or be exempted after having passed the accredited courses from recognised training institutions.

In 2020, the Commission conducted a total of 24 interview sessions with 43 candidates. A total of 36 candidates passed their respective oral examinations and were awarded the Gas Certificates of Competency. This comprised one (1) Gas

lisan masing-masing dan telah diberi Perakuan Kekompetenan Gas. Mereka terdiri daripada seorang Penyelia Kejuruteraan Gas, 12 Jurugegas Gas Kelas I dan 23 Jurugegas Gas Kelas III.

Engineering Supervisor, 12 Class I Gas Fitters and 23 Class III Gas Fitters.

Sesi Peperiksaan yang Dijalankan, 2016-2020
Examination Sessions Conducted, 2016-2020

Peperiksaan *Examination*	**2016**	**2017**	**2018**	**2019**	**2020**
Peperiksaan Bertulis *Written Examination*	**1**	**0**	**1**	**0**	**1**
Temuduga *Interview*	**39**	**34**	**25**	**24**	**24**

Jumlah Calon yang Mengambil Peperiksaan, 2016-2020
Total Examination Candidates, 2016-2020

Peperiksaan *Examination*	**2016**	**2017**	**2018**	**2019**	**2020**
Peperiksaan Bertulis *Written Examination*	**17**	**0**	**17**	**0**	**9**
Temuduga *Interview*	**128**	**81**	**59**	**66**	**43**

Pada 2020, tiada aktiviti pemeriksaan dan audit dijalankan ke atas institusi yang ditauliahkan lantaran pematuhan terhadap PKP.

In 2020, no inspection and audit activities were conducted on accredited institutions in compliance with the MCO.

PENGAUDITAN INSTITUSI LATIHAN BERTAULIAH

Pada 2020, sebanyak 18 institusi yang telah ditauliahkan terpilih untuk pelaksanaan audit bagi kekompetenan elektrik, bagi memastikan institusi-institusi mematuhi semua syarat-syarat pentauliahan yang ditetapkan seperti kelengkapan pembelajaran, pengambilan pelajar, bilangan tenaga pengajar berkompeten yang mencukupi dan lain-lain syarat yang perlu diikuti.

Institusi yang diaudit akan diberikan teguran, nasihat dan tunjuk ajar bagi mempertingkatkan lagi mutu latihan agar boleh melahirkan orang-orang kompeten elektrik yang berkualiti.

AUDIT OF ACCREDITED TRAINING INSTITUTIONS

In 2020, 18 accredited institutions underwent electrical competency audits to ensure compliance with all accreditation criteria such as learning equipment, student recruitment, number of competent instructors and other necessary conditions.

The audited institutions were advised on methods to further improve the quality of training to produce quality electrical competent persons.

Institusi Bertauliah yang Telah Dilaksanakan Audit, 2020
Audited Accredited Institutions, 2020

Bil *No*	**Institusi** *Institution*	**Tarikh Audit** *Audit Date*
1	GIATMARA Tanah Merah	4 Februari/*February* 2020
2	GIATMARA Tambun, Perak	7 Julai/*July* 2020
3	GIATMARA Kuala Kangsar, Tambun Perak	8 Julai/*July* 2020
4	GIATMARA Bayan Lepas, Pulau Pinang	10 Julai/*July* 2020
5	Institut Kemahiran Belia Negara Seri Iskandar, Perak	4 Ogos/*August* 2020
6	GIATMARA Pendang, Kedah	4 Ogos/*August* 2020
7	GIATMARA Sungai Siput, Perak	5 Ogos/*August* 2020
8	GIATMARA Merbok, Kedah	5 Ogos/*August* 2020
9	GIATMARA Balik Pulau, Pulau Pinang	6 Ogos/*August* 2020
10	GIATMARA Kulim Bandar Baharu, Kedah	6 Ogos/*August* 2020
11	GIATMARA Batu Pahat, Johor	29 September 2020
12	Kolej Kemahiran Johor, Kluang, Johor	30 September 2020
13	GIATMARA Maran, Pahang	14 Disember/*December* 2020
14	GIATMARA Jerantut, Pahang	15 Disember/*December* 2020
15	GIATMARA Jerlun, Kedah	15 Disember/*December* 2020
16	GIATMARA Raub, Pahang	16 Disember/*December* 2020
17	GIATMARA Pokok Sena, Kedah	16 Disember/*December* 2020
18	GIATMARA Sik, Kedah	17 Disember/*December* 2020

Sebanyak sepuluh (10) kursus baharu telah ditauliahkan di institusi sedia ada dan dua (2) institusi baharu telah ditauliahkan sepanjang 2020. Institusi yang ditauliahkan adalah GIATMARA di Pengkalan Chepa, Kelantan untuk kursus Pendawai PW2 sepenuh masa. Pada masa yang sama, Kursus Modul Kendalian Pencawang 11 kV secara sepenuh dan separuh masa di ILSAS Kulai, Johor juga turut ditauliahkan.

Pada 9 hingga 12 Mac 2020, ST telah mengadakan bengkel penggubalan dan pemurnian soalan peperiksaan (teori) kekompetenan elektrik di Melaka. Bengkel tersebut diadakan untuk semakan soalan-soalan kategori Penjaga Jentera Elektrik A4, B0, B0 (TNB/SESB), B1 dan B4.

Mesyuarat Jawatankuasa Peperiksaan bagi tujuan penyelarasan dan pelaksanaan perkara-perkara yang berhubung dengan peperiksaan juga diadakan sebanyak empat (4) kali sepanjang 2020.

A total of ten (10) new courses were accredited at existing institutions and two (2) new institutions were accredited throughout 2020. The newly accredited institutions were GIATMARA in Pengkalan Chepa Kelantan for the full-time PW2 Wireman course and ILSAS Kulai, Johor for the full-time and part-time 11 kV Substation Operation Module course.

In addition, the Commission conducted a workshop on formulating and refining questions for electrical competency examinations (theory) from 9 to 12 March 2020 in Melaka. The purpose of the workshop was to review examination questions under the Electrical Chargeman A4, B0, B0 (TNB/SESB), B1 and B4 categories.

Examination Committee meetings were also held four (4) times throughout 2020 to discuss the matters relating to the coordination and implementation of examinations.

Pemantauan peperiksaan institusi bertauliah telah dijalankan mengikut kategori peperiksaan, bertujuan memastikan perjalanan peperiksaan yang dijalankan oleh institusi tersebut mengikut syarat-syarat dan prosedur peperiksaan yang betul.

Selain itu, sebanyak tiga (3) sesi libat urus bersama pengurusan tertinggi institusi juga telah dijalankan iaitu:

- Institusi Bertauliah Swasta
- Bahagian Kemahiran dan Teknikal (BKT) Majlis Amanah Rakyat (MARA)
- *MySkills*

Monitoring of accredited institutions' examinations was also carried out according to the examination categories to ensure that the examinations conducted were in accordance with the relevant conditions and procedures.

In addition, a total of three (3) engagement sessions were held with the top management of the following institutions:

- *Private Accredited Institutions*
- *Bahagian Kemahiran dan Teknikal (BKT) Majlis Amanah Rakyat (MARA)*
- *MySkills*

Institusi Latihan yang Telah Ditauliahkan, 2020
Training Institutions Accredited, 2020

Bil *No*	**Institusi** *Institution*	**Kursus** *Course*	**Tarikh** *Date*
1	ILSAS Kulai, Johor	Kursus Modul Kendalian Pencawang 11 kV (Secara Separuh dan Sepenuh Masa) *11 kV Substation Operation Module Course (Part-time and Full-time)*	17 Februari/*February* 2020
2	GIATMARA Pengkalan Chepa, Kelantan	Kursus Pendawai PW2 (Sepenuh Masa) *PW2 Wireman Course (Full-time)*	17 Februari/*February* 2020

Pemantauan Peperiksaan Institusi Bertauliah, 2020
Monitoring of Accredited Institution Examinations, 2020

Bil *No*	**Institusi** *Institution*	**Kursus** *Course*	**Tarikh** *Date*
1	UniKL BMi, Selangor	Penjaga Jentera B0 *Chargeman B0*	7 – 8 Jan 2020
2	UniKL BMI, Selangor	Penjaga Jentera B0 *Chargeman B0*	25 Sept 2020
3	IKTBN, Sepang Selangor	Penjaga Jentera *Chargeman*	25 Sept 2020
4	IKM Lumut, Perak	Pendawai & Penjaga Jentera *Wireman & Chargeman*	28 – 30 Sept 2020
5	IKM Kuala Lumpur	Pendawai & Penjaga Jentera *Wireman & Chargeman*	28 – 30 Sept 2020
6	ADTEC Kemaman, Terengganu	Penjaga Jentera B0 11 kV *Chargeman B0 11 kV*	11, 12 dan 13 Dis 2020 *11, 12 and 13 Dec 2020*

PENDAFTARAN ORANG KOMPETEN GAS

Setiap Orang Kompeten Gas perlu berdaftar bersama ST dan tempoh sah pendaftaran adalah selama 12 bulan.

Pada 2020, terdapat seramai 486 pendaftaran Orang Kompeten Gas (2019: 408 pendaftaran). Daripada jumlah ini, seramai 466 adalah di dalam kategori pembaharuan dan 28 pula adalah pendaftaran baharu. Antara faktor peningkatan pendaftaran ini adalah berikutan arahan yang dikeluarkan bagi memastikan orang kompeten yang bekerja di dalam industri perlu berdaftar bersama ST.

Secara keseluruhannya, tahun 2020 mendapati trend kenaikan bagi pendaftaran Orang Kompeten Gas bagi kesemua kelas kekompetenan iaitu kenaikan sebanyak 19% berbanding 2019.

REGISTRATION OF GAS COMPETENT PERSONS

All Gas Competent Persons must be registered with the Commission and the registration is valid for a 12-month period.

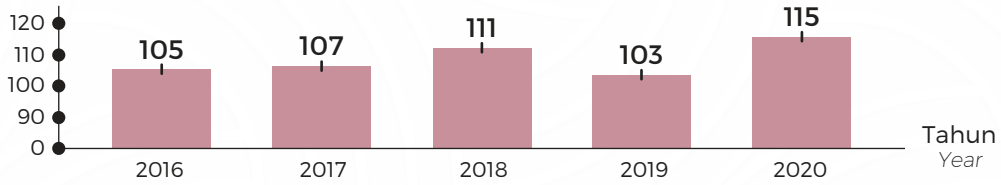
A total of 486 Gas Competent Persons were registered in 2020 (2019: 408 registrations) of which, 466 were renewals and the remaining 28 were new registrations. The increase in the number of registrations was due to a directive that required competent persons working in the industry to be registered with the Commission.

Overall, there was a 19% increase in the number of registration of Gas Competent Persons for all competency classes in 2020 compared to 2019.

Pendaftaran Orang Kompeten Gas, 2016-2020
Registration of Gas Competent Persons, 2016-2020

Kelas Kekompetenan *Class of Competency*	**Bilangan Orang Kompeten Gas Yang Berdaftar** *Number of Registered Gas Competent Persons*									
	Pendaftaran Pembaharuan *Renewal of Registration*					**Pendaftaran Baharu** *New Registration*				
	2016	**2017**	**2018**	**2019**	**2020**	**2016**	**2017**	**2018**	**2019**	**2020**
Jurutera Gas *Gas Engineers*	**24**	**26**	**26**	**24**	**22**	**0**	**2**	**0**	**1**	**2**
Penyelia Kejuruteraan Gas *Gas Engineering Supervisors*	**96**	**95**	**109**	**101**	**105**	**2**	**0**	**1**	**6**	**11**
Jurugegas Gas Kelas I *Class I Gas Fitters*	**125**	**135**	**143**	**137**	**143**	**1**	**1**	**0**	**7**	**9**
Jurugegas Gas Kelas II *Class II Gas Fitters*	**28**	**25**	**28**	**42**	**89**	**0**	**1**	**85**	**3**	**1**
Jurugegas Gas Kelas III *Class III Gas Fitters*	**53**	**63**	**88**	**81**	**107**	**0**	**1**	**4**	**6**	**5**
Jumlah *Total*	**326**	**344**	**394**	**385**	**466**	**3**	**5**	**90**	**23**	**28**

Bilangan Pendaftaran Kontraktor Gas, 2016-2020
Number of Registrations of Gas Contractors, 2016-2020



PENDAFTARAN KONTRAKTOR GAS

Bagi memastikan sistem talian paip dan perpaipan gas yang dipasang adalah selamat dan tidak membahayakan kepada pengguna dan orang awam, ST mewajibkan hanya kontraktor yang mahir dan berkeupayaan sahaja dibenarkan menjalankan kerja-kerja tersebut.

Terdapat empat (4) kelas Kontraktor Gas, iaitu Kelas A, Kelas B, Kelas C dan Kelas D yang didaftarkan bersama ST. Setiap kelas mempunyai skop kerja masing-masing berdasarkan klasifikasi pepasangan gas dan merangkumi sebarang kerja-kerja berkaitan dengan pemasangan, pembinaan, pengujian, operasi, penentukuran, penyenggaraan, pembaikan atau pengendalian talian paip atau pepasangan gas atau sebahagian daripadanya.

Pada 2020, jumlah pendaftaran kontraktor gas telah meningkat kepada 115 pendaftaran (2019: 103 pendaftaran). Daripada jumlah ini, sebanyak 103 merupakan pendaftaran bagi pembaharuan dan baki 12 merupakan permohonan baharu termasuk tiga (3) kontraktor yang bertukar kelas.

Jumlah ini merekodkan peningkatan pendaftaran sebanyak 11.6% berbanding tahun sebelumnya lanjutan inisiatif kesedaran yang berterusan di kalangan sub-kontraktor sedia ada supaya berdaftar bersama ST.

Sejak 2016, jumlah pendaftaran kontraktor gas telah merekodkan trend menaik kecuali pada 2019 dengan jumlah pendaftaran tertinggi bagi Kelas A dan B.

REGISTRATION OF GAS CONTRACTORS

To ensure that gas pipelines and piping are installed safely and do not endanger consumers and the public, the Commission requires installation works for gas pipelines and piping to be carried out solely by skilled and competent contractors.

There are four (4) classes of Gas Contractors registered with the Commission, namely Class A, Class B, Class C and Class D. Each have a specified scope of work based on the classification of gas installations, covering any work related to the installation, construction, testing, operation, calibration, maintenance, repair or operation of pipelines or gas installations or their parts.

In 2020, the number of gas contractor registrations increased to 115 registrations (2019: 103 registrations) consisting of 103 renewals and 12 new applications including three (3) contractors who changed classes.

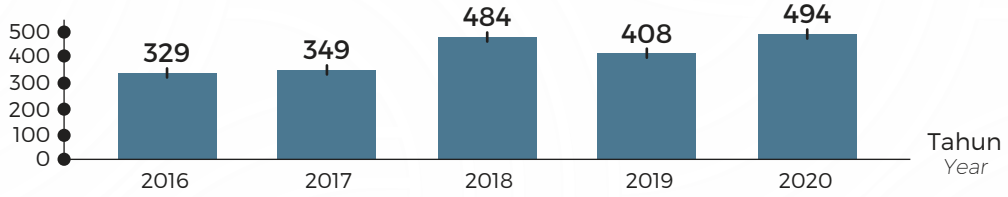
The 11.6% increase in the number of registrations compared to the previous year was the result of continuous efforts to enhance awareness among existing sub-contractors to register with the Commission.

Since 2016, the number of gas contractor registrations has been on an upward trend except in 2019, with Classes A and B having recorded the highest number of registrations.

Pendaftaran Kontraktor Gas mengikut Kelas, 2016-2020
Registration of Gas Contractors by Class, 2016-2020

Tahun *Year*	**Kelas A** *Class A*	**Kelas B** *Class B*	**Kelas C** *Class C*	**Kelas D** *Class D*	**Jumlah** *Total*
2016	**42**	**38**	**18**	**7**	**105**
2017	**46**	**34**	**21**	**6**	**107**
2018	**47**	**35**	**24**	**5**	**111**
2019	**49**	**32**	**17**	**5**	**103**
2020	**51**	**36**	**20**	**7**	**115**

Bilangan Pendaftaran Orang Kompeten Gas, 2016-2020
Number of Registrations of Gas Competent Persons, 2016-2020



PERAKUAN KELULUSAN KELENGKAPAN ELEKTRIK DAN PERALATAN GAS
CERTIFICATES OF APPROVAL FOR ELECTRICAL AND GAS EQUIPMENT

PERAKUAN KELULUSAN KELENGKAPAN ELEKTRIK

Statistik Pengeluaran Perakuan Kelulusan (CoA), Pembaharuan CoA bagi Mengimport/Mengilang dan Pameran

Di bawah Peraturan 97(1), Peraturan-peraturan Elektrik 1994, Perakuan Kelulusan (PK) atau lebih dikenali sebagai CoA adalah diperlukan untuk aktiviti mengilang, mengimport, mempamer, menjual atau mengiklan kelengkapan elektrik. Jenis-jenis kelengkapan elektrik yang dikawal oleh ST adalah:

- Kelengkapan domestik.
- Kelengkapan voltan rendah yang biasanya dijual secara langsung kepada orang awam.
- Kelengkapan voltan rendah yang tidak memerlukan kemahiran khusus dalam pengendaliannya.

CoA diperlukan bagi memastikan kelengkapan elektrik yang berada di pasaran mematuhi standard keselamatan yang telah ditetapkan dan seterusnya mengurangkan risiko kemalangan elektrik yang disebabkan oleh kelengkapan elektrik tersebut.

ST juga mengeluarkan Surat Pelepasan kepada pihak Kastam sebagai kelulusan pengecualian dari CoA untuk pengimportan kelengkapan elektrik yang dikawal selia oleh ST. Terdapat lapan (8) jenis surat pelepasan iaitu:

- Tujuan Khas
- Konsert
- Kajian Kilang
- Kajian Kualiti
- Pembaikan dan Eksport Semula
- Import Komponen untuk 100% Eksport
- Import Komponen untuk Pasaran Tempatan

ST juga mengeluarkan Surat Pelepasan untuk kelengkapan elektrik yang bukan dikawal selia oleh ST sekiranya diperlukan oleh pihak Kastam.

CERTIFICATES OF APPROVAL FOR ELECTRICAL EQUIPMENT

Issuance of Certificate of Approval (CoA), CoA Renewal for Importing/Manufacturing and Exhibition Statistics

Pursuant to Regulation 97(1), Electricity Regulations 1994, a Certificate of Approval (CoA) is mandatory for manufacturing, importing, displaying, selling or advertising electrical equipment. The types of electrical equipment regulated by the Commission are as follows:

- *Domestic equipment.*
- *Low voltage equipment commonly sold directly to the general public.*
- *Low voltage equipment that do not require specialised skills to operate.*

CoAs are required to ensure that electrical equipment that are in the market comply with established safety standards in order to reduce the risk of electrical accidents.

Release Letters are also issued to Customs for imported electrical equipment regulated by the Commission as approval for CoA exemption. There are eight (8) types of Release Letters, namely:

- *Special Purposes*
- *Concert*
- *Factory Review*
- *Quality Review*
- *Repairs and Re-Exports*
- *Import of Components for 100% Export*
- *Import of Components for the Local Market*

The Commission also issues Release Letters for non-regulated electrical equipment upon request by Customs.

Setakat ini, ST mengawal selia sebanyak 34 kategori kelengkapan elektrik. Kelengkapan elektrik untuk pameran tidak boleh dijual kepada orang awam dan perlu dikembalikan semula ke negara asal setelah pameran tamat.

To date, there are 34 categories of electrical equipment regulated by the Commission. Electrical equipment imported for exhibition purposes cannot be sold to the public and are required to be returned to the country of origin after the exhibition ends.

Jumlah PK dan Surat Pelepasan bagi Kelengkapan Elektrik, 2010-2020
Total CoAs and Release Letters for Electrical Equipment, 2010-2020

Tahun *Year*	Perakuan Kelulusan (PK) *Certificate of Approval (CoA)*			Jumlah *Total*	Pembaharuan (PK) *Renewal (CoA)*		Jumlah *Total*	Surat Pelepasan *Release Letter*
	Import *Import*	Kilang *Factory*	Pameran *Exhibition*		Import *Import*	Kilang *Factory*		
2010	507	145	2	654	216	111	327	152
2011	3,557	1,186	36	4,779	1,846	818	2,664	859
2012	3,597	1,069	17	4,683	1,988	1,053	3,041	1,297
2013	5,447	1,276	6	6,729	1,923	926	2,849	1,820
2014	7,539	1,927	29	9,495	1,739	806	2,545	1,990
2015	7,415	1,413	62	8,890	3,015	1,304	4,319	2,048
2016	8,085	1,306	31	9,422	3,124	1,192	4,316	2,425
2017	7,324	1,304	16	8,644	3,487	1,323	4,810	2,933
2018	8,941	1,398	8	10,347	3,461	1,217	4,678	3,315
2019	8,176	1,316	8	9,500	4,382	1,262	5,644	2,845
2020	8,262	1,419	2	9,681	4,550	1,028	5,578	2,330

Statistik Pengeluaran Perakuan Pendaftaran (CoR)

Pada 2020, peratusan kelulusan yang dikeluarkan kepada pengimport adalah sebanyak 84% berbanding pengilang iaitu sebanyak 16%. Ini menunjukkan aktiviti mengimport kelengkapan elektrik mendominasi industri berbanding aktiviti mengilang bagi 2020 dan juga tahun-tahun sebelum ini.

Issuance of Certificates of Registration (CoR) Statistics

In 2020, 84% of certificates issued were to importers whereas the remaining 16% were issued to manufacturers. This shows that the majority of the industry was involved in importing electrical equipment in 2020 and the years prior, as opposed to manufacturing them.

Jumlah Pengeluaran Perakuan Pendaftaran bagi Pengimport dan Pengilang, 2020
Total Issuance of Certificates of Registration for Importers and Manufacturers, 2020

Bulan *Month*	Perakuan Pendaftaran (CoR) *Certificate of Registration (CoR)*	
	Mengimport *Import*	Mengilang *Manufacture*
Januari/*January*	40	9
Februari/*February*	47	11
Mac/*March*	43	4

April	**11**	**4**
Mei/*May*	**46**	**10**
Jun/*June*	**52**	**8**
Julai/*July*	**51**	**9**
Ogos/*August*	**48**	**10**
September	**50**	**10**
Oktober/*October*	**64**	**8**
November	**64**	**16**
Disember/*December*	**53**	**11**
Jumlah *Total*	**569**	**110**

Pembatalan Perakuan Kelulusan (CoA) yang Didapati Gagal Ujian Konsainmen SIRIM

Sejak September 2016, ST telah membatalkan CoA yang didapati gagal Ujian Konsainmen SIRIM. Sehingga Disember 2020, sejumlah 21 *batch* CoA telah mendapat persetujuan pembatalan yang melibatkan sejumlah 1,120 CoA dan 363 syarikat pengimport.

Cancellation of Certificates of Approval (CoA) that Failed the SIRIM Consignment Test

Since September 2016, the Commission has cancelled the CoA of electrical equipment that failed the SIRIM Consignment Test. As of December 2020, a total of 21 batches of CoA have received consensus for cancellation, involving a total of 1,120 CoAs belonging to 363 importing companies.

Pembatalan Perakuan Kelulusan mengikut *Batch*, 2016-2020

Cancellation of Certificates of Approval by Batch, 2016-2020

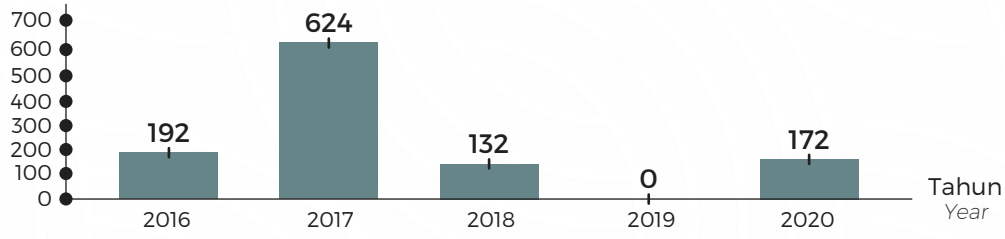
Batch *Batch*	**Bil. CoA Dibatalkan** *No. of CoA Cancelled*	**Bulan** *Month*	**Jumlah Pengimport** *Total Importers*
1	**34**	**September 2016**	**16**
2	**158**	**Disember/***December* **2016**	**44**
3	**132**	**Februari/***February* **2017**	**22**
4	**126**	**Mac/***March* **2017**	**26**
5	**138**	**April 2017**	**27**
6	**56**	**Mei/***May* **2017**	**16**
7	**48**	**Julai/***July* **2017**	**19**
8	**51**	**September 2017**	**17**
9	**34**	**November 2017**	**19**
10	**39**	**Disember/***December* **2017**	**11**
11	**10**	**Januari/***January* **2018**	**3**
12	**15**	**Februari/***February* **2018**	**6**
13	**10**	**Mac/***March* **2018**	**6**

14	**27**	**April 2018**	**16**
15	**44**	**Jun/*June* 2018**	**18**
16	**9**	**Julai/*July* 2018**	**5**
17	**17**	**November 2018**	**9**
18	**22**	**Januari/*January* 2020**	**15**
19	**8**	**Januari/*January* 2020**	**6**
1-2020	**129**	**Ogos/*August* 2020**	**54**
2-2020	**13**	**Ogos/*August* 2020**	**8**
Jumlah *Total*	**1,120**		**363**

Jumlah CoA yang dibatalkan pada 2018 telah menurun sebanyak 78.85% berbanding 2017. Walau bagaimanapun, pembatalan CoA dihentikan sementara pada 2019 untuk memberikan laluan kepada ST bertumpu terhadap penambahbaikan kepada prosedur pembatalan perakuan pada tahun tersebut. Seterusnya untuk 2020, sebanyak 172 CoA telah dibatalkan susulan tiada pembatalan dibuat pada 2019.

The total number of CoAs cancelled in 2018 decreased by 78.85% compared to 2017. The cancellation of CoAs was temporarily suspended in 2019 to allow the Commission to focus on the upgrading of the certificate cancellation procedures for the year. In 2020, a total of 172 CoAs were cancelled, while no cancellations were made in 2019.

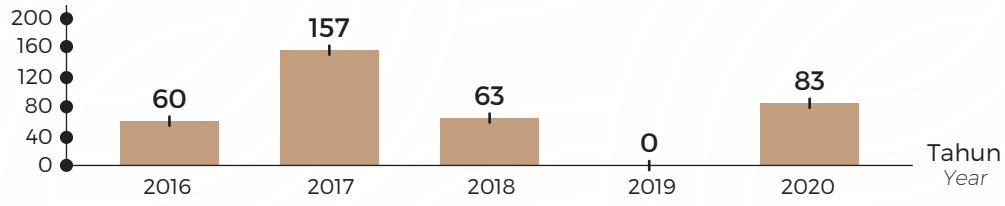
Jumlah Perakuan Kelulusan yang Dibatalkan, 2016-2020
Total Certificates of Approval Cancelled, 2016-2020



Jumlah pengimport yang terlibat juga menunjukkan penurunan sebanyak 59.87% berbanding 2017. Pada 2020, kes gagal ujian konsainmen SIRIM telah melibatkan seramai 83 pengimport.

The number of importers involved also decreased by 59.87% compared to 2017. In 2020, a total of 83 importers had failed the SIRIM consignment test.

Jumlah Pengimport yang Terlibat, 2016-2020
Total Importers Involved, 2016-2020



Selepas notis pembatalan CoA diserahkan kepada syarikat pengimport, di antara maklum balas yang diterima oleh ST ialah pengimport telah mengambil tindakan menghantar pulang ke negara asal dan ada juga yang melupuskan kelengkapan yang gagal konsainmen tersebut.

Seperti tahun sebelum ini, aktiviti-aktiviti melupus atau memusnah kelengkapan telah disaksikan oleh ST bagi mengesahkan kelengkapan tersebut tidak dijual terus ke pasaran.

Following the issuance of CoA cancellation notice to the importing company, equipment that have failed the consignment test were either returned to their country of origin or disposed of by the importer.

As per previous years, the disposal of the electrical equipment was witnessed by the Commission to confirm that the equipment were not sold directly to the market.

PERAKUAN KELULUSAN PENGILANG, PEMASANG DAN PENGIMPORT

Perakuan Kelulusan Pengilang, Pemasang dan Pengimport adalah sijil perakuan yang dikeluarkan oleh ST kepada syarikat-syarikat yang menjalankan aktiviti mengilang, memasang atau mengimport peralatan gas di Semenanjung dan Sabah.

Perakuan Kelulusan ini dikeluarkan berdasarkan Peraturan 116, Peraturan-Peraturan Bekalan Gas 1997.

Bagi 2020, sebanyak 141 Perakuan Kelulusan Pengilang, Pemasang dan Pengimport telah dikeluarkan. Jika dibuat perbandingan dengan tahun sebelumnya, terdapat 9% penurunan bilangan Perakuan Kelulusan yang telah dikeluarkan.

CERTIFICATES OF APPROVAL FOR MANUFACTURERS, ASSEMBLERS AND IMPORTERS

The Certificates of Approval for Manufacturers, Assemblers and Importers are certificates issued by the Commission to companies that manufacture, assemble or import gas equipment in the Peninsula and Sabah.

The Certificate of Approval is issued pursuant to Regulation 116, Gas Supply Regulations 1997.

In 2020, a total of 141 Certificates of Approval for Manufacturers, Assemblers and Importers were issued, recording a 9% decrease compared to the number of Certificates of Approval issued in the previous year.

PERAKUAN KELULUSAN GEGASAN, PERKAKAS DAN PERALATAN GAS

Perakuan Kelulusan Gegasan, Perkakas dan Peralatan Gas pula adalah sijil perakuan yang dikeluarkan oleh ST kepada syarikat pengilang, pemasang atau pengimport bagi gegasan, perkakas dan peralatan gas di Semenanjung dan Sabah. Perakuan Kelulusan ini dikeluarkan berdasarkan Peraturan 117, Peraturan-Peraturan Bekalan Gas 1997.

Bagi Perakuan Kelulusan Gegasan, Perkakas dan Peralatan Gas pula, sebanyak 1,106 Perakuan Kelulusan telah dikeluarkan yang melibatkan pelbagai jenis dan model peralatan gas. Dibandingkan dengan 2019, terdapat peningkatan sebanyak 15% bagi Perakuan Kelulusan yang telah dikeluarkan.

Kenaikan bilangan Perakuan Kelulusan Gegasan, Perkakas dan Peralatan Gas adalah disebabkan terdapat pengimport dapur gas domestik yang masih baharu yang memohon untuk mendapatkan kelulusan ini.

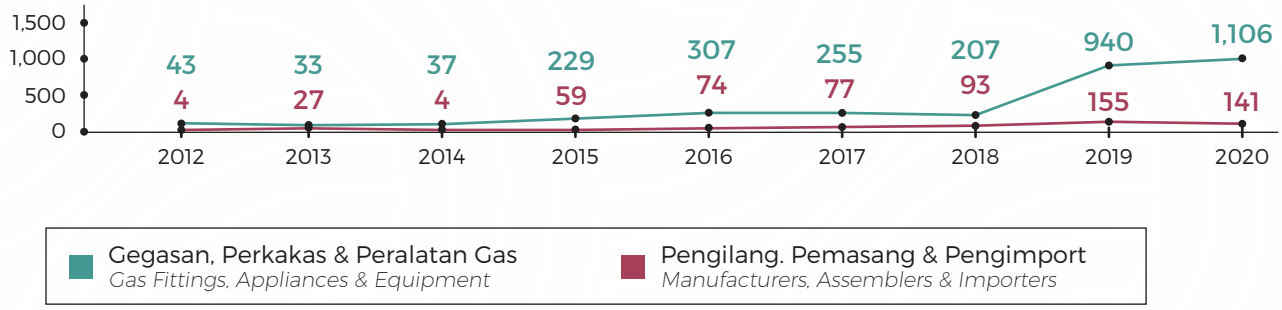
CERTIFICATES OF APPROVAL FOR GAS FITTINGS, APPLIANCES AND EQUIPMENT

Certificates of Approval for Gas Fittings, Appliances and Equipment are issued by the Commission to manufacturers, assemblers or importers of gas fittings, appliances and equipment in the Peninsula and Sabah based on Regulation 117, Gas Supply Regulations 1997.

A total of 1,106 Certificates of Approval for Gas Fittings, Appliances and Equipment were issued involving various types and models of gas equipment. There was an increase of 15% in the number of Certificates of Approval issued, compared with 2019.

The increase of Certificates of Approval for Gas Fittings, Appliances and Equipment issued was due to applications by new domestic gas stove importers.

Bilangan Perakuan Kelulusan yang Dikeluarkan, 2012-2020
Number of Certificates of Approval Issued, 2012-2020



KELULUSAN UNTUK MEMASANG (ATI) & KELULUSAN UNTUK MENGENDALI (ATO) PEPASANGAN GAS BERPAIP

Bagi setiap pepasangan gas berpaip yang akan dipasang, pemunya pepasangan perlulah memohon Kelulusan Untuk Memasang (ATI) dan Kelulusan Untuk Mengendali (ATO) daripada ST sebelum setiap pepasangan gas berpaip tersebut boleh beroperasi seperti yang dinyatakan dibawah Peraturan 15 dan 16, Peraturan-Peraturan Bekalan Gas 1997.

Bagi 2020, permohonan ATI yang diterima adalah sebanyak 1,774, manakala sebanyak 1,608 permohonan ATO. Berbanding 2019, permohonan ATI mengalami penurunan sebanyak 26% dan penurunan sebanyak 25% bagi ATO, berkemungkinan lanjutan penguatkuasaan PKP.

Bagi memastikan pepasangan gas berpaip yang akan dipasang mematuhi standard-standard yang telah ditetapkan, ST bekerjasama dengan Jabatan Standard Malaysia dalam membangunkan dan mengemaskini standard-standard keselamatan berkaitan sistem gas berpaip demi menjaga kepentingan pengguna dan orang awam.

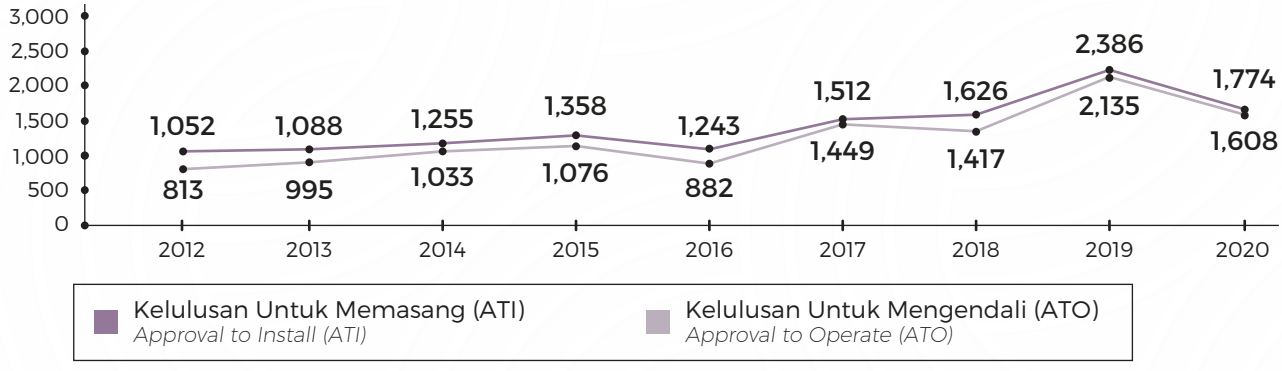
APPROVAL TO INSTALL (ATI) & APPROVAL TO OPERATE (ATO) FOR PIPED GAS INSTALLATIONS

Owners of piped gas installations are required to apply for Approval to Install (ATI) and Approval to Operate (ATO) from the Commission prior to their operation as specified under Rules 15 and 16, Gas Supply Regulations 1997.

A total of 1,774 ATI applications and 1,608 ATO applications were received in 2020. In comparison to 2019, ATI and ATO applications showed a decrease of 26% and 25% respectively, due to various factors such as the implementation of the MCO.

To ensure that piped gas installations comply with set standards, the Commission works closely with the Department of Standards Malaysia in developing and updating safety standards related to piped gas systems to safeguard the interests of consumers and the public.

Bilangan ATI dan ATO yang Dikeluarkan, 2012-2020
Number of ATIs and ATOs Issued, 2012-2020



PELAN DAN PROGRAM PENGURUSAN KESELAMATAN GAS BERPAIP (PGSMPP)

Pelan dan Program Pengurusan Keselamatan Gas Berpaip (PGSMPP) adalah suatu inisiatif yang diperkenalkan oleh ST bagi mengawalselia aspek keselamatan gas berpaip bagi sektor komersial dan domestik. Inisiatif ini telah dimulakan sejak dari 2018 sehingga sekarang.

Pada 2020, sebanyak tiga (3) premis sahaja yang telah dilawat dan diaudit dibawah PGSMPP iaitu:

1. *Melawati Mall,* Kuala Lumpur
2. *Mitsui Outlet,* Sepang, Selangor
3. *Berjaya Times Square Mall,* Kuala Lumpur

Pada 2020, lanjutan penguatkuasaan PKP telah menyebabkan lawatan tapak ke tujuh (7) premis lagi tidak dapat dilaksanakan seperti yang telah dijadualkan.

Melalui inisiatif ini, tiada kemalangan gas berpaip dilaporkan di premis komersial; pusat beli-belah, dobi dan lain-lain serta di premis domestik pada 2020.

PIPED GAS SAFETY MANAGEMENT PLAN AND PROGRAMME (PGSMPP)

The Piped Gas Safety Management Plan and Programme (PGSMPP) was introduced by the Commission to regulate aspects of piped gas safety for the commercial and domestic sectors. This is part of an ongoing initiative that started in 2018.

In 2020, only three (3) premises were visited and audited under the PGSMPP, namely:

1. *Melawati Mall, Kuala Lumpur*
2. *Mitsui Outlet, Sepang, Selangor*
3. *Berjaya Times Square Mall, Kuala Lumpur*

In 2020, site visits to seven (7) other premises could not be conducted as scheduled due to the implementation of the MCO.

As a result of this initiative, no piped gas accidents were reported at commercial premises including at shopping malls, launderettes and others, as well as at domestic premises in 2020.

PENINGKATAN AKTIVITI PENGUATKUASAAN
INCREASED ENFORCEMENT ACTIVITIES

PENGUATKUASAAN

Bagi memastikan keberkesanan terhadap pematuhan, ST memantau dan mengkaji pelaporan berdasarkan portfolio penguatkuasaan pepasangan, pelesenan, kelengkapan, kontraktor dan pemeteran. Pelaporan ini adalah bagi memastikan proses penguatkuasaan dapat dilaksanakan secara strategik bagi mencapai sasaran yang telah ditetapkan.

Sepanjang 2020, sebanyak 461 pemeriksaan telah dilaksanakan terhadap aktiviti senggaraan dan premis yang meliputi:

- Pepasangan Awam
- Pepasangan Gas Berpaip Premis Komersial dan Perumahan
- Aktiviti Senggaraan Pepasangan Utiliti
- Aktiviti Senggaraan Penjana Elektrik
- Sistem Pendawaian di Premis Perumahan

ENFORCEMENT

To ensure compliance, the Commission monitors and reviews reports from the installation, licensing, equipment, contractor and metering enforcement portfolios. This is done to achieve set targets through strategic implementation of enforcement processes.

In 2020, a total of 461 inspections were carried out on maintenance activities and premises which include:

- *Public Installations*
- *Piped Gas Installation at Commercial and Residential Premises*
- *Utility Installation Maintenance Activities*
- *Electrical Generator Maintenance Activities*
- *Wiring Systems at Residential Premises*

Tujuan pemeriksaan dilaksanakan adalah bagi memastikan pepasangan elektrik menjalani senggaraan *preventive* atau berjadual dan dikawal oleh orang kompeten yang berkelayakan. Pemeriksaan terhadap aktiviti senggaraan pula dijalankan bagi memastikan setiap aspek keselamatan dipatuhi ketika proses penyelenggaraan dilaksanakan.

Di samping menjalankan pemeriksaan pepasangan, ST juga menjalankan audit ke atas syarikat utiliti. Sebanyak 43 audit ke atas Tenaga Nasional Berhad (TNB) dan Sabah Electricity Sdn. Bhd. (SESB) telah dilaksanakan bagi menambah baik pelaksanaan sistem PMK. Proses pengeluaran PMK telah diteliti bagi memastikan kesemua yang terlibat dengan kerja-kerja elektrik berkaitan PMK memahami arahan bertulis dan mempraktikkan prosedur kerja selamat yang ditetapkan.

Daripada pemeriksaan tersebut, sebanyak tujuh (7) Notis Pematuhan telah dikeluarkan berhubung kesalahan pengeluaran PMK oleh pihak utiliti demi memberi kesedaran terhadap perlaksanaan PMK yang efektif yang dapat mengurangkan risiko kemalangan.

Bagi menyampaikan mesej keselamatan kepada pihak pengurusan pepasangan elektrik dan pengurusan pepaipan gas, ST telah menjalankan 143 Program Audit berdasarkan Pelan Pengurusan Keselamatan.

Inspections are carried out to ensure that electrical installations undergo preventive or scheduled maintenance which are supervised by a qualified competent person, and comply with all aspects of safety during the maintenance process.

In addition to installation inspections, the Commission also conducts audits on utility companies. A total of 43 audits on Tenaga Nasional Berhad (TNB) and Sabah Electricity Sdn. Bhd. (SESB) were carried out to improve the implementation of the PTW system. The PTW issuance process was reviewed to ensure that written instructions are clear to all parties involved in electrical works and that the prescribed work safety procedures are adhered to.

Following these inspections, a total of seven (7) Non-Compliance Notices were issued in relation to PTW issuance offences by utilities. The purpose was to increase awareness on the effective implementation of PTW in reducing the risk of accidents.

The Commission conducted 143 Audit Programmes based on its Safety Management Plan to convey the importance of safety to those who manage electrical installations and gas piping systems.

Program Audit, 2020
Audit Programmes, 2020

Aktiviti *Activity*	**Bil. Audit** *No. of Audits*	**Bil. Notis Dikeluarkan** *No. of Notices Issued*	**Kesalahan** *Offence*
Audit Penjana Utiliti *Utility Generator Audit*	**48**	**25**	Ketidakpatuhan terhadap ABE 1990 & PPE 1994 *Non-compliance with ESA 1990 & ER 1994*
Audit Penghantar Utiliti *Utility Shipper Audit*	**1**	**0**	Ketidakpatuhan terhadap ABE 1990 & PPE 1994 *Non-compliance with ESA 1990 & ER 1994*
Audit Pengagih Elektrik & Gas *Electricity & Gas Distributor Audit*	**18**	**4**	Ketidakpatuhan terhadap ABE 1990 & PPE 1994 *Non-compliance with ESA 1990 & ER 1994*
Audit Pengguna Berkapasiti Tinggi Elektrik & Gas *Electricity & Gas High-Capacity Consumer Audit*	**76**	**27**	Ketidakpatuhan terhadap ABE 1990 & PPE 1994 *Non-compliance with ESA 1990 & ER 1994*

Antara penemuan audit sewaktu pemeriksaan termasuk:'

- Gambarajah litar yang tidak dikemaskini atau tidak dipamer di bilik suis seperti keperluan peruntukan P19(1)(b).
- *Authorise Person (AP)* yang bertugas pada hari tersebut tidak mempunyai perakuan kekompetenan yang dikeluarkan oleh ST dan menandatangani PMK.
- Alat Uji yang digunakan telah tamat tempoh *calibration*.
- Terdapat *protection relay* di *Control Room* di mana tiada pelekat *calibration relay* dan tidak ditentu ukur.
- Orang kompeten kontraktor yang menjalankan kerja elektrik tidak berdaftar atau berdaftar di syarikat yang berlainan.
- Tiada Notis "DILARANG MASUK" dan Notis "BAHAYA" dipamerkan di pintu masuk bilik suis seperti keperluan P38, PPE.
- Tiada *CPR Chart* seperti keperluan P39, PPE.

Audit findings during the inspections include:

- *Circuit diagrams were not updated nor displayed in the switch room as required by provision P19(1)(b).*
- *Authorised Person (AP) on duty did not possess a certificate of competency issued by the Commission nor a signed PTW.*
- *The calibration of the test instrument used was no longer valid.*
- *The protection relay in the Control Room was not calibrated and did not carry the calibration relay label.*
- *The contractor's competent persons carrying out electrical works were not registered or were registered to a different company.*
- *The "NO ENTRY" and "DANGER" notices were not displayed at the entrance of the switch room as required under P38, ER.*
- *The CPR Chart was not displayed as required under P39, ER.*

PEMERIKSAAN
INSPECTIONS

Aktiviti Pemeriksaan yang Dijalankan, 2020
Inspection Activities Conducted, 2020

Aktiviti *Activity*	**Bil. Pemeriksaan** *No. of Inspections*	**Bil. Notis Dikeluarkan** *No. of Notices Issued*	**Kesalahan** *Offence*
Pemeriksaan keselamatan di pepasangan awam *Safety Inspections at Public Installations*	**229**	**96**	Ketidakpatuhan terhadap PPE 1994 *Non-compliance with ER 1994*
Pemeriksaan keselamatan sistem pendawaian di premis perumahan *Safety Inspection of Wiring Systems in Residential Premises*	**57**	**30**	Ketidakpatuhan terhadap PPE 1994 *Non-compliance with ER 1994*
Pemeriksaan keselamatan aktiviti senggaraan pepasangan utiliti *Safety Inspections of Utility Installation Maintenance Activities*	**45**	**13**	Ketidakpatuhan terhadap PPE 1994 *Non-compliance with ER 1994*
Pemeriksaan keselamatan aktiviti senggaraan pepasangan penjana elektrik *Safety Inspections of Electrical Generator Installation Maintenance Activities*	**24**	**9**	Kesalahan kerana ketidakpatuhan terhadap PPE 1994 *Non-compliance with ER 1994*

Pemeriksaan keselamatan pepasangan gas berpaip premis komersial dan perumahan *Safety Inspections of Piped Gas Installations at Commercial and Residential Premises*	**106**	**43**	Kesalahan kerana ketidakpatuhan terhadap ABG 1993 *Non-compliance with GSA 1993*

Pemeriksaan Kelengkapan Elektrik

Bagi memastikan kelengkapan elektrik domestik selamat digunapakai, sebanyak 242 pemeriksaan keselamatan kelengkapan elektrik telah dilaksanakan pada 2020.

Inspection of Electrical Equipment

To ensure the safety of domestic electrical equipment, a total of 242 safety inspections were carried out in 2020.

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PENGILANG PAPAN SUIS ELEKTRIK
ELECTRICAL SWITCHBOARD MANUFACTURERS

Premis pengilang diperiksa bagi memastikan kelengkapan elektrik yang dihasilkan telah diuji dan mendapat kelulusan SIRIM.
Manufacturers' premises were inspected to ensure that electrical equipment produced have been tested and approved by SIRIM.

75

KONTRAKTOR & PLATFORM DALAM TALIAN KELENGKAPAN ELEKTRIK
CONTRACTORS & ONLINE PLATFORMS FOR ELECTRICAL EQUIPMENT

Premis kontraktor elektrik dan platform dalam talian telah diperiksa bagi memastikan kontraktor-kontraktor elektrik terbabit menggunakan kelengkapan elektrik seperti RCD, MCCB dan kabel elektrik yang mematuhi standard piawaian keselamatan yang telah ditetapkan.
The premises of electrical contractors and online platforms were inspected to ensure that the electrical equipment used such as RCDs, MCCBs and electrical cables comply with set safety standards.

18

PENGIMPORT KELENGKAPAN ELEKTRIK
IMPORTERS OF ELECTRICAL EQUIPMENT

Pemeriksaan kelengkapan elektrik pengimpot di pelabuhan kontena diperiksa bagi memastikan kelengkapan elektrik yang dibawa masuk ke Semenanjung dan Sabah telah mendapat kelulusan oleh SIRIM dan selamat untuk digunakan sebelum dibenarkan untuk dijual kepada pengguna.
Importers of electrical equipment were inspected at container ports to ensure that equipment imported into the Peninsula and Sabah were approved by SIRIM and safe for use before entering the market and sold to consumers.

136

PERUNCIT KELENGKAPAN ELEKTRIK
RETAILERS OF ELECTRICAL EQUIPMENT

Premis peruncit kelengkapan elektrik di seluruh Semenanjung dan Sabah telah diperiksa bagi memastikan kelengkapan elektrik yang dijual kepada orang ramai telah dilabel dengan label keselamatan SIRIM-ST sebagai bukti kelengkapan yang dijual telah diuji dan selamat untuk digunakan.
The premises of electrical equipment retailers throughout the Peninsula and Sabah were inspected to ensure that electrical equipment sold to the public are labelled with the SIRIM-ST safety label as proof that the equipment sold have been tested and are safe for use.

Pemeriksaan Pepasangan Gas

Seperti pepasangan elektrik, pepasangan gas juga perlu berada dalam keadaan baik dan selamat serta mematuhi Akta Bekalan Gas 1993 serta Peraturan-Peraturan Bekalan Gas 1997. Pepasangan gas yang diperiksa adalah di premis komersial seperti dobi, hotel, kompleks membeli-belah, pusat konvensyen dan kawasan perumahan.

Inspection of Gas Installations

Gas installations are required to meet safety standards prescribed under the Gas Supply Act 1993 and the Gas Supply Regulations 1997. Inspections of gas installation were conducted at commercial premises such as laundrettes, hotels, shopping malls, and convention centres as well as at housing areas.

Pada 2020, sebanyak 106 pemeriksaan telah dilakukan dan hasil daripada pemeriksaan tersebut, sebanyak 43 notis telah dikeluarkan kepada pihak pengurusan premis untuk memohon lesen gas serta memperbetulkan sistem pepasangan gas mereka.

ST juga telah bekerjasama dengan Kementerian Perdagangan Dalam Negeri dan Hal Ehwal Pengguna (KPDNHEP) dan PBT dalam menjalankan pemeriksaan tersebut.

In 2020, a total of 106 inspections were carried out. As a result, 43 notices were issued instructing the management of the relevant premises to apply for gas licences and to rectify their gas installation systems.

The Commission also collaborated with the Ministry of Domestic Trade and Consumer Affairs (MDTCA) and the relevant Local Authorities in conducting these inspections.

PENYIASATAN

Penilaian Kertas Siasatan

Kertas Siasatan mengandungi maklumat dan bahan bukti atas tindakan yang dijalankan oleh pegawai penyiasat yang dilantik. Penyediaannya adalah berlandaskan Manual Penguatkuasaan, Penyiasatan dan Pendakwaan.

Kertas Siasatan yang diterima akan dikaji dan disemak mengikut format dan kaedah yang telah ditetapkan sebelum dibawa ke peringkat pendakwaan. Hanya Kertas Siasatan yang lengkap sahaja boleh diambil tindakan sama ada untuk dikompaun atau didakwa.

Beberapa peringkat tindakan perlu diambil sebelum Kertas Siasatan dibuka, bermula daripada persidangan Mesyuarat Jawatankuasa Siasatan yang akan menilai laporan awal kes-kes seperti kemalangan elektrik (maut dan tidak maut), kemalangan gas, kebakaran dan gangguan bekalan elektrik yang dilaporkan kepada ST.

Di mesyuarat ini, aspek-aspek teknikal berhubung kes akan dipertengahkan dan keputusan sama ada siasatan lanjut atau pembukaan Kertas Siasatan perlu dilaksanakan akan dibuat. Lazimnya, Kertas Siasatan akan dibuka apabila terdapat bukti kukuh untuk kesalahan di bawah akta dan peraturan.

Pada 2020, sebanyak 26 bilangan Mesyuarat Jawatankuasa Siasatan telah diadakan bagi menilai kesemua kes yang dilaporkan.

Daripada 89 kes yang dibincangkan di mesyuarat tersebut, sebanyak 41 Kertas Siasatan diluluskan untuk dibuka. Manakala, dipersetujui sebanyak 12 kes memerlukan siasatan lanjut dan 36 kes tidak mempunyai asas yang kukuh untuk meneruskan siasatan.

Lanjutan daripada Mesyuarat tersebut, ST juga bertanggungjawab menilai Kertas Siasatan bagi kesemua kategori kes.

INVESTIGATION

Evaluation of Investigation Papers

Investigation Papers contain information and evidence materials on the actions taken by the appointed investigating officers and are prepared based on the Enforcement, Investigation and Prosecution Manual.

Investigation Papers received are studied and reviewed according to prescribed format and methods, and need to be completed before they can be brought to the next stage for prosecution or compound.

Before an Investigation Paper is opened, the Investigation Committee will first evaluate the initial cases, such as electrical accidents (fatal and non-fatal), gas accidents, fires, power outages and others, that were reported to the Commission.

At this meeting, the technical aspects of the case will be highlighted and the decision on whether further investigations should be carried out or an Investigation Paper should be opened will be made. Generally, an Investigation Paper will be opened when there is strong evidence that an offence has been committed under the Acts and Regulations.

In 2020, a total of 26 Investigation Committee meetings were held to evaluate all reported cases.

From the 89 cases assessed at the meeting, a total of 41 Investigation Papers were opened, 12 cases required further investigation while 36 cases had no solid grounds for investigation.

In addition, the Commission is also responsible for evaluating the Investigation Papers under all case categories.

Pada 2020, sebanyak 72 Kertas Siasatan yang telah dibuka.

In 2020, a total of 72 Investigation Papers were opened.

Kategori Kes Yang Disiasat dan Dibuka Kertas Siasatan, 2019 & 2020
Categories of Cases Investigated and Investigation Papers Opened, 2019 & 2020

Kategori *Category*	**2019**	**2020**
Kemalangan Elektrik Maut *Fatal Electrical Accidents*	**11**	**14**
Kemalangan Elektrik Tidak Maut *Non-Fatal Electrical Accidents*	**18**	**14**
Kemalangan Maut (Haiwan) *Fatal Accidents (Animal)*	**2**	**4**
Kemalangan Maut Bukan Elektrik *Non-Electrical Fatal Accidents*	**0**	**1**
Kemalangan Tidak Maut Bukan Elektrik *Non-Fatal Non-Electrical Accidents*	**4**	**2**
Kes Kebakaran Elektrik *Electrical Fire Cases*	**0**	**2**
Gangguan Bekalan Elektrik *Electrical Supply Interruptions*	**7**	**4**
Aduan kepada Unit Hal Ehwal Pengguna (UHEP) *Complaints made to the Consumer Affairs Unit (UHEP)*	**40**	**0**
Kemalangan Gas Maut *Fatal Gas Accidents*	**1**	**0**
Operasi Curi Elektrik *Electrical Theft Operations*	**12**	**13**
Operasi Kelengkapan Elektrik *Electrical Equipment Operations*	**16**	**0**
Lesen (Awam/Persendirian) *Licences (Public/Private)*	**0**	**16**
Operasi Pepasangan Gas *Gas Installation Operations*	**0**	**2**
Jumlah *Total*	**111**	**72**

Secara umumnya, jumlah Kertas Siasatan yang dibuka pada 2020 telah berkurangan sebanyak 35% berbanding 2019. Namun kenaikan jumlah yang mendadak adalah bagi kategori lesen di mana terdapat 16 kes lesen pengagihan elektrik yang dikeluarkan sepuluh (10) tahun lalu disiasat disebabkan beroperasi dalam keadaan tempoh lesen yang telah tamat dan tidak sah.

The number of Investigation Papers opened in 2020 decreased by 35% compared to 2019. However, the licence category experienced a significant increase in the number of Investigation Papers opened due to 16 cases involving electricity distribution licensees who were investigated for operating with expired and invalid licences issued ten (10) years ago.

PENDAKWAAN

ST juga mendakwa pesalah undang-undang dengan memfailkan pertuduhan di mahkamah dan mengkompaun kesalahan, di mana cadangan terhadap Kertas Siasatan yang telah lengkap akan dikemukakan kepada pihak Timbalan Pendakwa Raya untuk tindakan yang sewajarnya. Kes yang mendapat Izin Untuk Mendakwa dari Timbalan Pendakwa Raya akan difailkan di mahkamah dan pendakwaan akan dijalankan terhadap pesalah undang-undang. Selain itu, kes yang mendapat Izin Untuk Mengkompaun dari Timbalan Pendakwa Raya juga akan dikeluarkan kompaun terhadap mereka yang didapati melanggar peruntukan undang-undang yang telah ditetapkan.

ST juga turut meneliti kes-kes siasatan yang melibatkan kesalahan yang dilakukan oleh pemegang Perakuan Kekompetenan (orang kompeten) dan mengambil tindakan yang sewajarnya seperti membatalkan secara mutlak, menggantung untuk sesuatu tempoh atau mengendors Perakuan Kekompetenan itu sekiranya terdapat kesalahan yang telah dilakukan.

PROSECUTION

The Commission submits completed Investigation Papers to the Deputy Public Prosecutor for recommendations on further action. Charges will be filed in court and offenders prosecuted accordingly when the Deputy Public Prosecutor grants the Consent to Prosecute. A compound will be issued to violators if the case receives the Consent to Compound from the Deputy Public Prosecutor.

The Commission also reviews investigation cases involving offences committed by Certificate of Competency holders (competent person) and takes the appropriate action including absolute revocation, temporary suspension or endorsement of the Certificate of Competency.

12 **Kertas Siasatan dikemukakan kepada Timbalan Pendakwa Raya**
Investigation Papers submitted to the Deputy Public Prosecutor

PERTUDUHAN DI MAHKAMAH
CHARGED IN COURT

35 **Kertas Siasatan dikemukakan kepada Timbalan Pendakwa Raya**
Investigation Papers submitted to the Deputy Public Prosecutor

KOMPAUN
COMPOUND

Syarikat yang Dikenakan Denda, 2020
Companies Fined, 2020

Nama Syarikat *Company Name*	**Kesalahan** *Offence*	**Keputusan** *Result*
CHB Ice Sdn. Bhd.	Gagal melantik orang kompeten (subseksyen 23(1) ABE 1990). *Failure to appoint a competent person (subsection 23 (1) ESA 1990)*	Orang Kena Saman (OKS) mengaku salah pada 10 Januari 2020. Mahkamah Majistret Bukit Mertajam, Pulau Pinang menjatuhkan hukuman denda RM6,000. Denda dibayar. *Defendant pleaded guilty on 20 January, 2020. The Magistrate Court, Bukit Mertajam, Penang, imposed a fine of RM6,000. Fine paid.*
WRP Asia Pacific Sdn. Bhd.	Penggunaan elektrik secara curang (subseksyen 37(3) ABE 1990) *Dishonest use of electricity (subsection 37 (3) ESA 1990)*	Kes sedang dibicarakan di Mahkamah Sesyen, Sepang, Selangor. *The case is on trial at the Sessions Court, Sepang, Selangor.*

Keputusan Jawatankuasa Penyiasatan Kesalahan Pemegang Perakuan Kekompetenan

Investigation Committee Decisions on Certificate of Competency Holder Related Offences

Kesalahan *Offence*	**Keputusan** *Result*
Kes kemalangan elektrik maut di Pencawang Masuk Utama (PMU) 132/11 kV Tenom Town, Tenom, Sabah. *Fatal electrical accident case at Transmission Main Intake (PMU) 132/11 kV at Tenom Town, Tenom, Sabah.*	• Perakuan Kekompetenan Sabdin bin Kadir, Penjaga Jentera B4 33 kV, No. Perakuan PJ-T-8-H-0017-2001 digantung selama 3 (tiga) tahun kerana gagal mematuhi subseksyen 37(2) Akta Bekalan Elektrik 1990 dan subperaturan 112(2) Peraturan-Peraturan Elektrik 1994 berkuatkuasa dari 12 Mac 2020. *The Certificate of Competency belonging to Sabdin bin Kadir, B4 33 kV Chargeman, Certificate No. PJ-T-8-H-0017-2001 was suspended for 3 (three) years for failing to comply with subsection 37(2) of the Electricity Supply Act 1990 and sub-regulation 112(2) of the Electricity Regulations 1994, effective from 12 March 2020.*
Kes kemalangan elektrik tidak maut di Bilik Suis Gear, *Main Intake Substation,* Petronas Gas Berhad (PGB) Terengganu. *Non-fatal electrical accident case at Switchgear Room, Main Intake Substation, Petronas Gas Berhad (PGB), Terengganu.*	• Perakuan Kekompetenan Suhailan bin Saidi, Penjaga Jentera B4 11 kV, No. Perakuan PJ-T-8-B-0009-2018 digantung selama enam (6) bulan kerana gagal mematuhi subperaturan 112(2) Peraturan-Peraturan Elektrik 1994 berkuatkuasa dari 13 Oktober 2020. *The Certificate of Competency belonging to Suhailan bin Saidi, B4 11 kV Chargeman, Certificate No. PJ-T-8-B-0009-2018 was suspended for six (6) months for failing to comply with sub-regulation 112(2) of the Electricity Regulations 1994, effective from 13 October 2020.* • Perakuan Kekompetenan Izwand bin Jusoh, Penjaga Jentera B0 11 kV, No. Perakuan PJ-T-6-B-0041-2016 digantung selama enam (6) bulan kerana gagal mematuhi subperaturan 112(2) Peraturan-Peraturan Elektrik 1994 berkuatkuasa dari 13 Oktober 2020. *The Certificate of Competency belonging to Izwand bin Jusoh, B0 11 kV Chargeman, Certificate No. PJ-T-6-B-0041-2016 was suspended for six (6) months for failing to comply with sub-regulation 112(2) of the Electricity Regulations 1994, effective from 13 October 2020.* • Perakuan Kekompetenan Muhammad Jafri bin Ismail, Penjaga Jentera B0 11 kV, No. Perakuan PJ-T-6-B-0136-2012 digantung selama satu (1) tahun kerana gagal mematuhi subperaturan 112(2) dan 63(1) Peraturan-Peraturan Elektrik 1994 berkuatkuasa dari 13 Oktober 2020. *The Certificate of Competence belonging to Muhammad Jafri bin Ismail, B0 11 kV Chargeman, Certificate No. PJ-T-6-B-0136-2012 is suspended for one (1) year for failing to comply with sub-regulations 112(2) and 63(1) of the Electricity Regulations 1994, effective from 13 October 2020.*

Pada 2020, sebanyak 47 kompaun telah dikeluarkan kepada TNB, syarikat, pemegang lesen dan individu yang telah melanggar peruntukan undang-undang dan jumlah kompaun yang telah dibayar adalah sebanyak RM3,618,700.00.

In 2020, a total of 47 compounds were issued to TNB, companies, licensees and individuals in violation with the provisions of the law with the total compound paid amounting to RM3,618,700.00.

Kompaun yang Telah Dikenakan, 2020
Compounds Issued, 2020

TNB	Industri *Industry*
Sebanyak 36 kompaun kesalahan berjumlah RM100,000.00 setiap satu telah dikeluarkan terhadap TNB kerana gagal mematuhi seksyen 50E ABE 1990. Jumlah kompaun yang telah dibayar adalah sebanyak RM3,600,000.00. *A total of 36 compounds amounting to RM100,000.00 each were issued against TNB for failure to comply with section 50E ESA 1990. The total compound paid was RM3,600,000.00.*	Sebanyak 11 kompaun lagi telah dibayar oleh syarikat/pemegang lesen/individu yang didapati telah melanggar peruntukan undang-undang: *A total of 11 compounds were paid by companies/licensees/individuals found to be in violation with the provisions of the law:* • All Cosmos Industries Sdn. Bhd. sebanyak RM 2,500.00 kerana gagal mematuhi subperaturan 36(3) PPE 1994. *All Cosmos Industries Sdn. Bhd. compounded RM 2,500.00 for failure to comply with sub-regulation 36(3) ER 1994.* • Ayee Sdn. Bhd. sebanyak RM 2,500.00 kerana gagal mematuhi subperaturan 75(1) PPE 1994. *Ayee Sdn. Bhd. compounded RM 2,500.00 for failure to comply with sub-regulation 75(1) ER 1994.* • Malpakat Group Sdn. Bhd. sebanyak RM 1,500.00 kerana gagal mematuhi subperaturan 112(2) PPE 1994 dan RM1,000.00 kerana gagal mematuhi subperaturan 36(3) PPE 1994. *Malpakat Group Sdn. Bhd. compounded RM 1,500.00 for failure to comply with sub-regulation 112(2) ER 1994 and RM1,000.00 for failure to comply with sub-regulation 36(3) ER 1994.* • Mohd Faizal Supaat sebanyak RM500.00 kerana gagal mematuhi subperaturan 112(2) PPE 1994. *Mohd Faizal Supaat compounded RM500.00 for failure to comply with sub-regulation 112(2) ER 1994.* • TNB sebanyak RM2,500.00 setiap satu bagi tiga (3) kesalahan kerana gagal mematuhi subperaturan 112(2) PPE 1994. *TNB compounded RM2,500.00 each for three (3) offences for failure to comply with sub-regulation 112(2) ER 1994.* • Dewan Bandaraya Kuala Lumpur (DBKL) sebanyak RM2,500.00 kerana gagal mematuhi subperaturan 110(1) PPE 1994. *Kuala Lumpur City Hall (DBKL) compounded RM2,500.00 for failure to comply with sub-regulation 110(1) ER 1994.* • Hamzah Abas sebanyak RM500.00 kerana gagal mematuhi subperaturan 15(1) PPE 1994. *Hamzah Abas compounded RM500.00 for failure to comply with sub-regulation 15(1) ER 1994.* • Mohd Shahrul Ikhwan Hasan sebanyak RM200.00 kerana gagal mematuhi subseksyen 37(12)(a) ABE 1990. *Mohd Shahrul Ikhwan Hasan compounded RM200.00 for failure to comply with subsection 37(12)(a) of ESA 1990.*

Inisiatif dan tindakan-tindakan yang telah diambil terhadap pihak-pihak yang melakukan kesalahan di bawah peruntukan undang-undang sedia ada ini diharapkan dapat memberikan pengajaran secara umumnya.

The actions taken against the offenders pursuant to the law serve as important reminders to all parties.

PENGUATKUASAAN PENGGUNAAN ELEKTRIK SECARA CURANG
ENFORCEMENT AGAINST THE DISHONEST USE OF ELECTRICITY

Pada 2020, sebanyak 20 operasi membanteras penggunaan elektrik secara curang, atau lebih dikenali sebagai "curi elektrik" yang melibatkan pelbagai agensi telah dilaksanakan mengikut prosidur operasi standard (SOP) dalam tempoh PKP yang dibenarkan.

In 2020, a total of 20 operations to combat the dishonest use of electricity, commonly known as electricity theft, involving various agencies were carried out. These operations were conducted in accordance with the standard operating procedures (SOP) within the permitted MCO period.

Senarai Operasi Penggunaan Elektrik Secara Curang, 2020
List of Operations Against Dishonest Use of Electricity, 2020

BIL *NO*	TARIKH *DATE*	TEMPAT *LOCATION*	KAEDAH KEJANGGALAN *IRREGULARITY*
1	13 Januari/*January* 2020	Bandar Kinrara, Puchong, Selangor.	Sambungan terus dari terminal *incoming* TNB dari pemilik jiran sebelah rumah. *Direct connection from TNB's incoming terminal from the house next door.*
2	11 Februari/ *February* 2020	Taman Perindustrian Kinrara, Puchong, Selangor. *Kinrara Industrial Park, Puchong, Selangor.*	Sambungan haram yang diambil dari *feeder pillar* milik TNB (LVDB TX 2 PE JLN TPK 2/8 PCHG RAYA IND PARK F5 F6) ke premis 65A. *Illegal connection from TNB-owned feeder pillar (LVDB TX 2 PE JLN TPK 2/8 PCHG RAYA IND PARK F5 F6) to premise 65A.*
3	20 Februari/ *February* 2020	Operasi Bersepadu di Tawau, Sabah. *Integrated Operation in Tawau, Sabah.*	Sambungan haram dari bekalan SESB. *Illegal connection from SESB's electricity supply.*
4	1 Julai/*July* 2020	Perumahan Paya 3, Kuantan, Pahang. *Paya 3 Housing Area, Kuantan, Pahang.*	Sambungan terus dari wayar servis kaki lima di hadapan premis. *Direct connection from the sidewalk service wire opposite the premise.*
5	8 Julai/*July* 2020	Kota Bayu Mas, Pandamar, Pelabuhan Klang, Selangor. *Kota Bayu Mas, Pandamar, Port Klang, Selangor.*	Sambungan terus dari talian servis TNB. *Direct connection from TNB's service line.*
6	8 Julai/*July* 2020	Kota Bayu Mas, Pandamar, Pelabuhan Klang, Selangor. *Kota Bayu Mas, Pandamar, Port Klang, Selangor.*	Sambungan terus dari *Isolator Box*. *Direct connection from the Isolator Box.*
7	16 Julai/*July* 2020	Taman Perindustrian Sri Pelentong, Masai, Johor. *Sri Pelentong Industrial Park, Masai, Johor.*	Tiada kes. *No case.*
8	20 Julai/*July* 2020	Operasi Bersepadu di Negeri Melaka. *Integrated Operation in Melaka.*	Sambungan haram dari bekalan TNB. *Illegal connection from TNB's electricity supply.*
9	4 Ogos/*August* 2020	Jalan Tuaran Karamunsing, Sabah.	Operasi dihentikan atas faktor keselamatan. (Tiada kes). *The operation was suspended due to safety reasons. (No case).*
10	5 Ogos/*August* 2020	Jalan Kolam Luyang, Kota Kinabalu, Sabah.	Fius *link* di dalam meter bagi fasa merah dan kuning telah diusik. *Fuse link tampering in the meter on the red and yellow phase.*

11	5 Ogos/*August* 2020	Lorong Inanam Kapital, Inanam Kapital, Kota Kinabalu, Sabah. *Inanam Kapital Lane, Inanam Kapital, Kota Kinabalu, Sabah.*	Usikan dengan melakukan *bypass* dengan cara *switching*. *Bypass tampering by way of switching.*
12	6 Ogos/*August* 2020	Jalan Keningau Kimanis, Keningau, Sabah.	Usikan *bypass* pada terminal masuk dan keluar fasa merah serta usikan pada *link* pada fasa kuning. *Bypass tampering on the red phase entry and exit terminals as well as tampering of the link on the yellow phase.*
13	6 Ogos/*August* 2020	Jalan Nabawan, Keningau, Sabah.	*Bypass* pada *armoured cable* fasa merah dengan menggunakan suis. *Bypass on the red phase armoured cable through the switch.*
14	12 Ogos/*August* 2020	Bandar Sunsuria, Sepang, Selangor. *Sunsuria City, Sepang, Selangor.*	Sambungan terus diambil dari *isolator*. *Direct connection from the isolator.*
15	12 Ogos/*August* 2020	Bandar Sunsuria, Sepang, Selangor. *Sunsuria City, Sepang, Selangor.*	Sambungan terus diambil dari *isolator* premis 19 dan premis 17. *Direct connection from the isolator of premise 19 and premise 17.*
16	28 Ogos/*August* 2020	Dua (2) premis komersial di *Horizon Hills,* Iskandar Puteri, Johor. *Two (2) commercial premises at Horizon Hills, Iskandar Puteri, Johor.*	Sambungan haram yang diambil dari kabel TNB bawah tanah yang berada di hadapan pintu masuk premis. *Illegal connection from TNB's underground cable located in front of the entrance of the premise.*
17	18 September 2020	Dua (2) premis komersial di kawasan Perniagaan Arowana, Seberang Jaya, Pulau Pinang. *Two (2) commercial premises at Arowana Business area, Seberang Jaya, Penang.*	Sambungan haram yang diambil dari wayar servis kaki lima TNB. *Illegal connection from TNB's sidewalk service wires.*
18	1 Oktober/*October* 2020	Taman Perindustrian Kinrara, Puchong, Selangor. *Kinrara Industrial Park, Puchong, Selangor.*	Sambungan haram dari *incoming cable* bawah tanah antara *feeder pillar* dan meter. *Illegal connection from an incoming underground cable between the feeder pillar and meter.*

Operasi Penguatkuasaan Penggunaan Elektrik Secara Curang di Johor
Enforcement Operations against Dishonest Use of Electricity in Johor

Operasi Penguatkuasaan Penggunaan Elektrik Secara Curang di Selangor
Enforcement Operations against Dishonest Use of Electricity in Selangor

Operasi Penguatkuasaan Penggunaan Elektrik Secara Curang di Pulau Pinang
Enforcement Operations against Dishonest Use of Electricity in Penang

Operasi Penguatkuasaan Penggunaan Elektrik Secara Curang di Sabah
Enforcement Operations against Dishonest Use of Electricity in Sabah

OPERASI MEMBANTERAS KEGIATAN PENYAMBUNGAN SECARA HARAM OLEH AKTIVITI PERLOMBONGAN *BITCOIN*

OPERATIONS TO COMBAT ILLEGAL CONNECTIONS BY BITCOIN MINING ACTIVITIES

Pada 2020, trend aktiviti kecurian elektrik oleh perlombongan *bitcoin* didapati amat berleluasa. Sehubungan dengan itu, fokus operasi pada 2020 banyak tertumpu kepada kegiatan membanteras penyambungan secara haram disebabkan peningkatan terhadap aktiviti ini. TNB juga telah melaporkan jumlah kehilangan pendapatan dengan anggaran kerugian sebanyak RM 20,000 - RM 30,000 sebulan bagi setiap premis dikenal pasti menjalankan perlombongan *bitcoin*.

Walaupun aktiviti ini dijalankan di kawasan yang terbiar dan tidak berpenghuni, ST dan TNB masih berupaya menjejak modus operandi yang dijalankan oleh pihak yang tidak bertanggungjawab ini. Kegiatan dan kaedah pemasangan penggunaan elektrik secara curang adalah merbahaya kerana kaedah pemasangan sistem pendawaian yang tidak mengikut spesifikasi boleh menyebabkan berlakunya gangguan bekalan elektrik. Ini berlaku apabila penggunaan beban elektrik yang sangat tinggi atau *overloaded* di lokasi kesalahan yang memberikan impak terhadap keseluruhan bekalan di kawasan sekitarnya. Selain itu, kesalahan ini juga boleh menjadi punca kebakaran pada pepasangan tersebut.

Due to a surge in electricity theft by bitcoin mining operators in 2020, the Commission ramped up efforts to combat illegal connections to electricity supply in these premises. TNB also reported a total loss of revenue amounting to RM20,000 to RM30,000 per month for each premise carrying out bitcoin mining.

Although these activities are usually carried out in abandoned and uninhabited areas, the Commission and TNB were still able to identify the modus operandi carried out by these irresponsible parties. The dishonest use of electricity poses a serious threat to safety as the installation of wiring systems that do not adhere to specifications could cause power outages. Unusually high electrical loads at a certain location could also potentially impact the whole supply in the surrounding area. In addition, such activities increase the risk of fire hazards.

Operasi yang dijalankan bukan sahaja melibatkan pihak utiliti, malah operasi tersebut turut sama disertai oleh agensi lain seperti PBT, Suruhanjaya Komunikasi Malaysia (SKMM), Lembaga Hasil Dalam Negeri (LHDN) dan Polis Diraja Malaysia (PDRM) serta penglibatan pihak media untuk memberi liputan dan hebahan meluas kepada orang awam. Selain siaran akhbar-akhbar tempatan dan berita TV utama, beberapa program seperti rancangan pencegahan jenayah 999 turut menyiarkan slot operasi yang dijalankan oleh ST.

Bagi setiap premis yang diserbu sepanjang 2020, dianggarkan lebih kurang 150 unit mesin-mesin *bitcoin* telah berjaya dirampas.

The joint operations were carried out by the Commission, utilities as well as other agencies such as the Local Authorities, the Malaysian Communications & Multimedia Commission (MCMC), Inland Revenue Board (IRB) and the Royal Malaysia Police (PDRM). These operations also received coverage in local newspapers, major news channels and several TV programmes such as the crime prevention programme 999.

An estimated 150 units of bitcoin machines were successfully confiscated from every premise raided in 2020.

UPDATED E-COMMERCE REGULATIONS FOR ELECTRICAL APPLIANCES

Pada 8 September 2020, seminar *Updated e-Commerce Regulations for Electrical Appliances* anjuran ST dengan kerjasama *Malaysia Digital Economy Corporation, MDEC* telah diadakan bagi menyampaikan informasi tentang perundangan dan polisi terkini dalam kaedah penjualan kelengkapan elektrik secara dalam talian kepada semua pemain industri (platform dan *merchant online*) oleh agensi Kerajaan yang berkaitan seperti Kementerian Perdagangan Dalam Negeri, Koperasi dan Kepenggunaan (KPDNKK), SKMM dan lain-lain.

Antara isu yang dibincangkan termasuk isu lambakan kelengkapan elektrik tiada label keselamatan SIRIM-ST yang banyak dijual di dalam talian atau platform *e-commerce* seperti LAZADA, Shopee, Alibaba dan lain-lain.

Seminar ini turut menekankan kepada pemain industri tentang kepentingan untuk hanya mengiklan dan menjual kelengkapan elektrik dalam talian yang mempunyai label keselamatan SIRIM-ST sahaja.

Platform dan penjual dalam talian telah mengambil maklum tanggungjawab masing-masing dan sedar tindakan penguatkuasaan akan diambil oleh pihak berkuasa yang berkenaan sekiranya ingkar dengan arahan yang diberikan.

On 8 September 2020, the Commission organised the Updated e-Commerce Regulations for Electrical Appliances seminar in collaboration with the Malaysia Digital Economy Corporation (MDEC). Its objective was to provide updates to all industry players (online platforms and merchants) on the latest legislation and policies by relevant Government agencies such as the Ministry of Domestic Trade, Cooperatives and Consumerism (MDTCC), MCMC and others, on the sale of electrical appliances online.

Among the issues discussed was the prevalence of electrical appliances being sold online or on e-commerce platforms such as LAZADA, Shopee, Alibaba and others, without the SIRIM-ST safety labels online.

The seminar also emphasised to industry players the importance of advertising and selling online electrical appliances with the SIRIM-ST safety label.

The platforms and the online sellers took note of their respective responsibilities and were made aware that enforcement actions will be taken by the relevant authorities in the event of non-compliance.

03

MEMPERKUKUHKAN KEBERTERUSAN BEKALAN DAN KEMAMPANAN TENAGA

STRENGTHENING ENERGY SECURITY AND SUSTAINABILITY

PERANCANGAN PEMBANGUNAN KAPASITI
CAPACITY DEVELOPMENT PLAN

Pada 2020, Kerajaan telah menyemak semula sasaran kapasiti tenaga boleh baharu (TBB) di Malaysia dengan meningkatkan sasaran tersebut daripada 20% ke 31% menjelang 2025, dan seterusnya menyasarkan 40% menjelang 2035. Sehubungan semakan tersebut, secara amnya, peratusan kapasiti TBB di Semenanjung telah menunjukkan peningkatan yang baik di samping penjanaan tenaga daripada sumber bahan api arang batu dan gas.

Pada penghujung 2020, secara keseluruhannya, terdapat 63 loji jana kuasa dalam sistem rangkaian di Semenanjung yang masih beroperasi, yang terdiri daripada 16 loji jana kuasa gas, lapan (8) loji jana kuasa arang batu, enam (6) loji jana kuasa hidro dan 33 projek Solar Berskala Besar (LSS). Sebanyak 12 loji LSS telah memulakan operasi komersial pada 2020, dengan beberapa lagi projek dijadualkan beroperasi dalam masa beberapa tahun akan datang.

In 2020, the Government reviewed the renewable energy (RE) capacity target in Malaysia from the initial 20% target to 31% by 2025 and 40% by 2035. In line with the new target, the percentage of RE capacity in the Peninsula showed promising growth in addition to energy generated from coal and gas fuel sources.

Overall, at the end of 2020, there were a total of 63 power plants connected to the network system in the Peninsula that are still operating, consisting of 16 gas-fired power plants, eight (8) coal-fired power plants, six (6) hydroelectric power plants and 33 Large Scale Solar (LSS) projects. A total of 12 LSS plants have commenced commercial operations in 2020, with several more projects scheduled to be operational in the next few years.

PELAN PEMBANGUNAN PENJANAAN SEMENANJUNG MALAYSIA (2020-2039)

Pada 20 Oktober 2020, Pelan Pembangunan Penjanaan Semenanjung Malaysia (2020–2039) telah diluluskan oleh Jawatankuasa Perancangan dan Pelaksanaan Pembekalan Elektrik dan Tarif (JPPPET) yang dipengerusikan oleh YB Menteri Tenaga dan Sumber Asli. Seperti tahun-tahun sebelumnya, pelan ini bertujuan memastikan bekalan yang berdaya harap dan terjamin dapat disediakan kepada pengguna pada harga yang berpatutan, di samping berupaya memenuhi aspirasi Kerajaan serta komitmen antarabangsa.

Pelan ini telah dibangunkan berdasarkan unjuran permintaan elektrik dan ekonomi negara. Kriteria perancangan bagi membangunkan pelan ini adalah:

- Mengoptimumkan tahap margin rizab.
- Mengurangkan *loss of load expectation* (LOLE) untuk memastikan penjanaan dan penghantaran adalah selaras dengan daya harap pembekalan.
- Mengurangkan skor *Herfindhal-Hirschman Index* (HHI) bagi memastikan kepelbagaian campuran bahan api dan keberterusan bekalan tenaga. HHI mengukur kepelbagaian campuran bahan api dengan konsep semakin rendah jumlahnya, semakin tinggi kepelbagaian bahan api yang dapat memastikan keberterusan bekalan tenaga.

THE PENINSULAR MALAYSIA GENERATION DEVELOPMENT PLAN (2020-2039)

On 20 October 2020, the Peninsular Malaysia Generation Development Plan (2020–2039) was approved by the Planning and Implementation Committee for Electricity Supply and Tariff (JPPPET) chaired by the YB Minister of Energy and Natural Resources. Its objective is to ensure reliable and secure energy supply at affordable prices for consumers, in line with the Government's aspirations and global commitment.

The plan was developed based on the electricity demand forecast and the nation's economic forecast. The planning criteria for the development of the plan include:

- *Optimising the reserve margin level.*
- *Reducing the loss of load expectation (LOLE) to ensure that generation and transmission are in line with supply reliability.*
- *Lowering the Herfindhal-Hirschman Index (HHI) score to ensure fuel mix diversity and energy supply security. HHI measures the diversity of fuel mix whereby the lower the score, the higher the fuel diversification and energy security.*

Pelan ini turut mengambil kira polisi dan aspirasi Kerajaan iaitu peningkatan kapasiti penjanaan TBB di Malaysia kepada sasaran 31% menjelang 2025 dan 40% menjelang 2035, ditambah pula dengan semakan definisi TBB terkini iaitu dengan kemasukan hidro berskala besar, agar seragam dengan definisi di peringkat ASEAN dan badan-badan antarabangsa lain. Selaras dengan sasaran peningkatan kapasiti penjanaan TBB itu juga, kadar kemasukan solar juga telah ditetapkan bagi memastikan kestabilan grid.

Komitmen Malaysia di *21st Conference of Parties* (COP21) untuk pengurangan intensiti pelepasan gas rumah hijau (GHG) per KDNK sebanyak 45% menjelang 2030 dengan bantuan negara maju juga termasuk dalam kriteria perancangan ini, selain ketersediaan bahan api, teknologi penjanaan dan kemajuan projek-projek talian penghantaran sedia ada.

Berdasarkan pertimbangan-pertimbangan tersebut, pelan ini berperanan menentukan campuran kapasiti, campuran bahan api dan margin rizab yang optimum bagi tempoh 19 tahun yang akan datang.

The plan also took into account Government policies and aspirations to increase RE generation capacity in Malaysia to 31% by 2025 and 40% by 2035, where the RE definition is reviewed to include large-scale hydroelectric generation which is in line with the RE definition at the ASEAN level and in other international bodies. Solar penetration level was also set to ensure grid stability while increasing the RE generation capacity as targeted.

Malaysia's commitment at the 21st Conference of Parties (COP21) to reduce its greenhouse gas (GHG) emissions intensity per GDP by 45% by 2030 with the assistance of developed countries was also included in these planning criteria, in addition to fuel availability, generation technology and the progress of ongoing transmission line projects.

Based on these considerations, the plan aims to determine the optimal capacity mix, fuel mix and reserve margin for the next 19 years.

CAMPURAN KAPASITI TERPASANG

Selaras dengan aspirasi Kerajaan untuk meningkatkan sasaran kapasiti TBB, kapasiti terpasang bagi TBB di Semenanjung dijangkakan akan bertambah daripada 17% pada 2020 kepada 26% menjelang 2025 dan seterusnya mencecah 32% menjelang 2035.

Dalam usaha untuk mencapai sasaran 26% tersebut pada 2025, sebanyak 1,178 MW kapasiti TBB perlu dibangunkan di Semenanjung bermula dari 2021. Ini merangkumi 1,098 MW kapasiti tenaga solar dan 80 MW kapasiti TBB bukan solar. Kestabilan sistem grid dijangka akan kekal terkawal dengan kemasukan tenaga solar yang berada pada paras 24% daripada jumlah permintaan puncak menjelang 2025.

Lanjutan kemasukan TBB ini, dijangkakan dalam tempoh 19 tahun yang akan datang, pengurangan ketara akan berlaku bagi penjanaan berasaskan bahan api fosil, iaitu penurunan daripada 82% pada 2020 kepada 69% pada 2039. Pengurangan terbesar adalah bagi arang batu, iaitu daripada 42% pada 2020 kepada 36% pada 2025 dan 22% menjelang 2039. Walau bagaimanapun, kedudukan gas sebagai bahan api terbersih akan terus mendominasi campuran kapasiti ini.

INSTALLED CAPACITY MIX

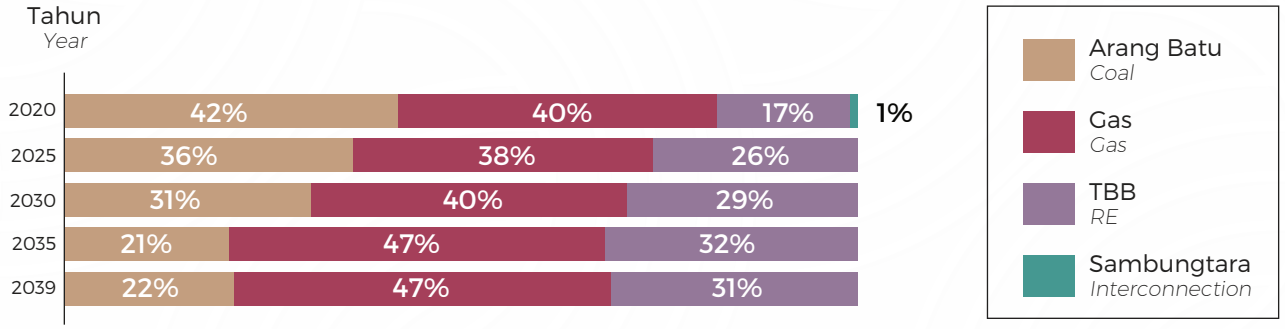
In line with the Government's aspiration to increase the RE capacity target, the installed capacity of RE in the Peninsula is expected to increase from 17% in 2020 to 26% by 2025 and reach 32% by 2035.

In order to achieve the 26% target by 2025, a total of 1,178 MW of RE capacity needs to be developed in the Peninsula starting 2021. This includes 1,098 MW of solar energy capacity and 80 MW of non-solar RE capacity. The grid system is expected to remain stable with solar energy penetration estimated to reach 24% of the total peak demand by 2025.

With the inflow of RE capacity, a significant reduction in fossil fuel-based generation is expected over the next 19 years, from 82% in 2020 to 69% in 2039. The largest reduction will be in coal, from 42% in 2020 to 36% by 2025 and 22% by 2039. However, gas, which is the cleaner fuel source, will continue to dominate the capacity mix.

Campuran Kapasiti di Semenanjung Malaysia, 2020-2039

Capacity Mix in Peninsular Malaysia, 2020-2039



CAMPURAN TENAGA

Walaupun secara puratanya gas mendominasi campuran kapasiti bagi tempoh sehingga 2039, dari segi campuran tenaga pula, arang batu mendahului penjanaan bahan api yang lain disebabkan unjuran harganya yang lebih rendah. Disebabkan faktor tersebut, menjelang 2030, campuran untuk arang batu dijangka akan mencecah sebanyak 51%, berbanding gas pada 35% dan TBB pada 14%.

Walau bagaimanapun, campuran arang batu dijangka akan menunjukkan trend yang menurun dalam tempoh sepuluh (10) tahun yang seterusnya, berikutan penurunan kapasiti terpasang loji jana kuasa arang batu, dengan gas dijangkakan akan mendominasi campuran tenaga iaitu sebanyak 58%, diikuti dengan arang batu pada 29% dan TBB pada 13% pada 2039.

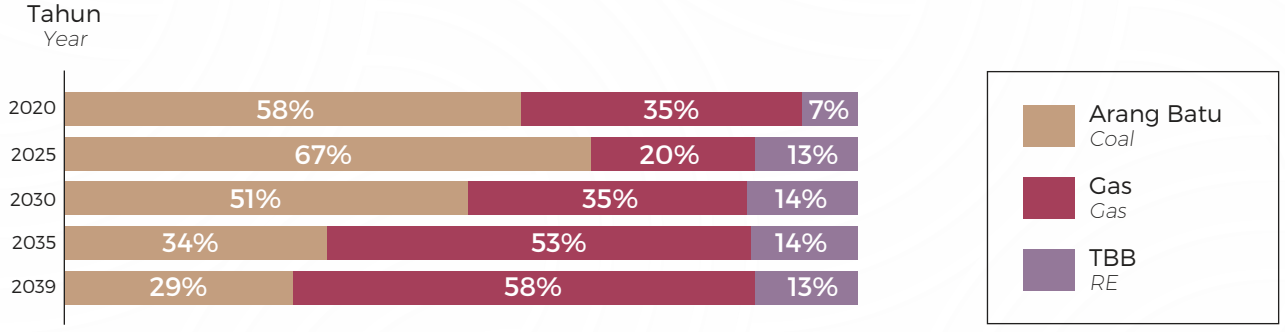
ENERGY MIX

Although, on average, gas dominates the capacity mix for the period up to 2039, coal is at the forefront in terms of energy mix compared to other fuels due to its lower forecasted price. Owing to these factors, coal's contribution is expected to reach 51% by 2030, compared to gas at 35% and RE at 14%.

However, coal is expected to display a downward trend over the next ten (10) years after 2020, as a result of the decline in installed capacity of coal-fired power plants, with gas expected to dominate the energy mix at 58%, followed by coal at 29% and RE at 13% by 2039.

Campuran Tenaga di Semenanjung Malaysia, 2020-2039

Energy Mix in Peninsular Malaysia, 2020-2039



MARGIN RIZAB

Jumlah kapasiti terpasang di Semenanjung telah berkurangan sebanyak 1,013 MW dengan penamatan operasi di loji Powertek Berhad (434 MW) dan Stesen Jana Kuasa Sultan Ismail, Paka (257 MW) pada 31 Disember 2019 serta di Pahlawan Power (322 MW) pada 5 Ogos 2020.

RESERVE MARGIN

The total installed capacity in the Peninsula declined by 1,013 MW with the decommissioning of the Powertek Berhad plant (434 MW) and Sultan Ismail Power Station, Paka (257 MW) on 31 December 2019 as well as Pahlawan Power (322 MW) on 5 August 2020.

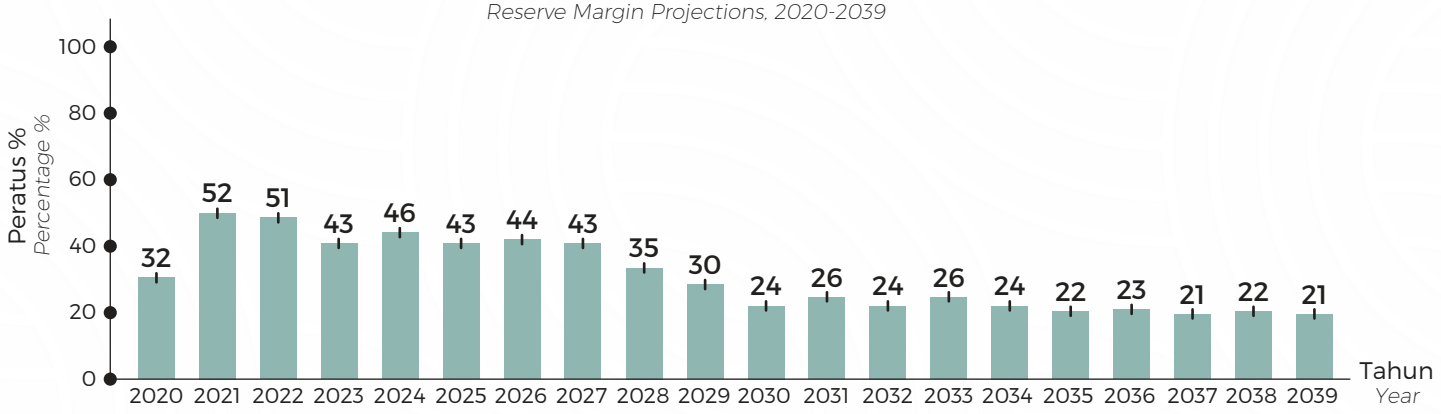
Namun, pada masa yang sama, sistem grid pula menerima penambahan kapasiti berjumlah 498.47 MW daripada sambungtara Lao PDR-Thailand-Malaysia (LTM, 300 MW), serta penjanaan pepasangan baharu iaitu daripada projek LSS (198.47 MW), yang menjadikan jumlah keseluruhan di Semenanjung sebanyak 25,257 MW. Dengan rekod permintaan puncak sebanyak 18,808 MW, margin rizab pada 31 Disember 2020 adalah berada pada tahap 32%.

Tahun 2021 akan menyaksikan peningkatan ketara pada margin rizab iaitu sehingga 52%, disebabkan mula tugas loji-loji seperti *Southern Power Generation* (1,440 MW) dan *Edra Energy* (2,242 MW). Namun, margin rizab dijangka akan menurun ke lingkungan 20% semula mulai 2030 berikutan penamatan loji jana kuasa sedia ada selaras Pelan Pembangunan Penjanaan yang telah diluluskan JPPPET dan peningkatan kepada permintaan puncak.

The grid system also received an additional capacity of 498.47 MW from the Lao PDR-Thailand-Malaysia interconnection (LTM, 300 MW), as well as generation from new installations via the LSS project (198.47 MW), bringing the total in the Peninsula to 25,257 MW. With a record peak demand of 18,808 MW, the reserve margin as of 31 December 2020 stood at 32%.

The year 2021 will witness a significant increase in the reserve margin of up to 52%, contributed by the commissioning of power plants such as Southern Power Generation (1,440 MW) and Edra Energy (2,242 MW). However, the reserve margin is expected to decline to around 20% starting 2030 following the expiry of existing power plants in line with the Generation Development Plan as approved by JPPPET as well as the increase in the peak demand.

Unjuran Margin Rizab, 2020-2039
Reserve Margin Projections, 2020-2039



Di Sabah pula, trend untuk margin rizab telah menunjukkan penurunan dari tahun ke tahun. Sehingga penghujung 2020, margin rizab yang telah direkodkan adalah pada tahap 19% iaitu 4% lebih rendah berbanding 2019. Peratusan ini adalah berdasarkan senario di mana permintaan puncak sebanyak 987 MW direkodkan pada 25 Ogos 2020.

Selain daripada prestasi yang kurang baik oleh stesen-stesen jana kuasa sedia ada, terdapat juga kekangan kapasiti penjanaan daripada projek-projek yang mengalami kelewatan yang turut menyumbang kepada tahap margin rizab di bawah paras optimum 30%. Dalam pengiraan ini, kapasiti boleh harap adalah tidak termasuk pengoperasian semula SJ Serudong dan SJ Libaran, *Relocation Melawa* 18 MW, *Rehabilitation Tawau* 10 MW, *One River* 13 MW dan LSS1 dan LSS2 yang telah mengalami kelewatan sehingga 2021.

In Sabah, the reserve margin has shown a declining trend from year to year. Until the end of 2020, the reserve margin recorded stood at 19% which is 4% lower than 2019. This percentage was based on the scenario where the peak demand of 987 MW was recorded on 25 August 2020.

Apart from poor performance by the existing power stations, there were also generation capacity constraints from delayed projects which contributed to the reserve margin being below the optimum level of 30%. Dependable capacity within this calculation does not include the re-operation of SJ Serudong and SJ Libaran, the Relocation of Melawa 18 MW, the Rehabilitation of Tawau 10 MW, One River 13 MW as well as LSS1 and LSS2 which experienced delays up until 2021.

PROJEK-PROJEK PEMBANGUNAN PEMBEKALAN TENAGA BERIMPAK TINGGI

Bagi menjamin keberterusan bekalan tenaga dan memastikan unjuran permintaan pada masa hadapan dapat dipenuhi, beberapa projek berimpak tinggi yang melibatkan pembangunan penjanaan dan penghantaran elektrik telah dikenalpasti.

Di Semenanjung, sebanyak tiga (3) projek penjanaan dan tiga (3) projek penghantaran elektrik telah diklasifikasikan sebagai kritikal, di mana pelaksanaannya sedang dipantau rapi oleh ST agar mengikut tarikh mula tugas yang telah ditetapkan.

HIGH IMPACT ENERGY SUPPLY DEVELOPMENT PROJECTS

In the interest of energy supply security and to ensure that future demand forecasts are met, several high-impact projects involving the development of electricity generation and transmission infrastructures were identified.

In the Peninsula, a total of three (3) electricity generation projects and three (3) electricity transmission projects were classified as critical, with their implementation closely monitored by the Commission in order to meet the set commissioning dates.

Projek Penjanaan di Semenanjung Malaysia
Generation Projects in Peninsular Malaysia

Projek / *Project*	**Lokasi /** *Location*	**Bahan Api /** *Fuel*	**Kapasiti /** *Capacity*
Southern Power Generation Sdn. Bhd.	Johor	Gas	**1,440 MW**
Edra Energy Sdn. Bhd.	Melaka	Gas	**2,242 MW**
Pulau Indah Power Plant Sdn. Bhd.	Selangor	Gas	**1,200 MW**

Pembangunan projek-projek penjanaan yang komited tersebut adalah selaras dengan Pelan Pembangunan Penjanaan Semenanjung Malaysia 2020-2039 yang telah diluluskan di dalam Mesyuarat JPPPET.

The development of the committed generation projects above are in line with the Peninsular Malaysia Generation Development Plan 2020-2039 as approved in the JPPPET Meeting.

Projek Talian Penghantaran di Semenanjung Malaysia
Transmission Line Projects in Peninsular Malaysia

Projek / *Project*	**Lokasi /** *Location*
500 kV OHL Ayer Tawar – Bentong South	Perak, Selangor dan Pahang / *Perak, Selangor and Pahang*
500 kV OHL Bentong South - Lenggeng	Pahang, Selangor dan Negeri Sembilan / *Pahang, Selangor and Negeri Sembilan*
500 kV OHL Lenggeng – Yong Peng East	Negeri Sembilan dan Johor / *Negeri Sembilan and Johor*

Projek-projek penghantaran yang disenaraikan merupakan sebahagian daripada tulang belakang 500 kV yang kini sedang dalam proses pembinaan dari Gurun di utara ke Pasir Gudang di selatan. Projek-projek ini bertujuan memudahkan penyaluran tenaga secara pukal antara kawasan bagi memenuhi keperluan permintaan yang berpusat di Kawasan Tengah.

The transmission projects listed are part of the 500 kV backbone that is currently under construction from Gurun in the north to Pasir Gudang in the south. These projects aim to facilitate the inter-area bulk energy transfer to meet demand in the Central Region.

Berikutan penularan pandemik Covid-19 yang melanda negara dan penguatkuasaan Perintah Kawalan Pergerakan (PKP) bermula 2020, pelaksanaan projek-projek penjanaan dan penghantaran berimpak tinggi telah terkesan dan memberi impak terhadap jangkaan mula tugas yang telah ditetapkan.

Di Sabah pula, Kementerian melalui JPPPET, telah melaksanakan perancangan jangka panjang untuk memenuhi keperluan permintaan tenaga elektrik bagi negeri tersebut. Pelan perancangan yang dibangunkan merangkumi penilaian unjuran permintaan, teknologi penjanaan dan kecukupan bahan api dengan mengambil pendekatan *least cost options*, pengukuhan infrastruktur talian penghantaran dan pilihan penjanaan baharu.

Dana sejumlah RM2.3 bilion telah diperuntukkan di bawah Rancangan Malaysia ke-10 (RMK-10) dan ke-11 (RMK-11) bagi pelaksanaan projek pengukuhan rangkaian oleh Sabah Electricity Sdn. Bhd. (SESB) dan Pasukan Projek Khas Bekalan Elektrik Sabah (PPKBES). Ini termasuk projek menaik taraf talian penghantaran 132 kV kepada 275 kV dari Segaliud ke Dam Road bagi meningkatkan kapasiti penyaluran elektrik dari Pantai Barat ke Pantai Timur Sabah daripada 216 MW kepada 400 MW. Projek ini dijangkakan akan siap mula beroperasi sepenuhnya pada 2022.

Following the outbreak of the Covid-19 pandemic and the enforcement of the Movement Control Order (MCO) in 2020, the implementation of high-impact generation and transmission projects was affected, impacting the expected commissioning dates.

In Sabah, the Ministry through JPPPET implemented long-term plans to meet the state's electricity demand. The plan includes an assessment of demand forecasts, generation technology and fuel adequacy by taking the least cost options approach, the strengthening of transmission line infrastructure and new generation options.

A total of RM2.3 billion was allocated under the 10th Malaysia Plan (10MP) and 11th Malaysia Plan (11MP) for the implementation of network strengthening projects by Sabah Electricity Sdn. Bhd. (SESB) and the Sabah Electricity Supply Special Project Team (PPKBES). This includes the 132 kV to 275 kV transmission line upgrading project from Segaliud to Dam Road to increase the electricity transmission capacity from 216 MW to 400 MW from the West Coast to the East Coast of Sabah. The project is expected to be fully operational in 2022.

Projek Penjanaan di Sabah
Generation Projects in Sabah

Projek / *Project*	**Lokasi /** *Location*	**Bahan Api /** *Fuel*	**Kapasiti /** *Capacity*
Penempatan semula GT Melawa *Relocation of GT Melawa*	Sandakan	Diesel	**18 MW**
Rehabilitasi SJ Tawau *Rehabilitation of SJ Tawau*	Tawau	Diesel	**10 MW**

Projek Talian Penghantaran di Sabah
Transmission Line Projects in Sabah

Projek / *Project*
Talian Baharu 132 kV (Sandakan – Elopura – Seguntor) *New Line 132 kV (Sandakan – Elopura – Seguntor)*
132 kV PMU Apas *132 kV PMU Apas*
275 kV Kimanis - Mengalong *275 kV Kimanis - Mengalong*
PMU & PPU Bukit Nenas *PMU & PPU Bukit Nenas*
Menaiktaraf 275 kV Segaliud – Dam Road *Upgrading of 275 kV Segaliud – Dam Road*
Sambungtara Sabah dan Sarawak 275 kV Mengalong - Lawas *Sabah and Sarawak 275 kV Mengalong - Lawas Interconnection*

Pelaksanaan projek-projek penjanaan dan talian penghantaran pada sepanjang 2020 telah tersasar dari tarikh jangkaan siap projek, di mana kelewatan pelaksanaan projek-projek tersebut adalah berpunca daripada situasi penularan pandemik Covid-19. Situasi yang tidak dijangka ini telah mewujudkan halangan baharu kepada aktiviti perolehan dan pembinaan, iaitu larangan kemasukan pakar dan pekerja mahir dari negara zon merah, pengilang dari negara luar yang turut dikenakan *lockdown*, pergerakan kapal pengangkut yang dihadkan serta Perintah Kawalan Pergerakan Diperketatkan (PKPD) di kawasan zon merah di negeri Sabah.

The completion of generation and transmission line projects throughout 2020 were delayed due to the Covid-19 pandemic outbreak which created new barriers to procurement and construction activities. Some of which included entry ban on experts and skilled workers from red zone countries, manufacturers from foreign countries who were also subjected to the lockdown, restrictions to movement of shipping vessels as well as the Enhanced Movement Control Order (EMCO) implementation in Sabah's red zone area.

MODEL *DIGSILENT* SISTEM PEMBEKALAN ELEKTRIK DI SABAH

Digsilent PowerFactory merupakan salah satu perisian aplikasi analisis sistem kuasa yang digunakan bagi menganalisa sistem penjanaan, talian penghantaran dan pengagihan. ST merancang untuk menggunakan semula perisian *Digsilent* sedia ada bagi membantu analisa urusan perancangan kapasiti dan infrastruktur di Sabah.

Pembangunan model *Digsilent* dilaksanakan dengan mengemaskini modul dan data *Power System Simulator for Engineering* (PSSE) bagi tujuan pemantauan projek-projek pembangunan sedia ada, dan juga perancangan sistem talian penghantaran dan pengagihan di Sabah. Model ini juga akan digunakan bagi menjalankan kajian-kajian sistem kuasa yang dirancang untuk pembangunan infrastruktur dengan lebih efektif dan berkesan.

DIGSILENT SYSTEM MODEL FOR THE ELECTRICITY SUPPLY IN SABAH

Digsilent PowerFactory is one of the power system analysis application software used to analyse generation systems as well as transmission and distribution lines. The Commission plans to utilise the existing Digsilent software to assist in the analysis of capacity and infrastructure planning in Sabah.

The Digsilent model was implemented by updating the Power System Simulator for Engineering (PSSE) modules and data to monitor existing development projects as well as the planning of transmission and distribution line systems in Sabah. This model will also be used to conduct studies on power systems for more effective and efficient infrastructure development.

PERKEMBANGAN TENAGA BOLEH BAHARU (TBB)
DEVELOPMENT OF RENEWABLE ENERGY (RE)

PEMANTAUAN PELAKSANAAN PROJEK LSS DI SEMENANJUNG

Aktiviti pemantauan pelaksanaan projek merupakan komponen penting bagi memastikan projek-projek LSS yang telah dianugerahkan akan bermula tugas dalam masa yang telah ditetapkan. Menjelang 2019 dan 2020, sebanyak 35 projek daripada inisiatif Pusingan Pembidaan Kedua Projek Solar Berskala Besar (LSS2) adalah dijangkakan untuk beroperasi. Dengan jumlah kapasiti sebanyak 522.44 MW, 27 daripada jumlah projek tersebut adalah di Semenanjung, manakala lapan (8) projek adalah di Sabah.

MONITORING THE IMPLEMENTATION OF LSS PROJECTS IN THE PENINSULA

Project implementation monitoring activities are important to ensure that awarded LSS projects commence within the stipulated time. As of 2019 and 2020, a total of 35 projects from the Second Large Scale Solar Bidding Cycle (LSS2) were expected to be operational. With a total capacity of 522.44 MW, 27 projects are based in the Peninsula, while the remaining eight (8) projects are in Sabah.

Sehingga 2020, daripada 27 projek di Semenanjung tersebut, sebanyak 15 projek iaitu bersamaan dengan 52% telah berjaya memulakan operasi komersialnya (*Commercial Operation Date* - COD). Projek-projek yang selebihnya kini mengalami kelewatan disebabkan oleh kemajuan yang perlahan dalam mencapai *Financial Close*, hal-hal pemerolehan tanah, serta isu-isu berkaitan kontraktor. Selain itu, pelaksanaan PKP pada Mac 2020 juga merupakan faktor dalam kelewatan penyiapan projek. Walau bagaimanapun, ST akan terus memantau dan memastikan projek-projek ini dapat bermula tugas dalam kadar yang segera.

Bagi pelaksanaan inisiatif Pusingan Pembidaan Ketiga Projek Solar Berskala Besar (LSS3) pula, lima (5) projek dengan jumlah kapasiti sebanyak 490.88 MW telah dianugerahkan dan dijangka akan mula beroperasi pada 2022.

Secara keseluruhannya, kemasukan TBB di Semenanjung kini adalah pada kadar 15.72% iaitu bersamaan dengan 4,429.88 MW.

In 2020, out of the 27 projects in the Peninsula, a total of 15 or 52% of the projects had successfully commenced their Commercial Operation Dates (COD). The remaining projects are currently experiencing delays due to slow progress in achieving Financial Close, land acquisition and contractor-related issues. In addition, the implementation of the MCO in March 2020 was also a factor which delayed project completion. However, the Commission is currently closely monitoring the projects to ensure their immediate commissioning.

For the implementation of the Third Large Scale Solar Bidding Cycle (LSS3), five (5) projects with a total capacity of 490.88 MW were awarded and are expected to commence operations in 2022.

Overall, the current inflow rate of RE capacity in the Peninsula stands at 15.72%, which is equivalent to 4,429.88 MW.

RUNDINGAN LSS SABAH DAN PEMUKTAMADAN TERMA PERJANJIAN PEMBELIAN TENAGA (PPA) SESB

ST juga telah dipertanggungjawabkan untuk menguruskan program pembidaan terbuka secara kompetitif bagi kapasiti penjanaan elektrik berasaskan solar PV di Sabah. Sehingga kini, ST telah melaksanakan dua (2) proses pembidaan secara terbuka bagi pembangunan loji jana kuasa LSS untuk dimula tugas dari 2017 sehingga 2020 di negeri tersebut.

Bagi inisiatif Pusingan Pembidaan Pertama Projek Solar Berskala Besar (LSS1), tiga (3) pembida telah disenarai pendek dengan kapasiti kumulatif sebanyak 16.9 MW, manakala menerusi LSS2 pula, sepuluh (10) pembida telah disenarai pendek dengan kapasiti kumulatif sebanyak 50.6 MW. Daripada 13 pembida tersebut, dua (2) pembida telah menarik diri daripada meneruskan projek ini.

Projek-projek LSS di Sabah telah menghadapi masalah pelaksanaan sejak 2017 berikutan isu kos pembayaran tenaga bagi projek-projek tersebut. Namun, selaras dengan pelaksanaan Kawal Selia Berasaskan Insentif (IBR) secara percubaan yang tentatif bermula 1 September 2020 sehingga 31 Disember 2020, SESB telah membuat keputusan untuk meneruskan pelaksanaan LSS1 dan LSS2 dengan jumlah kumulatif sebanyak 63.9 MW.

LSS SABAH NEGOTIATIONS AND FINALISATION OF SESB'S POWER PURCHASE AGREEMENT (PPA) TERMS

The Commission was also tasked with managing the competitive open bidding programme for solar PV-based electricity generation capacity in Sabah. To date, the Commission had implemented two (2) open bidding processes for the development of LSS power plants for commissioning from 2017 to 2020 in the state.

For the First Large Scale Solar Bidding Cycle (LSS1) project, three (3) bidders were shortlisted with a cumulative capacity of 16.9 MW, while during the LSS2 cycle, ten (10) bidders were shortlisted with a cumulative capacity of 50.6 MW. Out of the 13 bidders, two (2) bidders withdrew from the project.

LSS projects in Sabah have faced implementation issues since 2017 mostly with regards to energy payment costs for these projects. However, in line with the pilot implementation of the Incentive-Based Regulation (IBR) mechanism from 1 September 2020 to 31 December 2020, SESB decided to continue with the implementation of LSS1 and LSS2 with a cumulative total of 63.9 MW.

ST juga telah melaksanakan rundingan harga bersama para pemaju projek LSS dengan mengambil kira penurunan kos panel PV serta kos-kos yang telah ditanggung oleh pemaju sepanjang projek ditangguhkan. Melalui hasil rundingan tersebut, harga tarif untuk kesemua projek berjaya dikurangkan dengan purata sebanyak 23% daripada tarif asal.

Buat masa ini, SESB sedang memuktamadkan dokumen Perjanjian Pembelian Tenaga (PPA) di mana projek-projek LSS di Sabah dijangkakan untuk mula beroperasi selewat-lewatnya pada pertengahan 2023.

The Commission also carried out price negotiations with LSS project developers by taking into account the reduction in the cost of PV panels as well as the costs incurred by the developers throughout the project postponement. Through these negotiations, the tariff prices for all projects were successfully reduced by an average of 23% from the original tariffs.

Currently, SESB is finalising the Power Purchase Agreement (PPA) document whereby LSS projects in Sabah are expected to commence operations latest by mid-2023.

PELAKSANAAN KERANGKA KERJA KAWAL SELIA AKSES PIHAK KETIGA (TPA)
IMPLEMENTATION OF THE THIRD-PARTY ACCESS (TPA) REGULATORY FRAMEWORK

KELULUSAN DOKUMEN *ACCESS ARRANGEMENT* (AA) BAGI TALIAN PAIP PENGAGIHAN *GAS MALAYSIA DISTRIBUTION* (GMD)

Dokumen *Access Arrangement* (AA) merupakan dokumen yang perlu disediakan oleh setiap pemegang lesen kemudahan gas merangkumi tatacara dan set peraturan untuk mengakses talian paip pengagihan gas. Set peraturan di dalam AA adalah terpakai kepada semua pemegang lesen pengiriman gas bagi memastikan ianya adil dan saksama kepada semua pemegang lesen pengiriman. Peraturan ini bertujuan memastikan persekitaran yang lebih kompetitif dan berdaya saing dapat dihasilkan.

AA juga merupakan *live document* yang boleh dipinda dari semasa ke semasa mengikut kesesuaiannya berdasarkan perkembangan industri gas di Malaysia. Apa-apa pindaan yang dilakukan perlu mendapat kelulusan ST seperti keperluan perenggan 2.2: *Third Party Access Code for Malaysian Distribution Pipelines.*

Terdapat lapan (8) elemen penting yang telah dimuktamadkan di dalam dokumen AA iaitu:

- Akses
- Pemeteran
- Komunikasi
- Tariff dan Caj
- Sambungan ke Rangkaian Perpaipan
- Peruntukan Kapasiti
- Kualiti Gas
- Perkhidmatan Sistem Pengagihan Gas

APPROVAL OF ACCESS ARRANGEMENT (AA) DOCUMENT FOR GAS MALAYSIA DISTRIBUTION (GMD) PIPELINE

The Access Arrangement (AA) is a document that must be prepared by each gas facility licensee covering the procedures and set of rules for accessing the gas distribution pipeline. The rules in the AA are applicable to all licensed shippers to ensure that it is fair and equitable for all licensed shippers. These rules aim to ensure that a more competitive environment can be created.

The AA is also a live document that may be amended from time to time based on new developments within the Malaysian gas industry. Any amendments made need to attain approval from the Commission as required by paragraph 2.2: Third Party Access Code for Malaysian Distribution Pipelines.

There are eight (8) important elements finalised in the AA document, namely:

- *Access*
- *Metering*
- *Communication*
- *Tariffs and Charges*
- *Connection to Pipeline Network*
- *Allocation*
- *Gas Quality*
- *Gas Distribution System Services*

Beberapa siri perbincangan bersama *Gas Malaysia Distribution* (GMD) telah dijalankan sejak 2019 bagi memuktamadkan dokumen AA ini. Penglibatan ST adalah untuk memastikan penyediaan dokumen AA ini adalah telus, tidak berat sebelah serta tiada unsur diskriminasi.

Pada Mac 2020, ST telah meluluskan dokumen AA secara keseluruhannya. Walau bagaimanapun, pihak GMD telah memohon untuk melakukan perubahan ke atas beberapa terma di dalam AA. Hal ini telah dibentangkan semula kepada ST dan dokumen AA yang terkini telah mendapat kelulusan akhir untuk diguna pakai pada 30 Jun 2020.

Dokumen AA yang telah diluluskan telah dimuat naikkan pada laman sesawang Gas Malaysia dan boleh digunakan oleh pemegang lesen pengiriman gas bagi tujuan mendapatkan akses untuk pengagihan gas kepada pengguna.

A series of discussions with Gas Malaysia Distribution (GMD) have been conducted since 2019 to finalise the AA document. The Commission's involvement was to ensure that the preparation of the AA document was transparent, impartial and free of discrimination.

In March 2020, the Commission approved the AA document in its entirety. However, GMD requested for changes to some of the terms in the AA. This was re-presented to the Commission and the latest AA document received final approval for adoption on 30 June 2020.

The approved AA document was uploaded on the Gas Malaysia website and can be used by licensed gas shippers to gain access for gas distribution to consumers.

AKSES TERBUKA PADA LNG REGASIFICATION TERMINAL (SG. UDANG) SDN. BHD. (RGTSU) DAN *PENINSULAR GAS UTILISATION* (PGU) KEPADA PIHAK KETIGA

Bagi membolehkan pelaksanaan TPA di dalam Pasaran Gas di Malaysia untuk tempoh 2021 dan 2022, RGTSU telah mengadakan sesi libat urus bersama pemegang lesen pengiriman dan agensi-agensi Kerajaan yang berkaitan berkenaan kapasiti yang tersedia di samping proses yang terlibat bagi menempah kapasiti di RGTSU. ST memantau pelaksanaan sesi tersebut supaya proses yang dimaklumkan oleh RGTSU adalah selaras dengan AA yang telah diluluskan oleh ST.

Platform libat urus ini juga menekankan tatacara bagi mendapatkan akses, selain menjelaskan tentang isu-isu yang berbangkit antara pemegang lesen pengiriman dan pihak PGB. Antara isu yang dibangkitkan adalah:

- Kaedah *Open Season* yang akan dijalankan oleh PGB.
- Pengurusan *level playing field* oleh PGB antara PETRONAS Energy & Gas Trading Sdn. Bhd. (PEGT) dan pengiriman gas yang berjaya mendapatkan akses.
- Pengurusan krisis nasional yang melibatkan penstoran Gas Asli Cecair (LNG) di terminal.
- Tempoh yang singkat bagi permohonan akses tempoh 2021 hingga 2022.

ST akan mempergiatkan usaha pada 2021 untuk memastikan pengendali *(Operator)* kemudahan gas bertanggungjawab dalam memastikan penggunaan kemudahan gas berada pada tahap yang optimum.

OPEN ACCESS TO LNG REGASIFICATION TERMINAL (SG. UDANG) SDN. BHD. (RGTSU) AND PENINSULAR GAS UTILISATION (PGU) TO THIRD PARTIES

To enable the implementation of TPA in the Gas Market in Malaysia for the period of 2021 and 2022, RGTSU held engagement sessions with licensed shippers and relevant Government agencies with regards to the available capacity as well as the process involved in booking capacity at RGTSU. The Commission monitored the session to ensure that the processes informed by RGTSU were in line with the AA that has been approved by the Commission.

The engagement platform emphasised the procedures for gaining access and clarified issues that arise between licensed shippers and PGB. Among the issues raised were:

- *The Open Season method which will be conducted by PGB.*
- *Management of a level playing field by PGB between PETRONAS Energy & Gas Trading Sdn. Bhd. (PEGT) and gas shippers that have successfully gained access.*
- *National crisis management involving Liquefied Natural Gas (LNG) storage at terminals.*
- *Short period for access applications for the period of 2021 to 2022.*

In 2021, ST will intensify efforts to ensure that gas facility operators are responsible in keeping the use of gas facilities at an optimal level.

PELAKSANAAN KAJIAN SEMULA PASARAN GAS – *GAS MARKET REVIEW*

Mengikut keperluan di bawah Seksyen 28I Akta Bekalan Gas 1993, inisiatif Kajian Semula Pasaran Gas telah dijalankan oleh perunding yang dilantik ST iaitu *The Lantau Group* (TLG) pada 2020. Kajian ini bertujuan membantu ST untuk menilai situasi pasaran gas di Malaysia, mengenal pasti kekuatan dan kelemahan pasaran tersebut, menyiasat sebarang penyelewengan pada pasaran dan seterusnya mengesyorkan dasar serta penyelesaian yang praktikal untuk memperkukuhkan perkembangan sistem TPA yang diperkenalkan pada 2017.

Terdapat lima (5) elemen utama bagi skop kajian yang terdiri daripada:

- Penilaian terhadap pembekalan dan permintaan.
- Penilaian ke atas keadaan semasa pasaran gas dan halangan dalam menuju ke arah pasaran gas terbuka.
- Penilaian ke atas kos dan faedah di dalam reformasi subsidi.
- Cadangan ke atas penambahbaikan yang perlu dijalankan.
- Pelan pelaksanaan ke arah pasaran gas terbuka.

Dalam menjayakan kajian ini, ST bersama-sama TLG telah menjalankan sesi libat urus bersama Unit Perancang Ekonomi (EPU), Kementerian Tenaga dan Sumber Asli (KeTSA), Petronas, Shell dan pihak berkepentingan lain bagi mendapatkan maklumbalas dan isu utama yang dihadapi, serta pandangan dan hala tuju yang dihasratkan oleh penggiat industri ke arah pasaran gas terbuka di Malaysia.

IMPLEMENTATION OF GAS MARKET REVIEW

Pursuant to the requirements under Section 28I of the Gas Supply Act 1993, the Gas Market Review initiative was conducted by the Commission-appointed consultant, The Lantau Group (TLG) in 2020. The study aimed to assist the Commission in assessing the gas market situation in Malaysia, identifying the strengths and weaknesses of the market, investigating any irregularities in the market and subsequently recommending policies and practical solutions to strengthen the development of the TPA system introduced in 2017.

The five (5) main elements within the scope of the study consisted of:

- *Assessment of supply and demand.*
- *Assessment of the current state of the gas market and obstacles in the transition towards an open gas market.*
- *Assessment of costs and benefits in subsidy reforms.*
- *Suggestions on improvements to be carried out.*
- *Implementation plan towards an open gas market.*

To ensure the success of this study, the Commission together with TLG conducted engagement sessions with the Economic Planning Unit (EPU), the Ministry of Energy and Natural Resources (KeTSA), Petronas, Shell and other stakeholders to obtain feedback on key issues faced, as well as the views and desired direction of industry players with regards to an open gas market in Malaysia.

KECEKAPAN TENAGA
ENERGY EFFICIENCY

INTENSITI TENAGA ELEKTRIK DI SEMENANJUNG DAN SABAH

Intensiti tenaga elektrik, iaitu kuantiti tenaga elektrik yang diperlukan bagi menghasilkan satu unit Keluaran Dalam Negara Kasar (KDNK) sering dikaitkan dengan prestasi kecekapan tenaga bagi sesebuah negara. Pengurangan intensiti tenaga elektrik turut dipengaruhi oleh faktor-faktor tertentu seperti aktiviti penggunaan elektrik yang lebih cekap.

ELECTRICITY INTENSITY IN THE PENINSULA AND SABAH

Electricity intensity, which refers to the quantity of electricity required to produce one unit of Gross Domestic Product (GDP), is often associated with the energy efficiency performance of a country. The reduction in electricity intensity is also influenced by certain factors such as more efficient electricity consumption.

Pada 2020, intensiti tenaga elektrik di Semenanjung dan Sabah adalah lebih tinggi berbanding intensiti tenaga elektrik pada 2019. Intensiti tenaga elektrik di Semenanjung ialah sebanyak 0.0985 GWj/RM juta, iaitu 0.8% lebih tinggi daripada 0.0977 GWj/RM juta pada 2019. Sabah pula mencatatkan intensiti tenaga elektrik sebanyak 0.06067 GWj/RM juta, iaitu 1.3% lebih tinggi berbanding 0.05992 GWj/RM juta pada 2019.

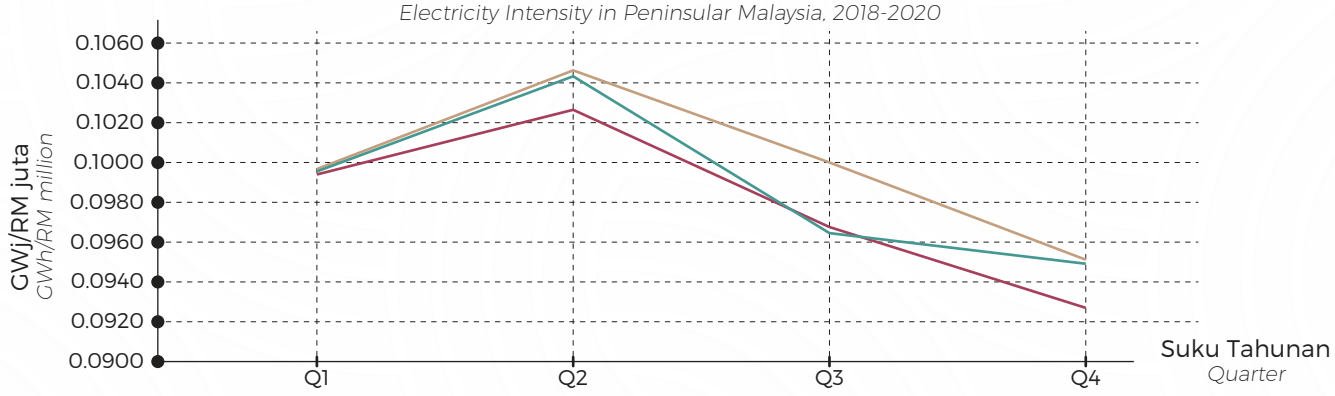
Walau bagaimanapun, berbanding 2019, jumlah keseluruhan penggunaan elektrik pada 2020 menurun 4.8% di Semenanjung dan 4.4% di Sabah. Jumlah penggunaan elektrik di Semenanjung pada 2020 ialah 110,879.3 GWj, manakala di Sabah ialah 5,331.8 GWj.

In 2020, electricity intensity in the Peninsula and Sabah was higher compared to 2019. In the Peninsula, it stood at 0.0985 GWh/RM million, which was 0.8% higher than 0.0977 GWh/RM million recorded in 2019. In Sabah, electricity intensity stood at 0.06067 GWh/RM million, which was 1.3% higher than the 0.05992 GWh/RM million recorded in 2019.

However, total electricity consumption decreased by 4.8% in the Peninsula and by 4.4% in Sabah in 2020 compared with 2019. In 2020, total electricity consumption in the Peninsula stood at 110,879.3 GWh, and 5,331.8 GWh in Sabah.

Intensiti Tenaga Elektrik di Semenanjung Malaysia, 2018-2020

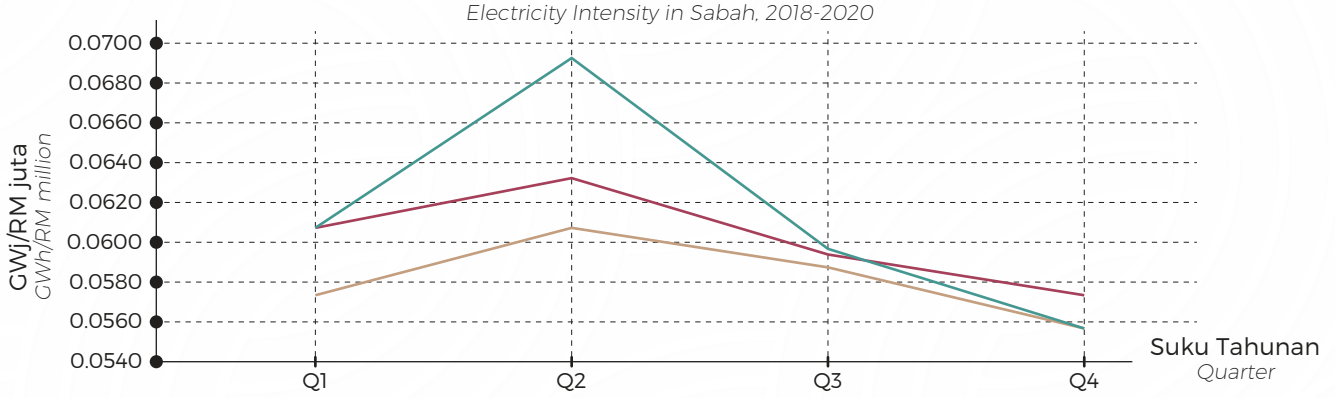
Electricity Intensity in Peninsular Malaysia, 2018-2020



	Q1	Q2	Q3	Q4
2018	0.0992	0.1046	0.1003	0.0955
2019	0.0993	0.1027	0.0968	0.0928
2020	0.0995	0.1044	0.0963	0.0950

Intensiti Tenaga Elektrik di Sabah, 2018-2020

Electricity Intensity in Sabah, 2018-2020



	Q1	Q2	Q3	Q4
2018	0.0571	0.0607	0.0582	0.0558
2019	0.0605	0.0635	0.0586	0.0574
2020	0.0605	0.0686	0.0593	0.0558

Perubahan corak penggunaan elektrik di semua sektor adalah paling ketara pada Suku Tahunan 2 2020 di mana pelaksanaan PKP telah dikuatkuasakan mulai 18 Mac hingga 3 Mei 2020. Penggunaan elektrik di sektor komersial Semenanjung telah menurun 23%, sektor perindustrian menurun 21% dan perlombongan menurun sebanyak 47% berbanding ST1 2020.

Di Sabah, penggunaan elektrik di sektor komersial dan perindustrian juga menurun masing-masing sebanyak 21.8% dan 16.9% sejak pelaksanaan beberapa siri PKP.

Adaptasi terhadap norma baharu seperti Bekerja Dari Rumah (BDR) dan Pengajaran dan Pembelajaran di Rumah (PDPR) di seluruh negara telah melonjakkan penggunaan elektrik domestik sebanyak 19% di Semenanjung dan 24.7% di Sabah, ekoran penggunaan intensif komputer, televisyen, alat mengecas peranti elektronik dan pendingin hawa di kediaman.

Pada penghujung 2020, intensiti tenaga elektrik dilihat menurun manakala penggunaan elektrik dalam sektor komersial, perindustrian dan perlombongan menunjukkan peningkatan, sejajar dengan pembukaan sektor ekonomi secara beransur-ansur dengan pelaksanaan Perintah Kawalan Pergerakan Bersyarat (PKPB) serta Perintah Kawalan Pergerakan Pemulihan (PKPP) di seluruh negara.

The change in electricity consumption patterns across all sectors was most significant in Quarter 2 of 2020 when the MCO was enforced from 18 March to 3 May 2020. Electricity consumption in the commercial, industrial and mining sectors of the Peninsula decreased by 23%, 21% and 47% respectively compared to Q1 2020.

In Sabah, electricity consumption in the commercial and industrial sectors also decreased by 21.8% and 16.9% respectively since the implementation of a series of MCOs.

The nationwide adaptation of new norms such as Work from Home (WFH) and Virtual Learning (VL) boosted domestic electricity consumption by 19% in the Peninsula and 24.7% in Sabah, due to intensive use of computers, televisions, electronic chargers and air conditioning in residences.

As at the end of 2020, electricity intensity declined while electricity consumption in the commercial, industrial and mining sectors increased following the gradual opening of economic sectors with the implementation of the Conditional Movement Control Order (CMCO) and Recovery Movement Control Order (RMCO) throughout the country.

PENGUATKUASAAN PERATURAN PENGURUSAN TENAGA ELEKTRIK DENGAN CEKAP (PPTEC) 2008

Bagi menggalakkan tadbir urus yang baik dalam amalan pengurusan tenaga di kalangan pengguna kuasa besar, Kerajaan telah menguatkuasakan Peraturan Pengurusan Tenaga Elektrik dengan Cekap (PPTEC) 2008 di mana pepasangan yang menggunakan tenaga elektrik sebanyak atau lebih 3,000,000 kWj dalam tempoh enam (6) bulan berturut-turut hendaklah melantik seorang Pengurus Tenaga Elektrik (PTE) yang berdaftar serta menghantarkan laporan berkala setiap enam (6) bulan kepada ST.

Aktiviti penguatkuasaan juga perlu dilaksanakan terhadap pepasangan yang masih belum melantik PTE bagi meningkatkan kadar pematuhan terhadap peraturan ini.

Pada 2020, penguatkuasaan terhadap PPTEC 2008 telah dilaksanakan ke atas 12 pepasangan. Namun, penguatkuasaan PKP yang pada Mac 2020 telah menyebabkan kerja-kerja penguatkuasaan tidak dapat dilaksanakan secara sepenuhnya.

ENFORCEMENT OF THE EFFICIENT MANAGEMENT OF ELECTRICAL ENERGY REGULATIONS (EMEER) 2008

The Government enforced the Efficient Management of Electrical Energy Regulations (EMEER) 2008 to promote good governance in energy management practices among large power consumers, whereby installations that use electricity that equals to or exceeding 3,000,000 kWh within six (6) consecutive months must also appoint a Registered Electrical Energy Manager (REEM) and submit periodic reports every six (6) months to the Commission.

In the interest of boosting compliance to this rule, enforcement activities must also be implemented at installations that have yet to appoint a REEM.

In 2020, the enforcement of EMEER 2008 was implemented at 12 installations. However, the imposition of the MCO in March 2020 hampered enforcement activities from being fully implemented.

Hasil daripada aktiviti pemantauan dan penguatkuasaan yang dilakukan oleh ST, pematuhan terhadap PPTEC 2008 didapati meningkat pada 2020 iaitu pada kadar 72%, bersamaan dengan pematuhan di 1,414 pepasangan berbanding 1,387 pepasangan pada kadar pematuhan sebanyak 71% pada tahun sebelumnya.

As a result of the monitoring and enforcement activities carried out by the Commission, the EMEER 2008 compliance rate in 2020 increased to 72% or 1,414 installations compared with a compliance rate of 71% or 1,387 installations in the previous year.

PELAKSANAAN PELAN TINDAKAN KECEKAPAN TENAGA NASIONAL (NEEAP)

Untuk 2020, pelaksanaan Pelan Tindakan Kecekapan Tenaga Nasional (NEEAP) merangkumi:

- Pemantauan pelaksanaan langkah-langkah kecekapan tenaga di bawah program Geran Audit Tenaga Bersyarat (EACG) di bawah RMK-11.
- Pelaksanaan program *retrofit* sistem pendingin hawa dan lampu LED di hospital Kerajaan terpilih di bawah RMK-11.
- Pemantauan langkah-langkah kecekapan tenaga melalui pelaporan berkala pepasangan yang tertakluk di bawah PPTEC 2008.

Sehingga Disember 2020, pelaksanaan NEEAP telah berjaya mencapai penjimatan tenaga elektrik sebanyak 3.15% berbanding jangkaan sasaran 2.8%. Peratusan penjimatan ini diukur dengan mengambil kira penjimatan tahunan terhasil bagi 2020 berbanding jangkaan penggunaan tenaga elektrik bagi 2020 tanpa pelaksanaan NEEAP.

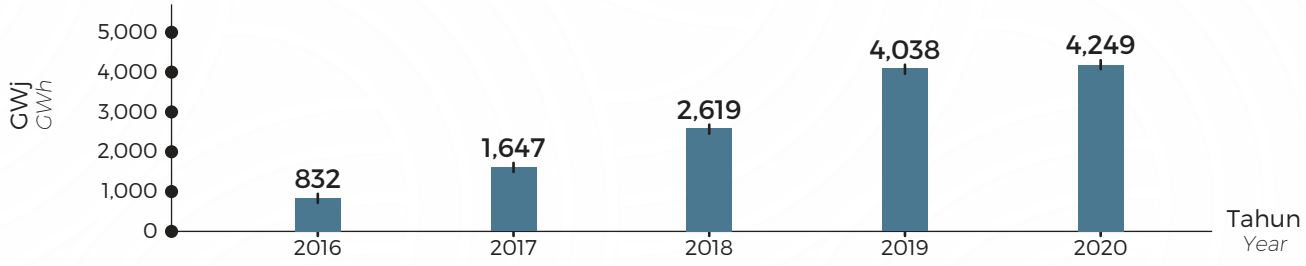
IMPLEMENTATION OF THE NATIONAL ENERGY EFFICIENCY ACTION PLAN (NEEAP)

In 2020, the implementation of the National Energy Efficiency Action Plan (NEEAP) included:

- *Monitoring the implementation of energy efficiency measures under the Energy Audit Conditional Grant (EACG) programme under the 11MP.*
- *Implementing a retrofit programme for air conditioning and LED lighting systems in selected Government hospitals under the 11MP.*
- *Monitoring energy efficiency measures through periodic reporting of installations that are subject to the EMEER 2008.*

As of December 2020, NEEAP implementation successfully achieved electricity savings of 3.15% compared to the expected target of 2.8%. The percentage of these savings was measured by taking into account the resulting annual savings for 2020 compared to the expected electricity consumption for 2020 without the implementation of NEEAP.

Penjimatan Tenaga Elektrik Tahunan Sebenar NEEAP, 2016-2020
NEEAP Actual Annual Electricity Savings, 2016-2020

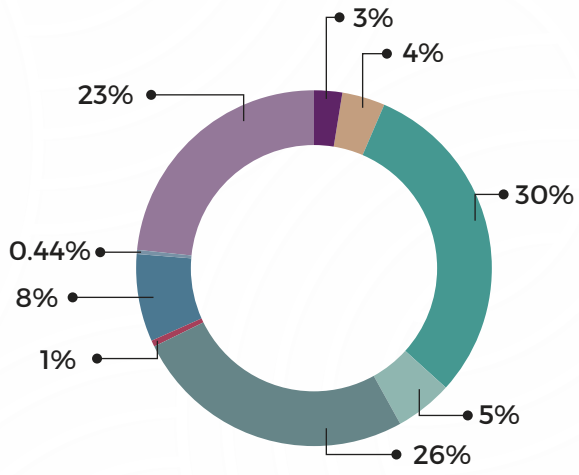


Penjimatan tenaga elektrik tahunan yang dicapai sehingga Disember 2020 adalah sebanyak 4,249 GWj iaitu bersamaan dengan RM1.68 bilion, berdasarkan kepada tarif asas semasa RM 0.3945/kWj.

The annual electricity savings achieved up to December 2020 was 4,249 GWh, which is equivalent to RM1.68 billion based on the current base tariff of RM 0.3945/kWh.

Pecahan Pencapaian Berdasarkan Program-Program di bawah NEEAP

Breakdown of Achievements Based on NEEAP Programmes



0% Kecekapan Tenaga di Bangunan Baharu
Energy Efficiency in New Buildings

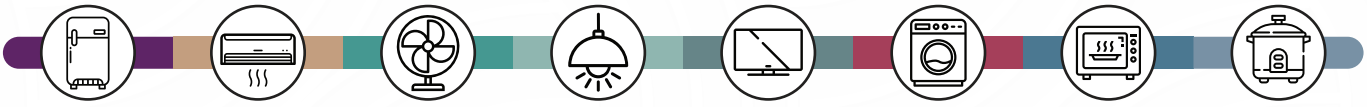
- Kempen Pendingin Hawa Bertaraf 5 Bintang
  5 star Air Conditioner Campaign
- Audit dan Pengurusan Tenaga di Bangunan Komersial Besar
  Energy Audit and Management in Large Commercial Buildings
- Audit dan Pengurusan Tenaga di Industri Besar dan Sederhana
  Energy Audit and Management in Large and Medium Industries
- Motor Berkecekapan Tinggi
  High Efficiency Motors
- Audit Tenaga (Kemudahan Kerajaan)
  Energy Audit (Government Facilities)
- Audit dan Pengurusan Tenaga di Bangunan Komersial Sederhana
  Energy Audit and Management in Medium Commercial Buildings
- *Cogeneration* di Bangunan Industri dan Komersial
  Cogeneration in Industrial and Commercial Buildings
- Kempen Peti Sejuk Bertaraf 5 Bintang
  5 star Refrigerator Campaign
- Kempen Lampu EE (tidak termasuk Lampu bagi Industri, Komersial & Kerajaan)
  EE Lighting Campaign (Excluding Lighting for Industry, Commercial and Government)

PENINGKATAN STANDARD PRESTASI TENAGA MINIMUM (MEPS)

Pada 2020, terdapat penambahan dua (2) kelengkapan cekap tenaga di bawah Standard Prestasi Tenaga Minimum (MEPS) iaitu ketuhar gelombang mikro dan periuk nasi, selaras dengan sasaran Kerajaan di bawah RMK-11 untuk menambah kepelbagaian kelengkapan elektrik cekap tenaga di pasaran. Ini menjadikan jumlah kelengkapan cekap tenaga sebanyak lapan (8) kelengkapan pada 2020 seperti berikut:

ENHANCEMENT OF THE MINIMUM ENERGY PERFORMANCE STANDARDS (MEPS)

In 2020, two (2) energy efficient appliances namely microwave ovens and rice cookers were added under the Minimum Energy Performance Standards (MEPS), in line with the Government's target under the 11MP to increase the diversity of energy efficient electrical appliances in the market. As of 2020, the total energy efficient appliances stands at eight (8), namely:



Peti Sejuk *Refrigerators*

Pendingin Hawa *Air Conditioners*

Kipas *Fans*

Lampu *Lamps*

Televisyen *Televisions*

Mesin Basuh *Washing Machines*

Ketuhar Gelombang Mikro *Microwave Ovens*

Periuk Nasi *Rice Cookers*

Para pengimport dan pengilang diberikan tempoh setahun sebelum penguatkuasaan sepenuhnya ke atas keperluan pematuhan MEPS dan Pelabelan Cekap Tenaga bagi kedua-dua kelengkapan ini pada 2021. Inisiatif ini juga adalah untuk mengelakkan lambakan kelengkapan tidak cekap tenaga bagi mencapai sasaran NEEAP untuk penjimatan tenaga sebanyak 52,233 GWj pada 2025.

Importers and manufacturers are given a year before the full enforcement of MEPS and the Energy Efficient Labelling compliance requirements for the two appliances in 2021. The purpose of this initiative is to prevent the dumping of inefficient appliances to achieve the overall NEEAP target for energy savings of 52,233 GWh by 2025.

INISIATIF PENAMBAHBAIKAN LABEL CEKAP TENAGA

Label Cekap Tenaga versi baharu telah ditambahbaik pada 2020 dengan penambahan ciri-ciri yang lebih baik iaitu dengan memperkenalkan *QR Code*, Tahun Penarafan Bintang dan Nombor Kelulusan. Penambahbaikan bertujuan memberikan maklumat lanjut mengenai kelengkapan selaras dengan peruntukan di bawah Peraturan 101A (3), Peraturan-Peraturan Elektrik 1994. Maklumat mengenai kelengkapan berkenaan boleh dicapai melalui imbasan pada *QR Code* di label tersebut.

ST juga telah menambahbaik sistem eDIK pada 2020 untuk menyertakan maklumat terperinci kelulusan kelengkapan berkenaan dalam *QR Code*, untuk kemudahan semakan kelengkapan,

Label Cekap Tenaga versi baharu ini akan dikuatkuasakan sepenuhnya pada 2021 bagi membantu pengguna membuat pilihan bijak dalam pembelian.

THE ENERGY EFFICIENCY LABEL IMPROVEMENT INITIATIVE

The Energy Efficiency Label was enhanced in 2020 with the addition of improved features such as introducing a QR Code, Star Rating Year and Approval Number. The improvement was intended to provide more information on the relevant equipment in accordance with the provisions under Regulation 101A (3), Electricity Regulations 1994. Information on the appliances can be accessed by scanning the QR Code on the label.

The Commission also enhanced the eDIK system in 2020 to include detailed information on the approval of the appliances within the QR Code, for ease of appliance review.

This new version of the Energy Efficiency Label will be fully enforced in 2021 to assist consumers in making more informed purchasing decisions.

Label Cekap Tenaga baharu yang diperkenalkan dengan penambahan *QR Code*, Nombor Kelulusan dan Tahun Penarafan Bintang.
New Energy Efficiency Label with the addition of a QR Code, Approval Number and Star Rating Year.

Jenis Kelengkapan
Appliance Type

QR Code Dijana dari CoA
QR Code Generated from CoA

Peratus Penjimatan (diambil dari *Test Report*)
Percentage of Savings (taken from the Test Report)

Jenama dan No. Model
Brand and Model Number

Tahun Penarafan Bintang
Star Rating Year

Purata Penggunaan Tenaga Setahun (diambil dari *Test Report*)
Average Annual Energy Consumption (taken from the Test Report)

Nombor Kelulusan CoA (daripada CoA)
CoA Approval Number (from CoA)

GERAN AUDIT TENAGA BERSYARAT (EACG)

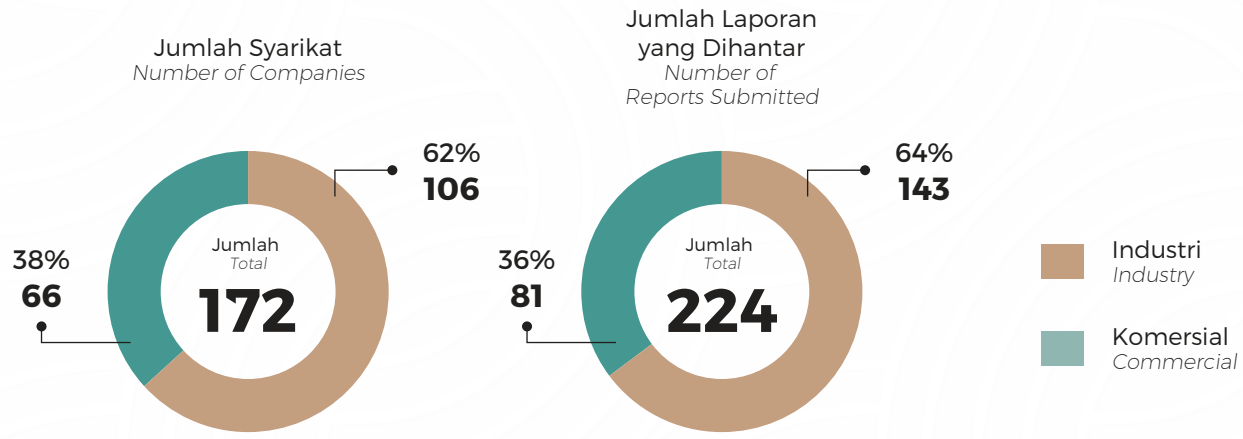
Program Geran Audit Tenaga (EACG) bersyarat telah memasuki fasa kedua pelaksanaannya iaitu fasa pemantauan pelaksanaan langkah-langkah kecekapan tenaga oleh penerima geran bermula 2018.

ENERGY AUDIT CONDITIONAL GRANT (EACG)

The Energy Audit Conditional Grant (EACG) programme entered the second phase of its implementation, which is the monitoring phase of the energy efficiency measures implemented by grant recipients starting 2018.

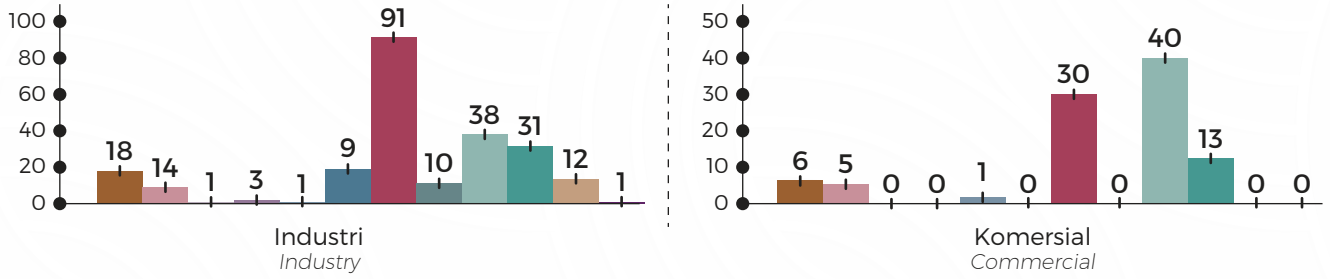
Jumlah Laporan EACG yang Dikemukakan, 2020

Number of EACG Reports Submitted, 2020



Langkah-Langkah Kecekapan Tenaga yang Telah Dilaksanakan oleh Penerima Geran, 2020

Energy Efficiency Measures Implemented by Grant Recipients, 2020



- Sistem Pendingin Hawa/*Chiller*/AHU (Pemasangan unit yang berkecekapan tinggi sahaja)
  Air Conditioning System /Chiller/AHU (Installation of high efficiency units only)
- Program Kesedaran
  Awareness Programmes
- *Cogeneration*
  Cogeneration
- Sistem Pemampat (Pemasangan unit yang berkecekapan tinggi sahaja)
  Compressor System (Installation of high efficiency units only)
- Sistem Kipas (Pemasangan unit yang berkecekapan tinggi sahaja)
  Fan System (Installation of high efficiency units only)
- Inverter/VSD/VFD
  Inverter/VSD/VFD
- Lampu (Pemasangan unit yang berkecekapan tinggi sahaja)
  Lighting (Installation of high efficiency units only)
- Motor (Pemasangan unit yang berkecekapan tinggi sahaja)
  Motor (Installation of high efficiency units only)
- Kawalan Operasi
  Operation Control
- Lain-lain
  Others
- Proses
  Process
- Sistem Pam (Pemasangan unit yang berkecekapan tinggi sahaja)
  Pump System (Installation of high efficiency units only)

Anggaran penjimatan tenaga yang dicapai daripada pelaksanaan langkah-langkah kecekapan tenaga bagi 2020 adalah sebanyak 47,148,820.77 kWj, iaitu bersamaan dengan RM 18,600,209.79, berdasarkan kepada tarif asas semasa RM0.3945/kWj.

The estimated energy savings achieved from the implementation of these energy efficiency measures in 2020 stood at 47,148,820.77 kWh, which is equivalent to RM18,600,209.79 based on the current base tariff of RM0.3945/kWh.

PROGRAM *RETROFIT* SISTEM PENDINGIN HAWA DAN LAMPU LED DI BAWAH RMK-11

Pelaksanaan program *retrofit* sistem pendingin hawa dan lampu LED pada 2020 telah melibatkan 28 bangunan Kerajaan iaitu 18 hospital dan sepuluh (10) bangunan pejabat Kerajaan.

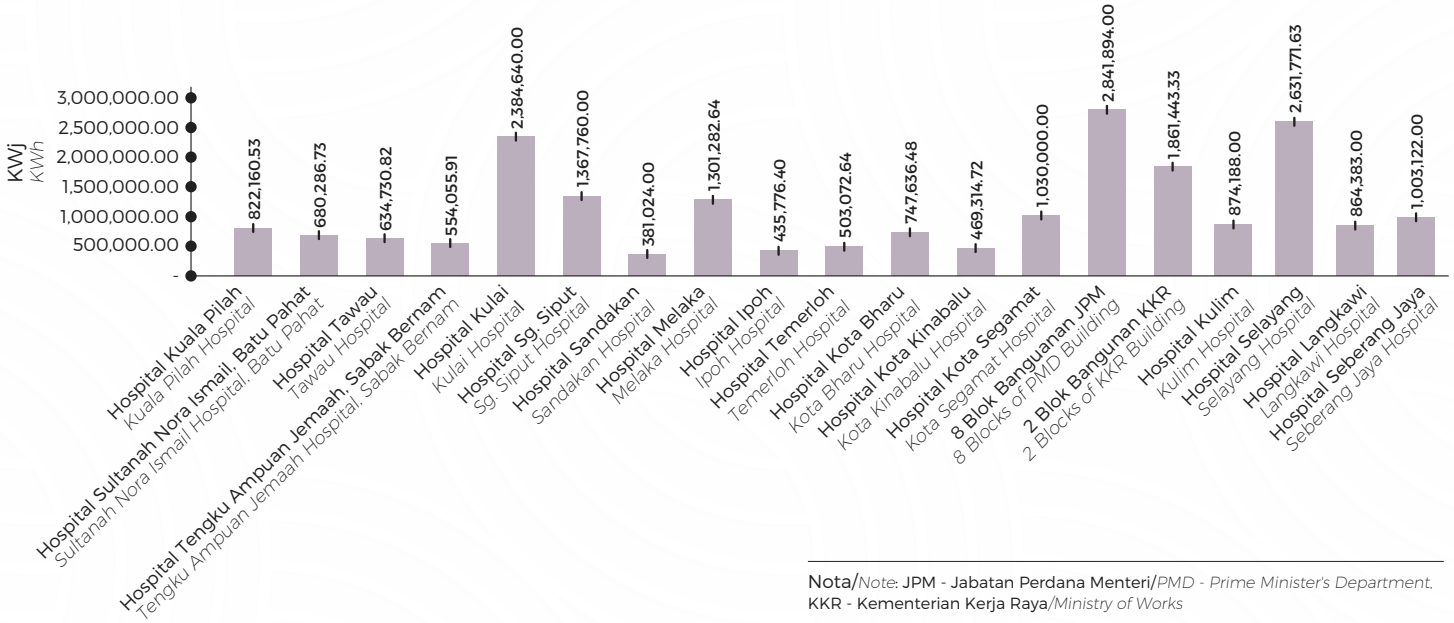
Inisiatif ini menyumbang kepada penjimatan elektrik terkumpul sebanyak 48.94 juta kWj iaitu bersamaan dengan RM19.31 juta atau 37 kilo tan karbon dioksida (ktCO2eq).

RETROFIT PROGRAMME FOR AIR CONDITIONING AND LED LIGHTING SYSTEMS UNDER THE 11MP

The retrofit programme for air conditioning and LED lighting systems in 2020 was implemented in a total of 28 Government buildings, namely 18 Government hospitals and 10 Government office buildings.

The initiative contributed to accumulated electricity savings of 31.5 million kWh, which is equivalent to RM12.4 million or 24 kilo tonnes of carbon dioxide (ktCO2eq).

Anggaran Penjimatan Tahunan Setiap Bangunan
Estimated Annual Savings Per Building



Nota/*Note*: JPM - Jabatan Perdana Menteri/*PMD - Prime Minister's Department*, KKR - Kementerian Kerja Raya/*Ministry of Works*

PEMANTAUAN LANGKAH-LANGKAH KECEKAPAN TENAGA DI BAWAH PPTEC 2008

Keperluan untuk mengemukakan laporan berkala setiap enam (6) bulan di bawah PPTEC 2008 meliputi pelaporan jumlah penggunaan tenaga elektrik pada sepanjang tempoh enam (6) bulan semasa dan juga enam (6) bulan sebelumnya, langkah-langkah kecekapan tenaga yang dilaksanakan sepanjang tempoh enam (6) bulan tersebut dan juga anggaran penjimatan tenaga elektrik yang dicapai melalui pelaksanaan inisiatif tersebut.

Sepanjang 2020, sebanyak 1,336 pepasangan telah menghantarkan laporan berkala berbanding 1,318 pepasangan pada 2019.

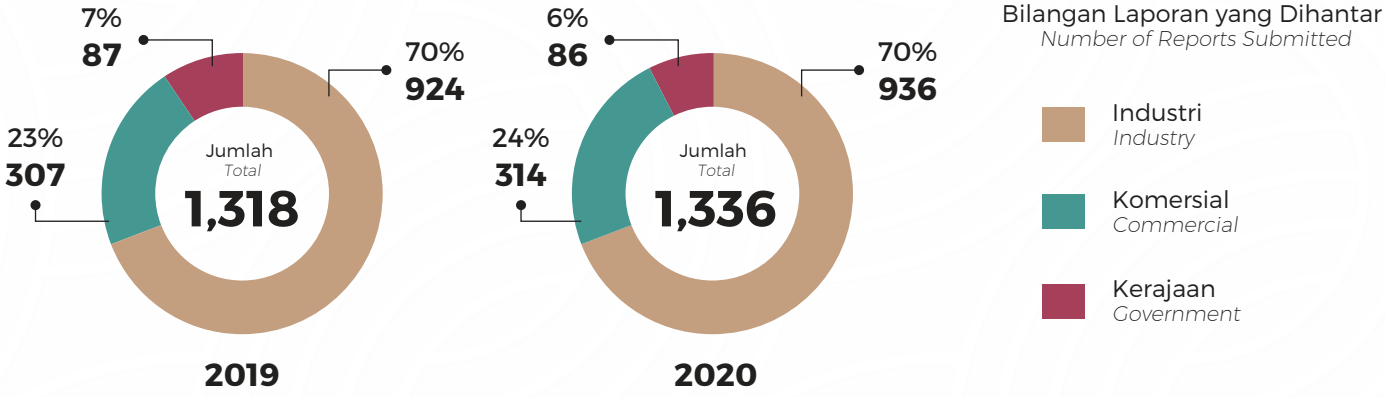
MONITORING OF ENERGY EFFICIENCY MEASURES UNDER EMEER 2008

The requirement to submit periodic reports every six (6) months under EMEER 2008 covers the reporting of total electricity consumption during the current six (6) months period and the previous six (6) months, as well as energy efficiency measures implemented during the current six (6) months period and the estimated electricity savings achieved through the implementation of the initiative.

Throughout 2020, a total of 1,336 installations submitted periodic reports in comparison to 1,318 installations in 2019.

Pepasangan yang Menghantar Laporan Berkala, 2019 & 2020

Installations that Submitted Periodic Reports, 2019 & 2020

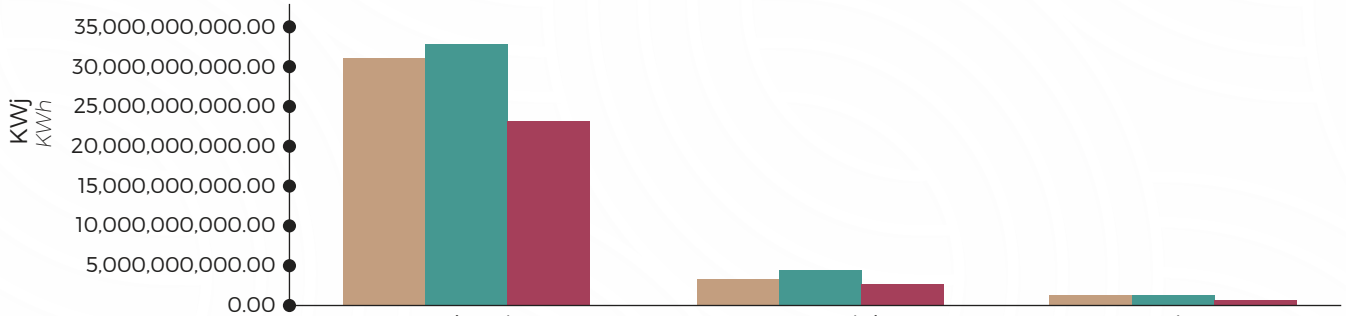


Daripada laporan berkala yang dihantar oleh pepasangan melalui sistem dalam talian *Energy Management Information System* (EMIS), beberapa analisis dapat dijalankan bagi menilai tahap kecekapan tenaga yang terhasil daripada pematuhan kepada PPTEC 2008.

Several analyses can be conducted from the periodic reports submitted by the installations through the Energy Management Information System (EMIS) online, to assess the level of energy efficiency resulting from compliance with EMEER 2008.

Trend Penggunaan Tenaga Elektrik, 2018 - 2020

Electricity Consumption Trend, 2018 – 2020



	Industri *Industry*	Komersial *Commercial*	Kerajaan *Government*
2018	30,967,996,823.67	3,494,213,279.07	1,335,840,630.40
2019	32,682,965,353.61	4,431,047,296.98	1,407,583,321.42
2020	23,196,581,199.38	2,819,652,560.35	911,306,231.56

Pada 2020, penggunaan tenaga elektrik telah mengalami trend penurunan di ketiga-tiga sektor industri, komersial dan juga bangunan Kerajaan. Maklumat berdasarkan pecahan subsektor utama ini akan mempermudahkan aktiviti penyediaan kerangka strategi pelaksanaan langkah-langkah kecekapan tenaga dalam usaha untuk memastikan potensi penjimatan tenaga yang lebih tinggi.

In 2020, electricity consumption showed a downward trend in all three sectors namely industrial, commercial and Government buildings. Information based on the breakdown of these key sub-sectors will facilitate the preparation of a strategic framework for the implementation of energy efficiency measures in order to secure the potential for higher energy savings.

PELAKSANAAN *LAO PDR-THAILAND-MALAYSIA-SINGAPORE POWER INTEGRATION PROJECT* (LTMS-PIP)

IMPLEMENTATION OF THE LAO PDR-THAILAND-MALAYSIA-SINGAPORE POWER INTEGRATION PROJECT (LTMS-PIP)

Lao PDR-Thailand-Malaysia-Singapore Power Integration Project (LTMS-PIP) merupakan projek lanjutan kepada *Lao PDR-Thailand-Malaysia Power Integration Project* (LTM-PIP) yang dilaksanakan di bawah *Energy Purchase and Wheeling Agreement* (EPWA) Fasa 1 dan Fasa 2 bermula 2018 sehingga 2021.

Dalam kenyataan bersama *(joint statement)* oleh Lao PDR, Thailand, Malaysia dan Singapura mengenai LTMS-PIP semasa Mesyuarat Menteri-Menteri ASEAN Mengenai Tenaga (AMEM) yang ke-38, keempat-empat negara telah mengumumkan komitmen mereka untuk memulakan perdagangan tenaga rentas sempadan dari Lao PDR ke Singapura melalui Thailand dan Malaysia dengan kapasiti sehingga 100 MW menggunakan talian sambungtara sedia ada bagi tempoh 2022 hingga 2023.

Memorandum Persefahaman (MoU) antara keempat-empat negara berhubung pelaksanaan LTMS-PIP tersebut dijangka akan ditandatangani pada 2021.

The Lao PDR-Thailand-Malaysia-Singapore Power Integration Project (LTMS-PIP) is an extension of the Lao PDR-Thailand-Malaysia Power Integration Project (LTM-PIP) implemented under Phase 1 and Phase 2 of the Energy Purchase and Wheeling Agreement (EPWA) from 2018 to 2021.

In a joint statement by Lao PDR, Thailand, Malaysia and Singapore during the 38th ASEAN Ministers on Energy Meeting (AMEM), the four (4) countries announced their commitment to initiate cross-border energy trade from Lao PDR to Singapore via Thailand and Malaysia with a capacity of up to 100 MW using existing interconnection lines for the period of 2022 to 2023.

A Memorandum of Understanding (MoU) between the four countries on the implementation of the LTMS-PIP is expected to be signed in 2021.

PELAKSANAAN PEMETERAN TENAGA BERSIH (NEM 2.0)

IMPLEMENTATION OF NET ENERGY METERING (NEM 2.0)

Dalam usaha untuk meningkatkan lagi sumbangan TBB dalam campuran bahan api, skim Pemeteran Tenaga Bersih (NEM 2.0) diteruskan pada 2020 dengan tawaran baharu Kerajaan melalui kaedah *offset one-to-one* berbanding *displaced cost* semasa ianya mula diperkenalkan.

Melalui kaedah *offset one-to-one* tersebut, Kerajaan berjaya mencapai sasaran kuota 500 MW pada November 2020.

Skim ini mampu membantu pengguna menjimatkan bil elektrik melalui pemasangan sistem solar PV di atas bumbung premis mereka.

Sepanjang 2020, ST juga telah bekerjasama dengan pihak *Sustainable Energy Development Authority Malaysia* (SEDA) selaku agensi pelaksana bagi program ini untuk mempromosikan program NEM 2.0 melalui radio dan media sosial.

To further increase the contribution of RE to the fuel mix, the Net Energy Metering (NEM 2.0) scheme continued in 2020 with the Government offering a new one-to-one offset method, as opposed to the displaced cost method when it was first introduced.

Through the one-to-one offset method, the Government managed to achieve the 500 MW quota target in November 2020.

The scheme facilitates consumers to save on electricity bills through the installation of solar PV systems on the roofs of their premises.

Throughout 2020, the Commission also collaborated with the Sustainable Energy Development Authority Malaysia (SEDA) as the implementing agency for this programme, to promote NEM 2.0 on radio and social media.

KERJASAMA *BUSINESS-TO-BUSINESS* SEKTOR TENAGA ANTARA MALAYSIA DENGAN SINGAPURA DAN THAILAND

ENERGY SECTOR BUSINESS-TO-BUSINESS COOPERATION BETWEEN MALAYSIA AND SINGAPORE AND THAILAND

Integrasi sistem pembekalan elektrik di Malaysia bersama negara-negara jiran telah dijalankan sejak tahun 1980-an lagi bagi memenuhi keperluan keberterusan, kestabilan, dan daya harap pembekalan bagi negara-negara yang terlibat. Ini termasuklah penyaluran sambungtara di antara grid Tenaga Nasional Berhad (TNB) ke grid Singapura - SP PowerGrid Ltd (SPPG) dan grid TNB ke grid Thailand - *Electricity Generating Authority of Thailand* (EGAT), berdasarkan pertukaran tenaga antara utiliti negara yang tidak melibatkan pihak ketiga.

Pada 10 Jun 2020, Kerajaan Malaysia melalui KeTSA telah meluluskan polisi bagi mekanisme *Cross-Border Electricity Power* oleh Penjana Bebas (IPP) ke Singapura dan Thailand. Melalui pelaksanaan mekanisme ini, *Power Plant Developer* (PPD) dapat menjana dan menjual tenaga elektrik ke Singapura dan Thailand menggunakan kemudahan sambungtara yang sedia ada atau yang baharu dengan syarat yang tertentu.

Lanjutan keputusan Kerajaan, ST telah membangunkan panduan eksport tenaga - *Guide for Cross Border Electricity Power Sale*s dengan objektif-objektif berikut:

- Penyediaan rangka kerja asas penjualan tenaga elektrik rentas sempadan di antara Semenanjung dan negara jiran.
- Penetapan syarat dan keperluan penjualan tenaga elektrik rentas sempadan antara PPD di Semenanjung dan pembeli di negara jiran.
- Penetapan peranan, fungsi dan tanggungjawab pihak yang berkaitan.
- Memudahcara penjualan tenaga elektrik rentas sempadan.

Dalam usaha untuk membangunkan panduan ini, ST telah menubuhkan kumpulan kerja dengan penglibatan aktif daripada TNB, Pembeli Tunggal (SB) dan Pengendali Sistem Grid (GSO). Panduan ini telah dimuatnaik di laman sesawang ST pada 30 Disember 2020.

ST juga kini sedang terlibat dalam sesi perbincangan bersama *Energy Market Authority* (EMA) Singapura bagi penyelarasan pelaksanaan program dalam tempoh percubaannya. Pelaksanaan program ini diharapkan akan bermula pada akhir 2021 melalui penjualan tenaga elektrik ke Singapura.

The integration of the electricity supply system in Malaysia with that of neighbouring countries has been carried out since the 1980s to meet the needs for secure, stable, and reliable supply among the countries involved. This includes the interconnection between the Tenaga Nasional Berhad (TNB) grid to the Singapore grid - SP PowerGrid Ltd (SPPG), and the TNB grid to the Thailand grid - Electricity Generating Authority of Thailand (EGAT), based on the energy exchange between national utilities not involving third parties.

On 10 June 2020, the Government of Malaysia through KeTSA approved a policy for the Cross-Border Electricity Power mechanism by Independent Power Producers (IPPs) to Singapore and Thailand. Through this mechanism, Power Plant Developers (PPD) are able to generate and sell electricity to Singapore and Thailand using the existing or new interconnection facilities subject to certain conditions.

Following the Government's decision, the Commission had developed the Guide for Cross Border Electricity Power Sales with the following objectives:

- *To prepare a basic framework for the cross-border sale of electricity between the Peninsula and neighbouring countries.*
- *To determine the conditions and requirements for the cross-border sale of electricity between PPDs in the Peninsula and buyers in neighbouring countries.*
- *To determine the roles, functions and responsibilities of relevant parties.*
- *To facilitate the cross-border sale of electricity.*

To develop this guide, the Commission established a working group with the active involvement of TNB, Single Buyer (SB) and Grid System Operator (GSO). The guide was uploaded on the Commission's website on 30 December 2020.

The Commission is also currently involved in discussions with the Energy Market Authority (EMA) of Singapore for the implementation of the programme during its trial period. The programme is expected to begin implementation end of 2021 through the sale of electricity to Singapore.

PELAKSANAAN PROGRAM BIDAAN LSS@MENTARI
IMPLEMENTATION OF THE LSS@MENTARI BIDDING PROGRAMME

Kementerian melalui ST telah menawarkan kuota solar sebanyak 1,000 MWac melalui proses pembidaan secara kompetitif di bawah program *Large Scale Solar by Malaysian Electricity Industry to Attract RE Investment* atau lebih dikenali sebagai LSS@MEnTARI. Inisiatif ini merupakan langkah Kerajaan bagi memulih serta merangsangkan ekonomi berikutan penularan pandemik Covid-19 dengan merancakkan pembangunan industri TBB.

Dokumen *Request for Proposal* (RFP) telah mula dijual pada 31 Mei 2020 sehingga 12 Jun 2020 pada jam 5.00 petang, melalui laman sesawang ST. Pada hari terakhir permohonan untuk penyertaan bidaan iaitu 2 September 2020, ST telah menerima 138 pembidaan daripada pihak pemaju yang berminat.

Pada akhir 2020, ST telah meneliti dan menilai bidaan-bidaan yang telah dikemukakan, sebelum disenarai pendek untuk penganugerahan pada Februari 2021. Projek-projek yang telah dianugerahkan akan disasarkan untuk mula beroperasi selewat-lewatnya pada 31 Disember 2023.

Pelaksanaan proses bidaan LSS ini adalah selaras dengan aspirasi Kerajaan untuk mencapai sasaran campuran kapasiti TBB sebanyak 35% daripada keseluruhan kapasiti di Malaysia menjelang 2025.

The Ministry through the Commission has offered a solar quota of 1,000 MWac through a competitive bidding process under the Large Scale Solar by Malaysian Electricity Industry to Attract RE Investment programme, more commonly known as LSS@MEnTARI. This is part of the Government's initiative to recover and stimulate the economy following the Covid-19 pandemic by advancing the development of the RE industry.

The Request for Proposal (RFP) document went on sale from 31 May 2020 until 12 June 2020 at 5.00 pm on the Commission's website. On 2 September 2020, the last day of the bidding applications, the Commission had received a total of 138 bids from interested developers.

At the end of 2020, the Commission had reviewed and evaluated the bids that were submitted, before being shortlisted for awarding in February 2021. The projects that will be awarded are targeted to commence operations by 31 December 2023.

The implementation of the LSS bidding process is in line with the Government's aspiration to achieve the RE capacity mix target of 35% by 2025.

PERSEDIAAN DAN PELANCARAN PROGRAM *SUSTAINABILITY ACHIEVED VIA ENERGY EFFICIENCY* (SAVE) 2.0

PREPARATION AND LAUNCH OF THE SUSTAINABILITY ACHIEVED VIA ENERGY EFFICIENCY (SAVE) 2.0 PROGRAMME

Dalam pembentangan Belanjawan 2021 pada 6 November 2020, YB Menteri Kewangan telah mengumumkan pelaksanaan program *Sustainability Achieved Via Energy Efficiency (SAVE) 2.0* iaitu pemberian e-rebat sebanyak RM200 kepada isi rumah yang berkelayakan membeli pendingin hawa atau peti sejuk cekap tenaga bertaraf lima (5) dan empat (4) bintang.

KeTSA telah melantik pihak SEDA Malaysia sebagai agensi peneraju program dan ST sebagai rakan kerjasama strategik. Di antara objektif utama program SAVE 2.0 dilaksanakan adalah:

- Menyokong aspirasi Kerajaan dalam proses menggalakkan inisiatif penjimatan dan kecekapan tenaga, rendah karbon dan tenaga lestari yang secara tidak langsung membantu Malaysia mencapai sasaran pengurangan karbon.
- Meningkatkan jumlah bilangan kelengkapan elektrik cekap tenaga bertaraf lima (5) dan empat (4) bintang bagi kelengkapan cekap tenaga di pasaran.
- Memberikan faedah penjimatan kos pembelian kelengkapan dan bil elektrik bulanan kepada orang awam.
- Memberikan kesedaran kepada orang awam mengenai kepentingan pengurusan dan kecekapan tenaga dimana pelabelan kelengkapan elektrik telah diperkenalkan oleh Kerajaan melalui ST sejak 2013.

Pelancaran bagi program SAVE 2.0 telah dirancang untuk dilaksanakan pada 2021. Program ini diharapkan akan mendapat sambutan daripada penjual kelengkapan elektrik, platform e-Dagang serta orang ramai bagi mencapai hasrat kelestarian tenaga bagi pengurangan karbon.

During the Budget 2021 presentation on 6 November 2020, the YB Minister of Finance announced the implementation of the Sustainability Achieved Via Energy Efficiency (SAVE) 2.0 programme to grant e-rebates of RM200 to domestic households that purchase energy efficient air conditioners or refrigerators with five (5) and four (4) star ratings.

KeTSA appointed SEDA Malaysia as the lead agency for the programme and the Commission as a strategic partner. Among the main objectives of the SAVE 2.0 programme were:

- *To support the Government's aspirations to promote energy savings and efficiency, low carbon and sustainable energy initiatives that will indirectly support Malaysia in achieving its carbon reduction targets.*
- *To increase the total number of five (5) and four (4) star energy efficient electrical appliances in the market.*
- *To provide cost saving benefits for the purchase of appliances and monthly electricity bills to the public.*
- *To enhance public awareness on the importance of energy management and efficiency wherein the electrical appliance labelling initiative was introduced by the Government through the Commission since 2013.*

The SAVE 2.0 programme will be implemented in 2021 and is expected to attract electrical appliance vendors, e-Commerce platforms as well as the general public in achieving energy sustainability to reduce carbon emissions.

04 MENINGKATKAN KECEKAPAN EKONOMI DAN KEMAMPUAN
ENHANCING ECONOMIC EFFICIENCY AND AFFORDABILITY

SEMAKAN KADAR TARIF ASAS ELEKTRIK DI SEMENANJUNG DI BAWAH MEKANISME KAWAL SELIA BERASASKAN INSENTIF (IBR) BAGI TEMPOH KAWAL SELIA KETIGA (RP3) TAHUN 2022 KE 2024

REVIEW OF THE ELECTRICITY BASE TARIFF RATES IN THE PENINSULA UNDER THE INCENTIVE-BASED REGULATION (IBR) MECHANISM FOR THE THIRD REGULATORY PERIOD (RP3) FROM 2022 TO 2024

Berikutan penularan pandemik Covid-19 yang telah memberikan kesan terhadap industri pembekalan elektrik negara, Kerajaan pada 18 Disember 2020 telah membuat keputusan dan bersetuju dengan cadangan pelanjutan pelaksanaan mekanisme Kawal Selia Berasaskan Insentif (IBR) bagi tempoh kawal selia kedua (RP2) pada 2021 di Semenanjung untuk berakhir pada 31 Disember 2021.

Sehubungan dengan itu, semakan kadar tarif asas elektrik di Semenanjung di bawah mekanisme IBR bagi tempoh RP3 telah ditangguhkan ke 2021 iaitu merujuk kepada tempoh pelaksanaan IBR RP3 daripada 2022 hingga 2024.

Beberapa sesi perbincangan di antara ST, pakar perunding lantikan ST iaitu *Economic Consulting Associates* (ECA) dan Tenaga Nasional Berhad (TNB) telah dirancang untuk diadakan pada 2021 bagi memuktamadkan garis masa bagi proses semakan kali ini.

Proses semakan akan dimulakan dengan cadangan penambahbaikan *Guidelines on Electricity Tariff Determination under Incentive-Based Regulation (IBR) for Peninsular Malaysia (RIG)*. Semakan akan diteruskan pada 2021 dengan TNB dijangka mengemukakan bahagian pertama cadangan semakan kadar tarif asas elektrik di Semenanjung di bawah mekanisme IBR bagi RP3 pada awal 2021 meliputi perkara-perkara berikut:

- Cadangan Kadar *Weighted Average Cost of Capital* (WACC).
- Cadangan Kadar Pengukur Prestasi IBR RP3.
- Cadangan mengenai *Corporate Charging Methodology*.
- Cadangan dari *Single Buyer* mengenai Kos Penjanaan bagi RP3.

Bahagian kedua dan ketiga cadangan semakan ini akan turut dikemukakan oleh TNB pada suku tahun pertama 2021. Proses semakan terperinci berhubung cadangan ini akan dilaksanakan oleh ST bersama pihak perunding untuk dimuktamadkan pada suku tahun ketiga 2021.

As a result of the Covid-19 pandemic's impact on the country's electricity supply industry, the Government, on 18 December 2020, agreed to the extension of the Incentive-Based Regulation (IBR) mechanism for the second regulatory period (RP2) in the Peninsula to 31 December 2021.

In line with this, the revision of the electricity base tariff rates in the Peninsula under the IBR mechanism for the third regulatory period (RP3) was postponed to 2021, with the implementation period from 2022 to 2024.

Several discussion sessions between the Commission, its appointed consultant namely the Economic Consulting Associates (ECA), and Tenaga Nasional Berhad (TNB), will be held in 2021 to finalise the timeline for the review process.

The review process will begin with the proposed improvements to the Guidelines on Electricity Tariff Determination under Incentive-Based Regulation (IBR) for Peninsula Malaysia (RIG) and will continue throughout 2021. TNB is expected to submit the first part of the proposed revision of the electricity base tariff rates in the Peninsula under the IBR mechanism for RP3 in early 2021, which will cover the following:

- *The Proposed Weighted Average Cost of Capital (WACC) Rate.*
- *The Proposed IBR RP3 Performance Measurement Rate.*
- *Recommendations on the Corporate Charging Methodology.*
- *Proposal from Single Buyer on the Generation Cost for RP3.*

The second and third parts of this review proposal will also be submitted by TNB in the first quarter of 2021. A detailed review process of the proposal will be carried out by the Commission together with its consultant, and will be finalised in the third quarter of 2021.

PELAKSANAAN TEMPOH LANJUTAN MEKANISME IBR UNTUK TEMPOH RP2 BAGI TNB
IMPLEMENTATION OF THE IBR MECHANISM EXTENSION PERIOD FOR THE RP2 PERIOD FOR TNB

Industri pembekalan elektrik negara telah turut terkesan berikutan penularan pandemik Covid-19, iaitu berlakunya ketidaktentuan permintaan tenaga elektrik lanjutan daripada arahan Kerajaan berkaitan pelaksanaan tempoh Perintah Kawalan Pergerakan (PKP). Dalam keadaan ketidakstabilan ekonomi dunia, tempoh pemulihan ekonomi negara tidak dapat dipastikan di samping harga bahan api dunia dilihat tidak stabil. Faktor-faktor tersebut adalah merupakan antara data-data utama dalam semakan kadar tarif asas elektrik TNB di bawah mekanisme IBR.

Setelah meneliti kekangan yang dihadapi oleh industri pembekalan elektrik dan mengambil kira sentimen rakyat serta sosio-ekonomi secara holistik, beberapa siri perbincangan telah diadakan bersama pihak TNB mengenai cadangan penangguhan tempoh IBR bagi RP3 yang pada awalnya dirancangkan untuk bermula pada 2021 hingga 2023. ST berpandangan bahawa terdapat keperluan untuk menyemak semula proses semakan kadar tarif asas elektrik bagi tempoh asal RP3 yang telah dikemukakan oleh TNB pada Disember 2019 lalu, di samping cadangan untuk melanjutkan tempoh RP2 selama setahun.

Merujuk kepada cadangan pelanjutan IBR bagi RP2 pada 2021 untuk pelaksanaan mekanisme IBR di Semenanjung yang akan berakhir pada 31 Disember 2021 seperti yang dinyatakan sebelum ini, kadar purata tarif asas elektrik TNB dikekalkan pada kadar 39.45 sen/kWj bagi tempoh lanjutan RP2 (tahun 2021) di bawah IBR. Beberapa parameter lain juga telah dipersetujui bagi penetapan tarif elektrik bagi tempoh lanjutan RP2.

The country's electricity supply industry was affected by the Covid-19 pandemic particularly following the implementation of the Movement Control Order (MCO) by the Government which led to uncertainties in electricity demand. During this time of global economic instability, the prospects of Malaysia's economic recovery was uncertain while global fuel prices were unstable. These factors were among the key data in the review of TNB's base electricity tariff rates under the IBR mechanism.

After examining the constraints faced by the electricity supply industry as well as holistically taking into account the sentiments of the public and the socio-economic landscape, a series of discussions were held with TNB on the proposed postponement of the IBR RP3 period, which was initially scheduled to commence from 2021 until 2023. The Commission observed that there was a need to revisit the electricity base tariff rates review process for the original RP3 period submitted by TNB in December 2019, in addition to the proposal to extend the RP2 period for a year.

TNB's average electricity base tariff rate was maintained at 39.45 sen/kWh for the extended period of RP2 (2021) under the IBR mechanism in the Peninsula which will end on 31 December 2021. Several other parameters have also been agreed upon for the setting of the electricity tariffs for the extended RP2 period.

Parameter Penetapan Tarif Elektrik bagi Tempoh Lanjutan IBR bagi RP2
Electricity Tariff Setting Parameters for the Extended Period under the RP2 of the IBR

Parameter bagi Tempoh Lanjutan IBR RP2 (Tahun 2021) *Parameter for the IBR RP2 Extension Period (2021)*	**Keputusan Kerajaan** *Government's Decision*
Kadar Kawal Selia *Weighted Average Cost of Capital* (WACC) / *Regulatory Rate of the Weighted Average Cost of Capital (WACC)*	**7.3%**
Unjuran Unit Permintaan Elektrik / *Electricity Demand Unit Forecast*	**113,909 GWj /** *GWh*
Andaian Harga Bahan Api Asas Bagi Kos Penjanaan Elektrik *(Single Buyer Generation Costs)* / *Estimated Base Fuel Price for Electricity Generation Cost (Single Buyer Generation Costs)*	**Gas: RM27.20 / mmBTU** **Arang Batu /** *Coal*: **USD 67.45 / MT** **Forex: 4.212 RM / USD**
Perbelanjaan Modal (CAPEX) / *Capital Expenditure (CAPEX)*	**RM7,295.7 juta /** *million*

Parameter bagi Tempoh Lanjutan IBR RP2 (Tahun 2021) *Parameter for the IBR RP2 Extension Period (2021)*	**Keputusan Kerajaan** *Government's Decision*
Perbelanjaan Operasi (OPEX) / *Operational Expenditure (OPEX)*	**RM6,304.6 juta /** *million*
Impak Kepada Pengguna (Tiada Perubahan ke atas Struktur Jadual Tarif Semasa) / *Impact on Consumers (No Changes to the Current Tariff Schedule Structure)*	Tiada Impak Kenaikan Tarif / *No Impact on the Tariff Increased*

Selain daripada itu, semakan semula kadar tarif asas bagi tempoh RP3 telah ditangguhkan selama setahun menjadikan tempoh baharu bagi pelarasan tarif asas elektrik di Semenanjung ialah dari 2022 hingga 2024.

In addition, the base tariff rates revision for the RP3 period was postponed for a year whereby the new period for the electricity base tariff adjustments in the Peninsula is from 2022 to 2024.

SEMAKAN KADAR TARIF ASAS ELEKTRIK DI KAWASAN PERINDUSTRIAN *KULIM HI-TECH PARK* (KHTP) DI BAWAH MEKANISME IBR BAGI 2021 - LANJUTAN TEMPOH KAWAL SELIA PERTAMA (RP1)

REVIEW OF THE ELECTRICITY BASE TARIFF RATES IN KULIM HI-TECH PARK (KHTP) INDUSTRIAL AREA UNDER THE IBR MECHANISM FOR 2021 - EXTENSION OF THE FIRST REGULATORY PERIOD (RP1)

Pelaksanaan penetapan tarif berdasarkan mekanisme IBR ke atas NUR Generation Sdn. Bhd. dan NUR Distribution Sdn. Bhd. (NUR) telah bermula sejak Ogos 2016 hingga Disember 2017 sebagai tempoh percubaan, di mana tempoh RP1 telah bermula pada 1 Januari 2018 hingga 31 Disember 2020.

Tempoh kawal selia berikutnya telah dijadualkan untuk bermula pada 2021 hingga 2023. Walau bagaimanapun, berikutan penularan pandemik Covid-19 dan arahan Kerajaan menghadkan pergerakan melalui pelaksanaan PKP, berlaku ketidaktentuan permintaan tenaga elektrik pengguna dan menyukarkan pihak NUR menetapkan unjuran keperluan hasil dalam semakan kadar tarif asas elektrik NUR di bawah mekanisme IBR.

Berdasarkan kekangan tersebut, pihak Kerajaan pada 18 Disember 2020 telah meluluskan penangguhan satu tahun ke atas semakan semula mekanisme IBR bagi tempoh RP2. Tempoh baharu RP2 bagi penetapan tarif elektrik di KHTP yang asalnya adalah dari 2021 hingga 2023 telah dianjakkan kepada 2022 hingga 2024.

Pelaksanaan penangguhan tempoh IBR RP2 selama setahun ini telah diluluskan oleh pihak Kerajaan berdasarkan komponen utama berikut:

- Mengekalkan kadar tarif asas sebanyak 35.70 sen/kWj dan jadual tarif semasa, seperti dalam tempoh IBR RP1.
- Mengekalkan kadar WACC pada kadar 8.5%.
- Menetapkan lain-lain parameter seperti unjuran permintaan elektrik, andaian harga asas bahan api gas serta jumlah perbelanjaan modal dan perbelanjaan operasi yang dibenarkan dalam tahun 2021.

The IBR tariff setting mechanism for NUR Generation Sdn. Bhd. and NUR Distribution Sdn. Bhd. (NUR) was implemented for a trial period from August 2016 to December 2017, whereby RP1 began from 1 January 2018 to 31 December 2020.

The subsequent regulatory period was scheduled to start in 2021 to 2023. However, in the review of its electricity base tariff rates under the IBR mechanism, NUR faced complications in determining the revenue requirement projections due to uncertainty in the electricity demand of consumers as a result of the Covid-19 pandemic and the Government's directive to restrict movement through the implementation of MCO.

To address this issue, the Government, on 18 December 2020, approved a one-year postponement on the review of the IBR mechanism for the RP2 period from 2021 to 2023, to 2022 until 2024.

The one-year postponement of the IBR RP2 period was approved by the Government based on the following main components:

- *The base tariff rate of 35.70 sen/kWh and the current tariff schedule to be maintained as in the IBR RP1 period.*
- *The WACC rate to be maintained at 8.5%.*
- *Other parameters, such as electricity demand projections, gas fuel base price estimations, as well as total capital expenditures and operational expenditures allowed in 2021 are to be set.*

- Menyelaras sebarang perbelanjaan sebenar yang dilakukan oleh pihak NUR bagi tempoh asal RP1 (2018-2020) dan tempoh lanjutan RP1 (2021) menerusi *Annual Revenue Requirement* (ARR) semasa semakan penuh kadar tarif asas bagi tempoh RP2 di KHTP.

Dengan mengambil kira impak daripada penularan pandemik Covid-19 yang memberi kesan langsung kepada ekonomi negara khususnya terhadap operasi pengguna-pengguna NUR di KHTP, lanjutan tempoh RP1 selama setahun ini akan memberi masa yang cukup kepada pihak NUR untuk mengunjurkan komponen utama dalam semakan kadar tarif asas elektrik di bawah mekanisme IBR bagi RP2 dengan lebih tepat. Selain itu, pengguna juga tidak mengalami sebarang kenaikan tarif elektrik dalam tempoh lanjutan selama setahun ini, di mana kadar tarif asas elektrik pengguna dikekalkan.

- *Any actual expenditure incurred by NUR for the original period of RP1 (2018-2020) and the extended period of RP1 (2021) through the Annual Revenue Requirement (ARR) during the full review of the base tariff rates for the RP2 period in KHTP to be coordinated.*

Taking into account the impact of the Covid-19 pandemic on the national economy, especially on the operations of NUR consumers in KHTP, the one-year extension of RP1 will give NUR sufficient time to project precise key components in the review of electricity base tariff rates under the IBR mechanism for RP2. In addition, consumers will not experience any increase in electricity tariffs during the one-year extension period as the electricity base tariff rates will be maintained.

PELAKSANAAN TEMPOH PERCUBAAN DAN CADANGAN PELAKSANAAN PENUH MEKANISME IBR UNTUK TEMPOH RP1 BAGI SABAH ELECTRICITY SDN. BHD. (SESB) DI SABAH

IMPLEMENTATION OF A TRIAL PERIOD AND PROPOSAL FOR THE FULL IMPLEMENTATION OF THE IBR MECHANISM FOR THE RP1 PERIOD FOR SABAH ELECTRICITY SDN. BHD. (SESB) IN SABAH

Pada 26 Ogos 2020, YB Menteri Tenaga dan Sumber Asli telah bersetuju agar pelaksanaan bagi tempoh percubaan mekanisme IBR ini dapat dimulakan bermula 1 September 2020 hingga 31 Disember 2020, iaitu selama empat (4) bulan. Di samping itu juga, tempoh percubaan ini turut mengambil kira beberapa cadangan yang telah dikemukakan oleh ST melalui memorandum bertarikh 13 November 2020. Sepanjang tempoh percubaan IBR tersebut, purata tarif asas masih dikekalkan pada kadar 34.52 sen/kWj.

Sepanjang 2020 dan sebagai persediaan ke arah pelaksanaan IBR RP1 Sabah Electricity Sdn. Bhd. (SESB) ini, pelbagai inisiatif telah dijalankan oleh pihak SESB dan ST. Selain daripada penyediaan *Revenue Requirement Model* (RRM) dan cadangan *Tariff Design (Rebalancing)* bagi semakan jadual tarif sedia ada, pemantauan prestasi ke atas SESB juga dijalankan dan laporan prestasi turut dibincangkan melalui beberapa siri Mesyuarat Jawatankuasa IBR.

Ianya meliputi penyediaan dokumen *Service Level Agreement* (SLA) oleh SESB serta penyediaan model *Imbalance Cost Pass-Through* (ICPT) di mana beberapa siri perbincangan telah giat dijalankan oleh ST dan SESB untuk memuktamadkannya di peringkat Kerajaan pada 2021.

On 26 August 2020, the YB Minister of Energy and Natural Resources agreed to kick-start the IBR mechanism trial period to be implemented for a four-month period, starting from 1 September 2020 to 31 December 2020. In addition, the trial period also took into account proposals submitted by the Commission through a memorandum dated 13 November 2020. During this IBR trial period, the average base tariff was maintained at 34.52 sen/kWh.

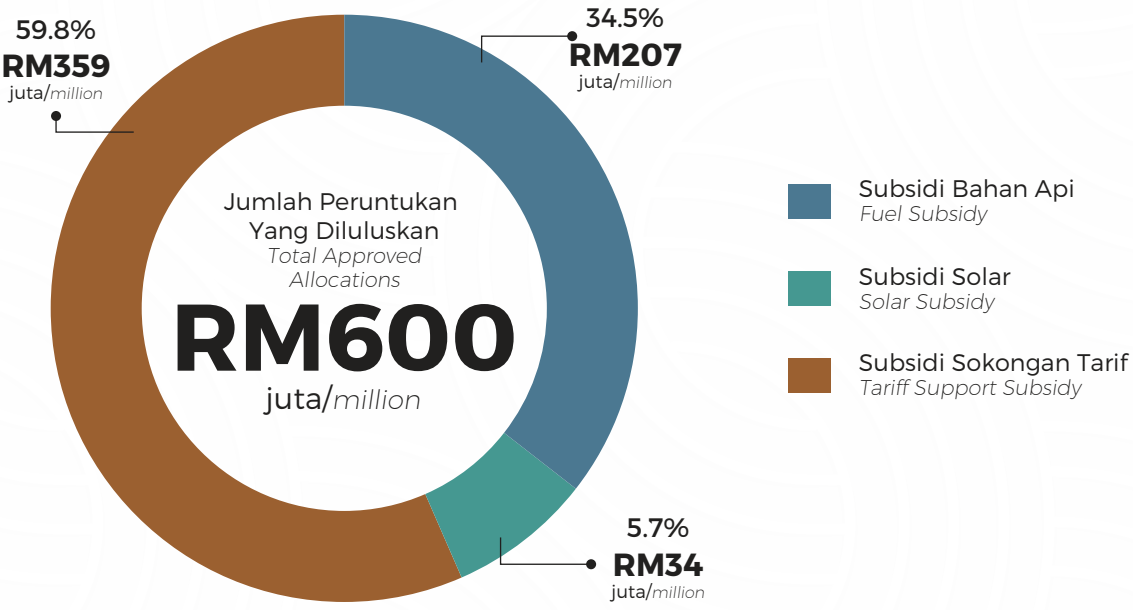
Various initiatives were carried out by Sabah Electricity Sdn. Bhd. (SESB) and the Commission throughout 2020 and in preparation for the implementation of IBR RP1 for SESB. Aside from preparing the Revenue Requirement Model (RRM) and proposed Tariff Design (Rebalancing) for the review of the existing tariff schedule, performance monitoring of SESB was also conducted whereby the performance report was discussed during a series of IBR Committee Meetings.

This involved the preparation of the Service Level Agreement (SLA) documents by SESB, as well as the preparation of the Imbalance Cost Pass-Through (ICPT) model whereby a series of discussions were actively conducted by the Commission and SESB to be finalised at the Government level in 2021.

Dalam masa yang sama, Kerajaan Persekutuan juga menyalurkan bantuan subsidi kepada SESB dengan mengambil kira tiada kenaikan tarif elektrik di Sabah dan purata tarif asas di Sabah masih kekal pada kadar 34.52 sen/kWj. Subsidi ini adalah bagi menampung kos bekalan elektrik sebenar yang lebih tinggi daripada kadar tarif semasa. Jumlah subsidi yang diluluskan kepada SESB bagi 2020 adalah berjumlah RM600 juta yang meliputi subsidi bahan api, subsidi solar dan subsidi sokongan tarif.

At the same time, the Federal Government provided assistance in the form of subsidies to SESB, taking into account zero increments in electricity tariffs in Sabah and the maintaining of the average base tariff at 34.52 sen/kWh. The subsidies were to cover the actual electricity supply costs that were higher than the current tariff rates. In 2020, the total subsidies approved for SESB was RM600 million covering fuel, solar and tariff support subsidies .

Pecahan Jumlah Peruntukan Subsidi yang Diluluskan kepada SESB, 2020
Breakdown of Total Subsidy Allocations Approved for SESB, 2020



PELAKSANAAN *IMBALANCE COST PASS-THROUGH* (ICPT) BAGI TNB DI SEMENANJUNG
IMPLEMENTATION OF THE IMBALANCE COST PASS-THROUGH (ICPT) FOR TNB IN THE PENINSULA

Mekanisme ICPT merupakan sebahagian daripada kerangka kerja IBR bagi menetap dan melaraskan tarif elektrik di Semenanjung bagi tempoh asal RP2 iaitu bagi 2018 hingga 2020.

The ICPT mechanism is part of the IBR framework to determine and adjust electricity tariffs in the Peninsula for the original RP2 period from 2018 to 2020.

Di bawah mekanisme ICPT ini, kadar tarif elektrik asas bagi 2018 hingga 2020 ditentukan dengan menetapkan harga penanda aras bahan api arang batu dan gas dalam tempoh tersebut. Sebarang perbezaan kos sebenar dengan harga penanda aras bahan api dalam penetapan tarif asas akan diselaraskan setiap enam (6) bulan di bawah mekanisme ini, sama ada dalam bentuk surcaj atau rebat, bergantung kepada kos bahan api dan kos penjanaan lain dalam tempoh tersebut.

Mesyuarat Jawatankuasa ICPT telah diadakan sebanyak dua (2) kali pada tahun ini, masing-masing pada 20 April 2020 dan 20 Oktober 2020 bagi membincangkan jumlah ICPT yang perlu dilepaskan kepada pengguna samada dalam bentuk rebat atau surcaj.

Under this ICPT mechanism, the electricity base tariff rates for 2018 to 2020 were determined by benchmarking the price of coal and gas during that period. Any difference in the actual fuel costs with the benchmarked fuel price in the base tariff setting will be adjusted every six (6) months under the mechanism, either in the form of surcharges or rebates depending on fuel costs and other generation costs during that period.

Two (2) ICPT Committee Meetings were held this year, on 20 April 2020 and 20 October 2020 respectively, to discuss the ICPT amount to be released to consumers, either in the form of rebates or surcharges.

PELARASAN ICPT TNB BAGI TEMPOH JANUARI HINGGA JUN 2020

Kerajaan pada 20 November 2019 telah bersetuju dengan cadangan pelarasan tarif elektrik di bawah mekanisme ICPT di Semenanjung bagi tempoh 1 Januari 2020 hingga 30 Jun 2020 iaitu seperti berikut:

- Kadar surcaj tarif elektrik kepada pengguna bukan domestik diturunkan daripada 2.55 sen/kWj kepada 2.00 sen/kWj, iaitu pengurangan sebanyak 0.55 sen/kWj, khususnya kepada pengguna komersial, industri dan lain-lain.
- Pengguna domestik (kediaman) dikecualikan daripada pengenaan surcaj elektrik dan ditampung melalui dana Kumpulan Wang Industri Elektrik (KWIE) iaitu sebanyak 0.69 sen/kWj.

TNB ICPT ADJUSTMENT FOR THE PERIOD FROM JANUARY TO JUNE 2020

On 20 November 2019, the Government agreed to the proposed electricity tariff adjustment under the ICPT mechanism in the Peninsula for the period from 1 January 2020 to 30 June 2020 as follows:

- *The electricity tariff surcharge rate for non-domestic consumers was reduced from 2.55 sen/kWh to 2.00 sen/kWh, equivalent to a reduction of 0.55 sen/kWh, especially for the commercial and industrial consumers and others.*
- *Domestic consumers (residential) were exempted from the imposition of electricity surcharge and will be covered by the Electricity Industry Fund (KWIE) at 0.69 sen/kWh.*

PELARASAN ICPT TNB BAGI TEMPOH JULAI HINGGA DISEMBER 2020

Kerajaan pada 24 Jun 2020 telah bersetuju dengan cadangan pelarasan tarif elektrik di bawah mekanisme ICPT di Semenanjung bagi tempoh 1 Julai 2020 hingga 31 Disember 2020 iaitu seperti berikut:

- Tiada sebarang surcaj dikenakan kepada semua pengguna elektrik di Semenanjung bagi tempoh 1 Julai 2020 hingga 31 Disember 2020.
- Ini bermakna pengguna daripada kategori komersial dan industri akan menikmati penurunan kadar surcaj sebanyak 2.00 sen/kWj, manakala pengguna domestik terus membayar bil elektrik pada kadar sedia ada kerana kadar tarif dikekalkan tanpa sebarang surcaj.

TNB ICPT ADJUSTMENT FOR THE PERIOD FROM JULY TO DECEMBER 2020

On 24 June 2020, the Government agreed to the proposed electricity tariff adjustment under the ICPT mechanism in the Peninsula for the period from 1 July 2020 to 31 December 2020 as follows:

- *No surcharge was imposed on all electricity consumers in the Peninsula from 1 July 2020 to 31 December 2020.*
- *This meant that consumers from the commercial and industrial categories will enjoy a surcharge rate reduction of 2.00 sen/kWh, while domestic consumers will continue to pay electricity bills at the existing tariff rates as they were maintained without any surcharges..*

PELAKSANAAN ICPT BAGI NUR DISTRIBUTION SDN. BHD. (NUR DISTCO) DI KAWASAN PERINDUSTRIAN *KULIM HI-TECH PARK* (KHTP)

IMPLEMENTATION OF ICPT FOR NUR DISTRIBUTION SDN. BHD. (NUR DISTCO) IN THE KULIM HI-TECH PARK (KHTP) INDUSTRIAL AREA

Sebagaimana pelaksanaan mekanisme ICPT di Semenanjung oleh pihak TNB, ianya turut dilaksanakan ke atas NUR Distco di kawasan perindustrian *Kulim Hi-Tech Park* (KHTP). Mekanisme ICPT ini membolehkan NUR Distco mengenalpasti kos sebenar berbanding harga penanda aras bahan api yang ditetapkan dalam penetapan tarif asas, yang disebabkan oleh kenaikan dan penurunan kos bahan api dan penjanaan dalam tarif elektrik setiap enam (6) bulan. Perkara berhubung jumlah ICPT yang perlu dilepaskan kepada pengguna di KHTP samada rebat atau surcaj turut dibincangkan dalam Mesyuarat Jawatankuasa ICPT.

The ICPT mechanism was also implemented for NUR Distco in the Kulim Hi-Tech Park (KHTP) industrial area. This enables NUR Distco to identify the actual fuel costs in comparison to the benchmarked fuel price determined in the base tariff setting which was the result of fuel and generation cost fluctuations in electricity tariffs that occur every six (6) months. Matters regarding the amount of ICPT to be channelled to consumers at KHTP, whether in the form of rebates or surcharges, were also discussed in the ICPT Committee Meeting.

PELARASAN ICPT NUR DISTCO BAGI TEMPOH JANUARI HINGGA JUN 2020

Pelarasan tarif elektrik di bawah mekanisme ICPT di KHTP dengan kadar surcaj 5.90 sen/kWj bagi tempoh Januari hingga Jun 2020 dilaksanakan seperti berikut:

- Kadar purata tarif elektrik asas yang ditetapkan kepada pengguna di KHTP dikekalkan pada kadar 35.70 sen/kWj.
- Pelarasan tarif elektrik di bawah mekanisme ICPT di KHTP dilepaskan kepada semua pengguna bukan domestik sahaja dengan kadar surcaj sebanyak 5.90 sen/kWj.
- Tiada pembiayaan daripada dana KWIE diperlukan memandangkan perbezaan tarif NUR dan tarif industri TNB bagi tempoh ICPT ini adalah di bawah paras 8%.

NUR DISTCO ICPT ADJUSTMENT FOR THE PERIOD FROM JANUARY TO JUNE 2020

The electricity tariff adjustment under the ICPT mechanism at KHTP with a surcharge rate of 5.90 sen/kWh was implemented for the period from January to June 2020 as follows:

- *The average base electricity tariff rate set for consumers at KHTP was maintained at 35.70 sen/kWh.*
- *Electricity tariff adjustment under the ICPT mechanism at KHTP was channelled to non-domestic consumers only with a surcharge rate of 5.90 sen/kWh.*
- *No funding from the KWIE fund was required as the difference between the NUR tariff and TNB industry tariff for the ICPT period was below the 8% level.*

PELARASAN ICPT NUR DISTCO BAGI TEMPOH JULAI HINGGA DISEMBER 2020

Bagi tempoh Julai hingga Disember 2020 pula, pelarasan tarif elektrik di bawah mekanisme ICPT di KHTP dengan kadar surcaj 4.74 sen/kWj dilaksanakan seperti berikut:

- Kadar purata tarif elektrik asas yang ditetapkan kepada pengguna di KHTP dikekalkan pada kadar 35.70 sen/kWj.
- Pelarasan tarif elektrik di bawah mekanisme ICPT di KHTP dilepaskan kepada semua pengguna bukan domestik sahaja dengan kadar surcaj sebanyak 2.99 sen/kWj.

NUR DISTCO ICPT ADJUSTMENT FOR THE PERIOD FROM JULY TO DECEMBER 2020

The electricity tariff adjustment under the ICPT mechanism at KHTP with a surcharge rate of 4.74 sen/kWh was implemented for the period from July to December 2020 as follows:

- *The average base electricity tariff rate set for consumers at KHTP was maintained at 35.70 sen/kWh.*
- *Electricity tariff adjustment under the ICPT mechanism at KHTP was channelled to non-domestic consumers only with a surcharge rate of 2.99 sen/kWj.*

- Baki kos ICPT sebanyak 1.75 sen/kWj ditampung daripada dana KWIE memandangkan perbezaan tarif NUR dan tarif industri TNB bagi tempoh ICPT kali ini melebihi had yang telah ditetapkan sebanyak 5% (had telah disemak semula kepada 5% berbanding 8% sebelum ini).

- *The remaining ICPT cost of 1.75 sen/kWh was covered from the KWIE fund as the difference between the NUR tariff and TNB industry tariff for the ICPT period exceeded the set limit of 5% (the limit was revised to 5% from 8% previously).*

MELANCARKAN PROSES LIBERALISASI INDUSTRI PEMBEKALAN GAS ASLI
LIBERALISATION OF THE NATURAL GAS SUPPLY INDUSTRY PROCESS

PELAKSANAAN IBR DALAM TEMPOH RP1 BAGI LNG REGASIFICATION TERMINAL (SG. UDANG) SDN. BHD. (RGTSU), PENGERANG LNG (TWO) SDN. BHD. (RGTP), PETRONAS GAS BHD. (PGB) DAN GAS MALAYSIA DISTRIBUTION SDN. BHD. (GMD)

Kadar purata tarif asas bagi penggunaan kemudahan-kemudahan gas dalam tempoh kawal selia pertama (RP1) yang ditetapkan di bawah rangka kerja kawal selia berasaskan insentif (IBR) mula berkuatkuasa pada 1 Januari 2020 dan akan berakhir pada 31 Disember 2022.

IMPLEMENTATION OF IBR DURING RP1 FOR LNG REGASIFICATION TERMINAL (SG. UDANG) SDN. BHD. (RGTSU), PENGERANG LNG (TWO) SDN. BHD. (RGTP), PETRONAS GAS BHD. (PGB) AND GAS MALAYSIA DISTRIBUTION SDN. BHD. (GMD)

The average base tariff rates for the utilisation of gas facilities during RP1 under the IBR framework came into effect on 1 January 2020 and will end on 31 December 2022.

Purata Tarif Asas bagi Penggunaan Kemudahan-Kemudahan Gas dalam Tempoh RP1
Average Base Tariff for the Utilisation of Gas Facilities during RP1

Pemegang Lesen / *Licensee*	**Kemudahan Gas /** *Gas Facility*	**Purata Tarif Asas /** *Average Base Tariff*
Regasification Terminal (Sg Udang) Sdn. Bhd. (RGTSU)	Terminal penggasan semula / *Regasification terminal*	**RM3.455 / GJ / hari /** *day*
Pengerang LNG (Two) Sdn. Bhd. (RGTP)	Terminal penggasan semula / *Regasification terminal*	**RM3.485 / GJ / hari /** *day*
Petronas Gas Bhd. (PGB)	Talian paip penghantaran / *Transmission pipeline*	**RM1.129 / GJ / hari /** *day*
Gas Malaysia Distribution Sdn. Bhd. (GMD)	Talian paip pengagihan / *Distribution pipeline*	**RM1.573 / GJ / hari /** *day*

Di bawah rangka kerja IBR, pemantauan secara berkala dilaksanakan ke atas prestasi pendapatan tahunan yang dibenarkan bagi penetapan purata tarif asas untuk tempoh RP1. Semakan ke atas kadar purata tarif asas dilaksanakan melalui mekanisme pelarasan pendapatan jika terdapat perbezaan di antara pendapatan tahunan yang dibenarkan dan pendapatan tahunan sebenar.

Under the IBR framework, periodic monitoring is carried out on the allowed annual revenue performance in order to set the average base tariffs for RP1. The revision of the average base tariff rates is carried out through a revenue adjustment mechanism whenever there is a difference between the allowed annual revenue and the actual annual revenue.

Manakala, amaun pelarasan pendapatan pula diambilkira melalui peningkatan atau penurunan kadar purata tarif yang dibenarkan pada tahun berikutnya. Pelarasan pendapatan tahunan dalam tempoh RP1 melibatkan pelarasan bagi komponen-komponen berikut:

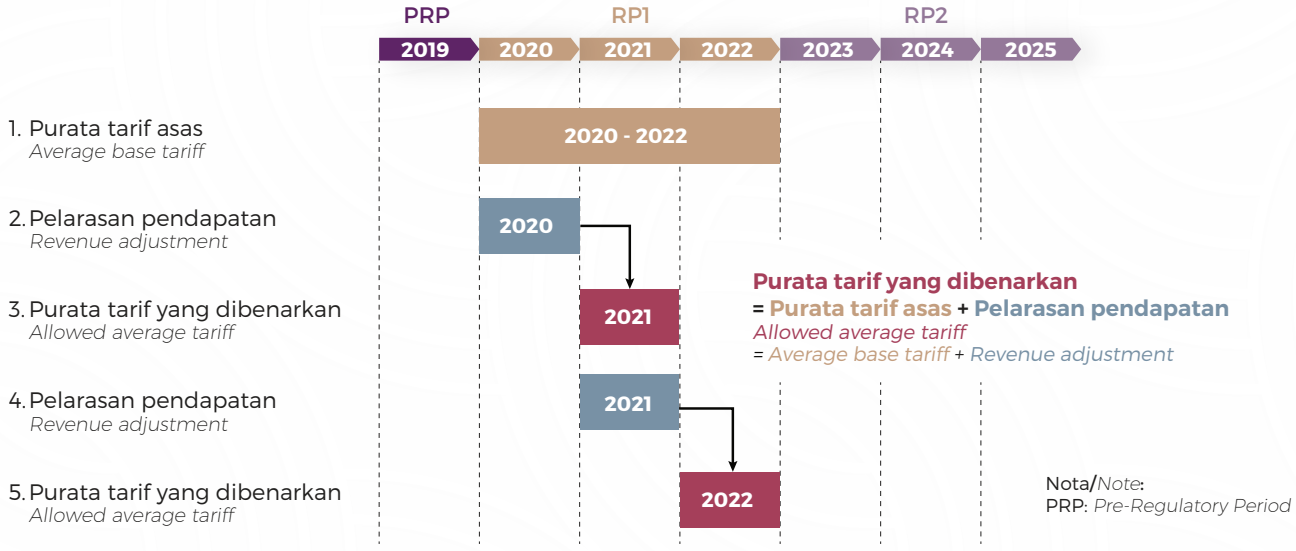
- *Revenue Cap*
- *Excluded Services*
- *Tariff Cap*
- *Internal Gas Consumption* (IGC)

Meanwhile, the revenue adjustment amount is taken into account based on the increase or decrease of the allowable average tariff rates for the following year. The annual revenue adjustment during RP1 involved adjustments to the following components:

- *Revenue Cap*
- *Excluded Services*
- *Tariff Cap*
- *Internal Gas Consumption (IGC)*

Pelaksanaan bagi Mekanisme Pelarasan Pendapatan dan Semakan ke Atas Purata Tarif Asas bagi Penggunaan Kemudahan Gas dalam Tempoh RP1

Implementation of the Revenue Adjustment Mechanism and Review of the Average Base Tariff for the Utilisation of Gas Facilities during RP1



Selain penetapan purata tarif asas dan pelaksanaan mekanisme pelarasan pendapatan, petunjuk-petunjuk prestasi turut ditetapkan untuk tempoh RP1 seperti di bawah.

In addition to the setting of the average base tariff and the implementation of the revenue adjustment mechanism, performance indicators were also set for RP1 as below.

Petunjuk Prestasi RGTSU, RGTP dan PGB dalam Tempoh RP1

Performance Indicators for RGTSU, RGTP and PGB during RP1

Pemegang lesen / *Licensee*	**Petunjuk Prestasi /** *Performance Indicator*	**Wajaran /** *Weightage*	**Jenis /** *Type*	**Sasaran Penalti /** *Penalty Target*	**Had Penalti /** *Penalty Cap*
RGTSU	Ketersediaan / *Availability*	**50%**	Penalti sahaja / *Penalty only*	**90.0%**	**78.72%**
	Daya Harap / *Reliability*	**50%**	Penalti sahaja / *Penalty only*	**98.0%**	**86.43%**
RGTP	Ketersediaan / *Availability*	**50%**	Penalti sahaja / *Penalty only*	**90.0%**	**89.88%**
	Daya Harap / *Reliability*	**50%**	Penalti sahaja / *Penalty only*	**98.0%**	**97.88%**

PGB	Ketersediaan / *Availability*	**50%**	Penalti sahaja / *Penalty only*	**99.0%**	**98.89%**
	Daya Harap / *Reliability*	**50%**	Penalti sahaja / *Penalty only*	**99.0%**	**98.91%**

Setiap petunjuk prestasi yang ditetapkan mempunyai tahap sasaran tertentu berserta julat ganjaran dan/ atau penalti sekiranya petunjuk prestasi tersebut berjaya atau gagal dicapai oleh pemegang lesen dalam tempoh RP1.

Each performance indicator has a specific target level set, together with a range of rewards and/or penalties depending on whether the performance indicator was achieved or failed to be achieved by the licensee within the RP1 period.

Petunjuk Prestasi GMD dalam Tempoh RP1
Performance Indicators for GMD during RP1

Petunjuk Prestasi / *Performance Indicator*	**Wajaran /** *Weightage*	**Jenis /** *Type*	**Had Ganjaran /** *Reward Cap*	**Sasaran Ganjaran /** *Reward Target*	**Sasaran Penalti /** *Penalty Target*	**Had Penalti /** *Penalty Cap*
Daya Harap Bekalan - SAIDI (Minit/Pelanggan/Tahun) *Supply Reliability - SAIDI (Minutes/Customer/Year)*	**40%**	Simetri / *Symmetric*	**0**	**1.12**	**11.17**	**16.19**
Integriti Rangkaian (Bil. Kebocoran / 1,000 km Talian Paip) *Network Integrity (No. of Leaks / 1,000 km of Pipeline)*	**35%**	Simetri / *Symmetric*	**0**	**1.5**	**4.0**	**5.5**
Perkhidmatan Pelanggan - Purata Masa Tindak Balas bagi Lima (5) Kejadian Paling Lama (minit) *Customer Service - Average Response Time of the Five (5) Longest Events (minutes)*	**25%**	Penalti sahaja / *Penalty only*	–	–	**60.53**	**63.20**

Tempoh RP1 merupakan tempoh pemantauan ke atas petunjuk-petunjuk prestasi yang ditetapkan dan pemberian ganjaran atau penalti tidak akan dilaksanakan dalam tempoh tersebut. Tempoh RP1 juga merupakan tempoh bagi menambahbaik serta mengkaji kesesuaian petunjuk-petunjuk prestasi tersebut sebelum dilaksanakan sepenuhnya dalam tempoh RP2.

RP1 serves as a monitoring period for the performance indicators set, while rewards or penalties were not implemented during the period. In addition, the RP1 was also a period to further improve and review the suitability of the performance indicators before being fully implemented in RP2.

PENETAPAN HARGA JUALAN GAS ASLI GAS MALAYSIA ENERGY AND SERVICES SDN. BHD. (GMES) DALAM TEMPOH PERALIHAN, 2020-2021

Mulai 1 Januari 2020, harga jualan gas asli Petronas Energy & Gas Trading Sdn Bhd (PEGT) kepada GMES ditetapkan berdasarkan prinsip *willing buyer-willing seller* sepertimana yang diluluskan oleh Kerajaan. Manakala harga jualan gas asli GMES kepada pengguna-pengguna gas di segmen pengagihan untuk tempoh peralihan, 2020-2021 adalah berdasarkan harga yang dikawal selia oleh Kerajaan.

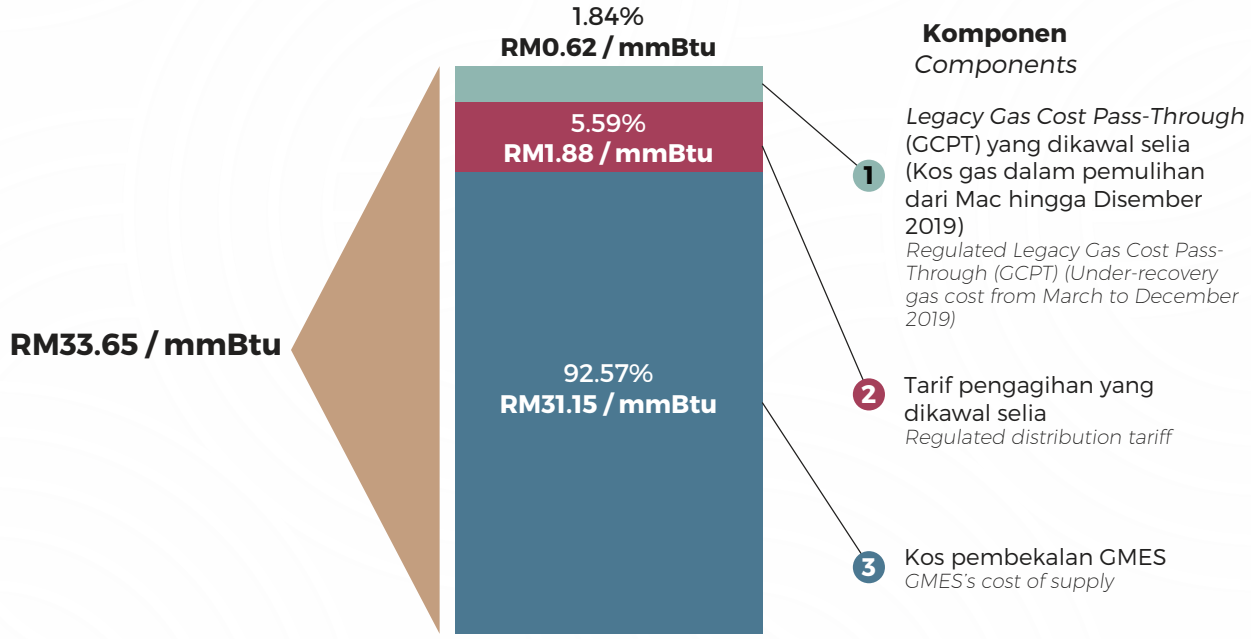
SETTING OF THE SELLING PRICE OF NATURAL GAS BY GAS MALAYSIA ENERGY AND SERVICES SDN. BHD. (GMES) FOR THE TRANSITION PERIOD, 2020-2021

From 1 January 2020, Petronas Energy & Gas Trading Sdn Bhd's (PEGT) selling price of natural gas to GMES was set based on the willing buyer-willing seller principle as approved by the Government. Meanwhile, the selling price of natural gas by GMES to gas consumers in the distribution segment for the transitional period from 2020 to 2021 was based on the price regulated by the Government.

Harga jualan gas asli GMES pada 2020 telah ditetapkan pada satu kadar purata iaitu RM33.65/mmBtu. Penetapan harga jualan gas asli pada kadar tetap untuk tempoh setahun adalah bertujuan untuk memberikan kestabilan harga dan mengurangkan risiko peningkatan harga pasaran yang ketara kepada pembekal dan pengguna gas.

The selling price of natural gas by GMES in 2020 was set at an average rate of RM33.65/mmBtu. The setting of the selling price of natural gas at a fixed rate for a one year period was intended to provide price stability and reduce the risk of a significant increase in the market price for gas suppliers and consumers.

Purata Harga Jualan Gas Asli GMES, 2020
GMES Natural Gas Average Selling Price, 2020



Namun demikian, penularan pandemik Covid-19 pada 2020 telah menyebabkan penurunan harga minyak mentah dunia yang telah, secara tidak langsung, memberi kesan kepada harga gas asli di pasaran antarabangsa. Sehubungan dengan itu, mekanisme penetapan harga jualan gas asli GMES pada satu kadar tetap untuk tempoh setahun telah disemak semula bagi mencerminkan pergerakan harga pasaran gas asli di peringkat Asia dan dunia.

Berdasarkan keputusan Kerajaan pada 20 November 2020, mulai 1 Januari 2021, purata harga jualan gas asli GMES akan disemak secara automatik setiap suku tahunan bagi mencerminkan pergerakan harga pasaran gas asli. Penetapan purata harga jualan gas asli GMES setiap suku tahunan akan mengurangkan risiko kepada pembekal gas jika harga pasaran gas asli meningkat dan akan memberi manfaat kepada pengguna gas jika harga pasaran gas asli menurun. Penetapan purata harga jualan gas asli GMES setiap suku tahunan juga akan mengekalkan daya saing pengguna-pengguna gas sektor industri di pasaran antarabangsa.

The Covid-19 pandemic outbreak in 2020 led to a decline in global crude oil prices which indirectly affected natural gas prices in the international market. In response to this, the one-year fixed rate under the GMES natural gas selling price tariff-setting mechanism was revised to reflect the movement of natural gas prices in Asia and globally.

With reference to the Government's decision on 20 November 2020, starting 1 January 2021, the average selling price of GMES natural gas will be automatically reviewed every quarter to reflect the movements in the natural gas market prices. The setting of the average GMES natural gas selling price on a quarterly basis will reduce the risk to gas suppliers when the natural gas market price increases, while benefiting gas consumers when the natural gas market price falls. This will also maintain the competitiveness within industrial gas consumers in the international market.

GMES pula akan memaklumkan berkenaan harga gas asli yang diunjurkan dan harga gas asli sebenar secara berkala sepanjang 2021 bagi memudahkan pengguna-pengguna gas membuat persediaan serta perancangan untuk penggunaan gas asli pada tahun tersebut.

GMES will also regularly give notifications on the natural gas price projections and actual natural gas prices throughout 2021 to facilitate gas consumers in the preparation and planning of natural gas utilisation for the year.

PEMANTAUAN KOS DAN HARGA BEKALAN ARANG BATU
MONITORING OF THE COST AND PRICE OF COAL SUPPLY

Jawatankuasa Pemantauan Harga dan Kos Arang Batu yang dipengerusikan oleh ST telah bersidang sebanyak empat (4) kali pada tahun ini dalam melaksanakan peranannya untuk memantau kos perolehan arang batu oleh TNB Fuel Services Sdn. Bhd. (TNBF). Jawatankuasa ini turut menetapkan kadar *Applicable Coal Price* (ACP) iaitu harga arang batu yang diisytiharkan kepada stesen-stesen jana kuasa setiap suku tahunan bagi pembekalan arang batu untuk tujuan penjanaan elektrik di Semenanjung. Berbanding 2019, harga arang batu yang ditetapkan bagi 2020 menunjukkan penurunan berikutan penularan pandemik Covid-19 yang menyumbang kepada aktiviti ekonomi global yang perlahan.

The Coal Price and Cost Monitoring Committee chaired by the Commission convened four (4) times this year as part of its role to monitor the costs of coal procurement by TNB Fuel Services Sdn. Bhd. (TNBF). The committee also sets the Applicable Coal Price (ACP), which are the coal prices declared to power stations quarterly for the supply of coal for electricity generation in the Peninsula. Coal prices set for 2020 showed a decline in comparison to 2019 as a result of sluggish global economic activity during the Covid-19 pandemic.

Harga Arang Batu, 2019 & 2020
Coal Prices, 2019 & 2020

Tahun / *Year*	**Tempoh /** *Period*	***Bituminous (RM/MT)***	***Sub-Bituminous (RM/MT)***
2019	Q1 2019	436.26	394.17
	Q2 2019	395.80	355.11
	Q3 2019	360.36	332.07
	Q4 2019	307.60	296.06
	Harga Purata / *Average Price*	**375.01**	**344.35**
2020	Q1 2020	297.68	292.72
	Q2 2020	290.23	274.65
	Q3 2020	246.50	249.60
	Q4 2020	239.29	255.55
	Harga Purata / *Average Price*	**268.43**	**268.13**

Oleh kerana penetapan ACP mempunyai elemen unjuran harga, perbezaan atau jurang di antara harga ACP dengan harga sebenar arang batu yang dibeli daripada pembekal atau *Fuel Price Adjustment* (FPA) akan disalurkan semula kepada pengguna melalui ICPT. Dalam memastikan pelarasan adalah adil dan telus, ST telah melantik syarikat KPMG untuk melaksanakan satu audit terhadap FPA yang melibatkan antara lainnya perolehan arang batu dan kos-kos kargo, pengangkutan, insurans, fi *wharfages* dan *overhead*.

With a price projection component in ACP setting, the difference or gap between the ACP price and the actual price of coal purchased from the supplier or Fuel Price Adjustment (FPA) will be channelled back to the consumer through the ICPT mechanism. To ensure that the adjustments are fair and transparent, the Commission has appointed KPMG to conduct an audit on the FPA, covering coal procurement and cargo costs, transportation, insurance, wharfage and overhead fees.

PENETAPAN HARGA JUALAN DAN PEMBEKALAN GAS ASLI BAGI SEKTOR ELEKTRIK DI SEMENANJUNG

DETERMINATION OF SELLING PRICES AND SUPPLY OF NATURAL GAS FOR THE ELECTRICITY SECTOR IN THE PENINSULA

Dalam meliberalisasikan pasaran bekalan gas di Semenanjung, Kerajaan pada 2017 telah memutuskan agar harga gas bagi sektor elektrik dinaikkan secara automatik sebanyak RM1.50 per mmBtu bagi setiap enam (6) bulan bermula Julai 2017 sehingga mencapai harga pasaran iaitu pada satu rujukan formula berindekskan harga Gas Asli Cecair (LNG). Keputusan ini terpakai sehingga 2020 yang mana semakan semula perlu dibuat ke atas penetapan harga bermula 2021.

Harga gas yang dikawal selia kepada sektor elektrik Semenanjung adalah lebih tinggi daripada purata *Reference Market Price* (RMP) pada separuh tahun kedua 2019. Sehubungan itu, penetapan harga gas sektor elektrik berdasarkan harga pasaran RMP telah dilaksanakan bermula 1 Januari 2020 di bawah penetapan formula satu peringkat.

Bagi penetapan harga gas untuk 2021, ST bersama-sama Unit Perancang Ekonomi (EPU), Kementerian Tenaga dan Sumber Asli (KeTSA), TNB, PETRONAS, *Single Buyer* dan *Grid System Operator* telah melaksanakan kajian dan berunding dalam usaha untuk mengambil pendekatan yang terbaik untuk dilaksanakan.

Setelah mempertimbangkan kesan pandemik Covid-19, Kerajaan telah memutuskan agar harga dan isipadu gas asli yang dibekalkan kepada sektor elektrik bagi 2021 dikekalkan seperti keputusan terdahulu.

As part of the gas supply market liberalisation efforts, the Government in 2017 decided that gas prices for the electricity sector shall be increased automatically by RM1.50 per mmBtu every six (6) months starting from July 2017 until they reach the market price on the Liquefied Natural Gas (LNG) price reference index formula. This decision was applicable until 2020 whereby a price setting review will be conducted starting 2021.

The regulated gas price for the electricity sector in the Peninsula was higher than the average Reference Market Price (RMP) in the second half of 2019. In relation to this, gas pricing for the electricity sector based on the RMP market price was implemented from 1 January 2020 under a one-tier setting formula.

For the setting of gas prices in 2021, the Commission together with the Economic Planning Unit (EPU), Ministry of Energy and Natural Resources (KeTSA), TNB, PETRONAS, Single Buyer and Grid System Operator conducted a study and conferred to find the best approach for implementation.

After taking into consideration the impact of the Covid-19 pandemic, the Government decided that the price and volume of natural gas supplied to the electricity sector for 2021 will be maintained as previously decided.

STATUS PELAKSANAAN *NEW ENHANCED DISPATCH ARRANGEMENT* (NEDA)
STATUS OF IMPLEMENTATION OF THE NEW ENHANCED DISPATCH ARRANGEMENT (NEDA)

New Enhanced Dispatch Arrangement (NEDA) adalah satu mekanisme yang digunapakai oleh *Single Buyer* untuk *dispatch scheduling* bagi penjanaan dalam pasaran *Single Buyer*, bertujuan untuk mempertingkatkan lagi kecekapan pembekalan tenaga. Ketika NEDA mula diperkenalkan pada 1 Oktober 2016, ianya melibatkan penjana yang mempunyai *Power Purchase Agreement* (PPA) dan *Service Level Agreement* (SLA) sahaja.

NEDA Fasa Kedua pula telah dibuka kepada semua kategori penjana termasuk penjana yang telah tamat tempoh PPA/SLA, *merchant plant* tanpa PPA/SLA dan *cogeneration*. Peluasan kategori ini telah memberi peluang kepada lebih banyak penjana untuk menjual tenaga kepada pasaran *Single Buyer*. Sehingga kini, peserta yang telah menyertai NEDA adalah tergolong dalam kategori *Price Taker*.

Beberapa penambahbaikkan mekanisme NEDA telah diperkenalkan bagi menarik lebih ramai peserta yang berpotensi, seperti:

- Pindaan kepada tempoh bidaan.
- Pindaan kepada mekanisma bidaan.
- Pindaan kepada kaedah penyelesaian pembayaran.

Bagi 2020, jumlah kapasiti yang diperolehi melalui penyertaan NEDA masih kekal iaitu sebanyak 41.5 MW yang telah disertai oleh tiga (3) peserta iaitu *Northern Utility Resources* (NUR), *Petronas Chemical Fertilizer Kedah* (PCFK), dan Perusahaan Sadur Timah Malaysia (PERSTIMA).

Bagi merancakkan lagi penyertaan NEDA dari kalangan penggiat industri, ST dan *Single Buyer* telah menganjurkan sesi libat urus bersama peserta yang berpotensi untuk menyertai program NEDA. Selain itu, bengkel bagi menerangkan sistem *Market Participant Interface* (MPI) yang telah dibangunkan oleh *Single Buyer* juga telah diadakan pada 13 Ogos 2020 bersama pihak industri. Sesi ujian percubaan bersama pihak industri juga telah dijalankan pada 14 September hingga 13 November 2020 bagi menilai prestasi MPI sebelum ianya dilancarkan.

Pelaksanaan inisiatif-inisiatif ini adalah diharapkan dapat meningkatkan kesedaran dan keterbukaan penggiat industri kepada program NEDA. Sistem MPI juga akan dilancarkan pada Januari 2021 yang dijangka bakal meningkatkan lagi penyertaan ke program NEDA.

The New Enhanced Dispatch Arrangement (NEDA) is a dispatch scheduling mechanism adopted by Single Buyer for generation in the Single Buyer market, aimed to further enhance the cost efficiency of energy supply. When NEDA was first introduced on 1 October 2016, it only involved power generators with Power Purchase Agreement (PPA) and Service Level Agreement (SLA).

Meanwhile, Phase Two of NEDA was open to all categories of power generators including those with expired PPA/SLA, merchant plants without PPA/SLA as well as cogeneration. The expansion of this category provided an opportunity for power generators to sell energy to the Single Buyer market. To date, participants who have joined NEDA belong to the Price Taker category.

Several improvements to the NEDA mechanism was introduced to attract more potential participants, such as:

- *Amendments to the bidding period.*
- *Amendments to the bidding mechanism.*
- *Amendments to the payment settlement method.*

In 2020, the total capacity generated through NEDA participation remained at 41.5 MW with three (3) participants namely Northern Utility Resources (NUR), Petronas Chemical Fertilizer Kedah (PCFK) and Perusahaan Sadur Timah Malaysia (PERSTIMA).

To further boost the participation of industry players, the Commission and Single Buyer organised engagement sessions with potential participants to partake in the NEDA programme. On 13 August 2020, a workshop on the Market Participant Interface (MPI) system developed by Single Buyer was held with the industry. A pilot test session with the industry was also conducted from 14 September to 13 November 2020 to evaluate the performance of the MPI before its launch.

The purpose of these initiatives was to increase the awareness and openness of industry players to the NEDA programme. The MPI system will also be launched in January 2021 which is expected to further increase participation in the programme.

PEMANTAUAN PELAKSANAAN *RING-FENCED SINGLE BUYER* DAN *GRID SYSTEM OPERATOR* DI SEMENANJUNG

MONITORING OF THE IMPLEMENTATION OF RING-FENCED SINGLE BUYER AND GRID SYSTEM OPERATOR IN THE PENINSULA

Garis panduan bagi *Ring-fenced Single Buyer* dan *Grid System Operator* di Semenanjung telah mula dioperasikan sejak 2016. Di bawah garis panduan ini, *Dispatch Scheduling Working Group* (DSWG) dan *Single Buyer Website Working Group* (SBWWG) telah ditubuhkan bagi memantau operasi dan memastikan pematuhan.

DSWG dianggotai oleh ST, *Single Buyer, Grid System Operator* dan *Distribution System Operator*. Mesyuarat DSWG diadakan pada setiap suku tahunan bagi membincangkan perkara-perkara yang melibatkan perancangan jangka pendek termasuk pemantauan prestasi penjanaan dan pembekalan tenaga berdasarkan *least cost*, prestasi pembekalan bahan api, prestasi loji TBB, penyelesaian isu-isu operasi dan penyediaan pelan perancangan operasi jangka pendek.

Melalui DSWG, analisis berkaitan operasi termasuk trend permintaan elektrik dan penggunaan gas semasa tempoh PKP turut dijalankan bagi memantau dan mengurangkan impak penularan pandemik Covid-19 terhadap sektor elektrik.

Bagi SBWWG, keanggotaannya melibatkan agensi yang sama seperti DSWG serta Jabatan ICT TNB sebagai *service provider*. Kumpulan kerja ini ditubuhkan bagi memantau laman sesawang *Single Buyer* yang merupakan medium penyampaian maklumat kepada orang awam berkenaan situasi semasa pembekalan elektrik di samping menjadi platform rujukan bagi *market participant* di bawah NEDA.

The guideline for Ring-fenced Single Buyer and Grid System Operator in the Peninsula has been in effect since 2016. Under the guideline, the Dispatch Scheduling Working Group (DSWG) and Single Buyer Website Working Group (SBWWG) were established to monitor operations and ensure compliance.

DSWG comprises the Commission, Single Buyer, Grid System Operator and Distribution System Operator. Its meetings are held on a quarterly basis to discuss matters involving short-term planning which includes monitoring the performance of generation and supply of energy based on the least cost method, fuel supply performance, RE plant performance, resolution of operational issues and the preparation of a short-term operational plan.

Through the DSWG, operational-related analysis, including electricity demand and gas consumption trends during the MCO period, was also conducted to monitor and mitigate the impact of the Covid-19 pandemic on the electricity sector.

SBWWG comprises the same agencies as DSWG alongside TNB's ICT Department as a service provider. This working group was established to monitor the Single Buyer website which serves as a medium to provide the public with information on developments in the electricity supply landscape as well as being a reference platform for market participants under NEDA.

PEMBANGUNAN GARIS PANDUAN *RING-FENCED SINGLE BUYER* DAN *GRID SYSTEM OPERATOR* DI SABAH

THE DEVELOPMENT OF RING-FENCED SINGLE BUYER AND GRID SYSTEM OPERATOR GUIDELINES IN SABAH

Sebagai persediaan untuk pelaksanaan IBR di Sabah, garis panduan bagi *Ring-fenced Single Buyer* dan *Grid System Operator* perlu dibangunkan dalam memastikan rangka tadbir urus yang berkesan dan pelaksanaan aktiviti-aktiviti oleh *Single Buyer* dan *Grid System Operator* di Sabah yang telus dengan tadbir urus baik.

Bagi tujuan tersebut, draf bagi *Single Buyer Rules* dan *Grid System Operator Guidelines* akan menggariskan

To prepare for IBR implementation in Sabah, guidelines for Ring-fenced Single Buyer and Grid System Operators need to be developed to ensure an effective governance framework, as well as transparency and good governance in the activities implemented by Single Buyer and Grid System Operator in Sabah.

To that end, drafts of the Single Buyer Rules and Grid System Operator Guidelines will outline the responsibilities and roles

tanggungjawab dan peranan pihak yang terlibat dalam pengendalian sistem grid yang selamat, berdaya harap, telus, berterusan dan lebih ekonomi.

Kedua-dua garis panduan ini dijangka akan dimuktamadkan pada suku tahun ketiga 2021.

of the parties involved in operating a safe, reliable, transparent, secure and economical grid system.

Both these guidelines are expected to be finalised in the third quarter of 2021.

PENGURUSAN DAN KEMAMPANAN KUMPULAN WANG INDUSTRI ELEKTRIK (KWIE)
MANAGEMENT AND SUSTAINABILITY OF THE ELECTRICITY INDUSTRY FUND (KWIE)

Sejak ditubuhkan pada 1 Januari 2016, Kumpulan Wang Industri Elektrik (KWIE) telah membantu dalam mengurangkan impak tarif elektrik kepada pengguna, menggunakan sumber dari dana yang diperoleh dari pelarasan hasil dan kos di bawah mekanisme IBR, penjimatan dari mekanisme ICPT, pelarasan penjimatan pembelian arang batu serta pelarasan mekanisme Pengebilan Gas.

Bagi memastikan sumber dana KWIE kekal kukuh dan mampan, aktiviti pelaburan dana telah dipertimbangkan untuk dilaksanakan bagi memperoleh pulangan bagi menambah pendapatan KWIE. Justeru itu, polisi penempatan dan pengagihan pelaburan dana telah diperkenalkan dan diluluskan oleh Mesyuarat ST Bil. 6 Tahun 2018 pada 26 Oktober 2018 untuk menjamin ketelusan pengurusan dan pentadbiran dana KWIE.

Pengurusan dan kemampanan dana KWIE bagi 2020 dapat diringkaskan seperti berikut:

Since its establishment on 1 January 2016, the Electricity Industry Fund (KWIE) has assisted in cushioning the impact of electricity tariffs on consumers by utilising funds derived from revenue and cost adjustments under the IBR mechanism, savings from the ICPT mechanism, coal purchase savings adjustments as well as Gas Billing mechanism adjustments.

In order to ensure that it has solid and sustainable sources of funds, KWIE carries out investment activities to generate returns and increase its revenue. Therefore, the fund's investment allocation and distribution policy was introduced and approved by the Commission Meeting No. 6 of 2018 on 26 October 2018 to ensure transparency in the management and administration of the KWIE funds.

The management and sustainability of the KWIE fund for 2020 can be summarised as follows:

Penyata Kewangan dan Laporan Tahunan KWIE 2019
KWIE Financial Statements and Annual Report 2019

Penyata Kewangan dan Laporan Tahunan KWIE 2019 telah diluluskan oleh Mesyuarat ST pada 13 Ogos 2020. Laporan ini telah diaudit oleh Jabatan Audit Negara dan diberikan status audit tanpa teguran.

Penyata Kewangan dan Laporan Tahunan KWIE 2019 ini telah diluluskan oleh Mesyuarat Jemaah Menteri (MJM) pada 4 Disember 2020 dan seterusnya telah dibentangkan di kedua-dua Mesyuarat Parlimen, iaitu di Dewan Rakyat pada 15 Disember 2020 dan di Dewan Negara pada 21 Disember 2020.

The KWIE 2019 Financial Statements and Annual Report were approved by the Commission Meeting on 13 August 2020. The report has been audited by the National Audit Department and given the unqualified audit status.

The KWIE 2019 Financial Statements and Annual Report were approved by the Cabinet Meeting (MJM) on 4 December 2020 and subsequently tabled at both Parliament Meetings, namely Dewan Rakyat on 15 December 2020 and Dewan Negara on 21 December 2020.

Pembangunan Sistem Kewangan KWIE
Development of the KWIE Financial System

Sejak beroperasi pada 2017, proses pengurusan kewangan dan penyediaan penyata kewangan KWIE telah dilakukan secara manual. Bagi memastikan proses rekod dan pengurusan KWIE dijalankan dengan telus dan teratur, cadangan untuk pembangunan sistem kewangan dan hasil KWIE dengan menggunakan peruntukan KWIE telah mendapat perakuan dari Mesyuarat Jawatankuasa KWIE Bil. 1 Tahun 2020 pada 18 Februari 2020 dan Mesyuarat ST Bil. 2 Tahun 2020 pada 13 Mac 2020.

Terma rujukan bagi pembangunan Sistem Kewangan KWIE telah diperakukan oleh Mesyuarat Jawatankuasa KWIE Bil. 4 Tahun 2020 pada 30 September 2020 dan diluluskan oleh Mesyuarat ST Bil. 11 Tahun 2020 pada 13 Oktober 2020.

Since operating in 2017, the financial management process and preparation of KWIE's financial statements have been done manually. To ensure KWIE's records and management process are carried out in a transparent and orderly manner, the proposal for the development of a KWIE financial and revenue system using KWIE's allocation was approved by the KWIE Committee Meeting No. 1 of 2020 on 18 February 2020 and the Commission Meeting No. 2 of 2020 on 13 March 2020.

The terms of reference for the development of the KWIE Financial System were affirmed by the KWIE Committee Meeting No. 4 of 2020 on 30 September 2020 and approved by the Commission Meeting No. 11 of 2020 on 13 October 2020.

Pelaburan Dana KWIE
KWIE Fund Investment

Purata jumlah pelaburan dana KWIE dalam instrumen kewangan seperti akaun simpanan tetap (FD) dan *Short-Term Money Market Deposit* (STMMD) untuk tahun 2020 adalah RM620 juta dengan pulangan sebanyak RM13 juta pada purata kadar faedah tahunan sebanyak 2.16%.

Hasil pendapatan KWIE menerusi faedah pelaburan dilihat berkurangan pada tahun 2020 ekoran dari penularan pandemik Covid-19 yang turut memberi impak terhadap perkembangan ekonomi semasa. Untuk rekod, pada tahun yang sama Bank Negara Malaysia (BNM) telah mengumumkan penurunan kadar dasar semalaman – *Overnight Policy Rate* (OPR) sebanyak empat (4) kali dengan jumlah 1.25%. Selaras dengan penurunan OPR tersebut, BNM turut mengumumkan penurunan kadar pinjaman asas – *Base Lending Rate* (BLR) sebanyak 0.25% yang berkuatkuasa pada 6 Ogos 2020.

The average total investment of the KWIE funds in financial instruments such as fixed deposit (FD) accounts and Short-Term Money Market Deposit (STMMD) in 2020 amounted to RM620 million with a return of RM13 million at an average annual interest rate of 2.16%.

KWIE's income from investment benefits decreased in 2020 due to the outbreak of the Covid-19 pandemic which also impacted the current economic landscape. For the record, in the same year Bank Negara Malaysia (BNM) announced a reduction of the Overnight Policy Rate (OPR) four (4) times with a total rate of 1.25%. In line with the reduction of the OPR, BNM on 6 August 2020, also announced a reduction of the Base Lending Rate (BLR) of 0.25%.

PEMBERIAN DISKAUN BIL ELEKTRIK DI SEMENANJUNG MALAYSIA MELALUI PROGRAM PAKEJ RANGSANGAN EKONOMI 2020 (PRE 2020), PROGRAM PAKEJ RANGSANGAN EKONOMI PRIHATIN RAKYAT (PRIHATIN) DAN PROGRAM BANTUAN PRIHATIN ELEKTRIK (BPE)

PROVISION OF ELECTRICITY BILL DISCOUNTS IN PENINSULAR MALAYSIA THROUGH THE ECONOMIC STIMULUS PACKAGE 2020 (PRE 2020) PROGRAMME, THE PRIHATIN RAKYAT ECONOMIC STIMULUS PACKAGE 2020 (PRIHATIN) PROGRAMME AND THE BANTUAN PRIHATIN ELEKTRIK (BPE) PROGRAMME

Bagi mengurangkan impak penularan pandemik Covid-19 kepada pengguna dan sektor ekonomi, Kerajaan telah memperkenalkan beberapa pakej pemberian diskaun bil elektrik seperti berikut:

To cushion the impact of the Covid-19 pandemic on consumers and the economic sector, the Government introduced several electricity bill discount packages as follows:

Pakej Rangsangan Ekonomi 2020 (PRE 2020)

Economic Stimulus Package 2020 (PRE 2020)

PRE 2020 diumumkan pada 27 Februari 2020, iaitu pemberian diskaun sebanyak 15% bagi penggunaan elektrik untuk tempoh 1 April sehingga 30 September 2020 kepada enam (6) sektor perniagaan terpilih iaitu:

- Pengendali Hotel
- Agensi Pengembaraan dan Pelancongan
- Pejabat Syarikat Penerbangan Tempatan
- Kompleks Membeli Belah
- Pusat Konvensyen
- Taman Tema

Lanjutan dari PRE 2020, pada 16 Mac 2020 Kerajaan telah mengumumkan pemberian diskaun 2% kepada pengguna selain dari enam (6) sektor perniagaan yang dinyatakan sebelum ini iaitu kategori perdagangan, perindustrian dan pertanian spesifik serta pengguna domestik bagi penggunaan elektrik 601 kWj dan ke atas bagi tempoh 1 April sehingga 30 September 2020.

PRE 2020 was announced on 27 February 2020, providing a 15% discount on electricity consumption from 1 April to 30 September 2020 to six (6) selected business sectors, namely:

- *Hotel Operators*
- *Outdoor and Travel Agencies*
- *Local Airline Offices*
- *Shopping Centres*
- *Convention Centres*
- *Theme Parks*

In addition, on 16 March 2020, the Government announced a 2% discount for consumers other than the six (6) aforementioned business sectors, namely specific trade, industry and agriculture categories as well as domestic consumers, for electricity consumption amounting to 601 kWh and above for the period from 1 April to 30 September 2020.

Pakej Rangsangan Ekonomi Prihatin Rakyat (PRIHATIN)

Prihatin Rakyat Economic Stimulus Package 2020 (PRIHATIN)

Pada 27 Mac 2020, Kerajaan sekali lagi mengumumkan pemberian diskaun bil elektrik melalui Pakej Rangsangan Ekonomi Prihatin Rakyat (PRIHATIN) kepada pengguna domestik di Semenanjung. Pemberian diskaun elektrik tersebut

On 27 March 2020, the Government once again announced the provision of electricity bill discounts through the Prihatin Rakyat Economic Stimulus Package (PRIHATIN) programme to domestic

adalah di antara 15% hingga 50% mengikut jumlah penggunaan elektrik masing-masing bermula daripada tempoh 1 April hingga 30 September 2020.

Inisiatif ini bertujuan meringankan beban pembayaran bil elektrik pengguna domestik berikutan kenaikan bil elektrik secara mendadak semasa pelaksanaan Perintah Kawalan Pergerakan (PKP).

Seterusnya, Kerajaan pada 24 Jun 2020 telah mengumumkan pelanjutan diskaun bil elektrik berperingkat (2% hingga 50%) di bawah Pakej PRIHATIN kepada semua pengguna domestik di Semenanjung dan pemberian diskaun bil elektrik sebanyak 2% kepada pengguna domestik di Sabah dan Sarawak sehingga 31 Disember 2021.

consumers in the Peninsula. The electricity discount ranged from 15% to 50% according to the total electricity consumed for the period from 1 April to 30 September 2020.

The initiative aims to alleviate the burden on domestic consumers following the increase in electricity bills during the Movement Control Order (MCO).

On 24 June 2020, the Government announced an extension to electricity bill discounts under PRIHATIN, in stages (2% to 50%) to all domestic consumers in the Peninsula, as well as the provision of electricity bill discounts of 2% to domestic consumers in Sabah and Sarawak until 31 December 2021.

Bantuan Prihatin Elektrik (BPE)

Bantuan Prihatin Elektrik (BPE)

Pada 20 Jun 2020, pemberian Bantuan Prihatin Elektrik (BPE) bagi tempoh tiga (3) bulan bermula 1 April hingga 30 Jun 2020 diumumkan yang merupakan penambahbaikan diskaun bil elektrik di bawah pakej PRIHATIN. Di bawah Pakej BPE, pengguna domestik di Semenanjung menerima diskaun bil elektrik secara *one-off* sebanyak RM77 sebulan. Diskaun ini diberikan secara sekaligus pada bulan Julai 2020 untuk meringankan beban rakyat ekoran peningkatan bil elektrik yang dialami sepanjang tempoh pelaksanaan PKP yang bermula pada 18 Mac 2020. Selain itu, Kerajaan juga bersetuju untuk memberikan diskaun tambahan sebanyak 8% kepada pengguna elektrik dalam julat 601-900 kWj bagi tempoh April hingga September 2020. Ini menjadikan pengguna dalam julat tersebut layak menerima diskaun sebanyak 10% bagi tempoh tersebut.

Pemberian diskaun BPE ini merupakan penambahbaikan kepada diskaun PRIHATIN yang telah diumumkan oleh Kerajaan pada 27 Mac 2020 khusus untuk pengguna domestik di Semenanjung sahaja.

On 20 June, the Bantuan Prihatin Elektrik (BPE) programme was announced for a period of three (3) months from 1 April to 30 June 2020 as an improved version of the electricity bill discounts under PRIHATIN. Under BPE, domestic consumers received electricity bill discounts of RM77 a month on a one-off basis. The discount was released in a lump sum in July to alleviate the burden of the people following the increase in electricity bills during the MCO which began on 18 March 2020. In addition, the Government agreed to the provision of additional discounts of 8% to electricity consumers within the 601-900 kWh range for the period from April to September 2020, enabling these consumers to be eligible for a 10% discount during this period.

The BPE discount was an improved version of the PRIHATIN discounts announced by the Government on 27 March 2020 solely for domestic consumers in the Peninsula.

Nota: Perician lanjut dilaporkan dalam Laporan Tahunan 2020 KWIE.
Note: Further details are reported in the KWIE 2020 Annual Report.

Dari segi peruntukan, pakej-pakej pemberian diskaun bil elektrik ini ditampung bersama Kementerian Kewangan (MOF), KWIE dan TNB berjumlah RM2,778 juta.

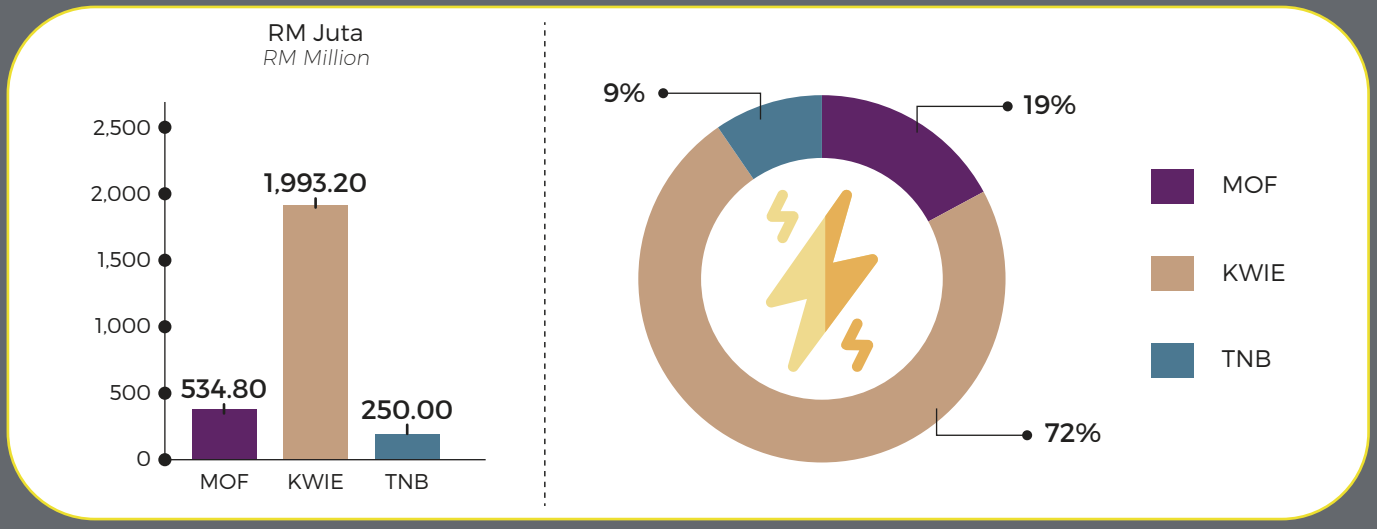
In terms of allocation, the electricity bill discount packages amounting to RM2,778 million will be borne by the Ministry of Finance (MOF), KWIE and TNB.

Pakej / *Package*	**MOF RM juta /** *MOF RM million*	**KWIE RM juta /** *KWIE RM million*	**TNB RM juta /** *TNB RM million*	**Jumlah RM juta /** *Total RM million*
PRE 2020 & PRIHATIN[1]	**180.00**	**1,121.64**	**150.00**	**1,451.64**
Diskaun Tambahan bagi Rayuan Fasa 1 hingga 5[2] / *Additional Discounts for Phase 1 to 5[2] Appeals*	**-**	**65.00**	**-**	**65.00**
BPE	**354.80[3]**	**806.56[4]**	**100.00**	**1,261.36**
Jumlah Keseluruhan / *Total*	**534.80[5]**	**1,993.20**	**250.00[5]**	**2,778.00**

Nota:
1. Surat kelulusan KeTSA bertarikh 24 April dan 30 Jun 2020.
2. Berdasarkan keputusan Mesyuarat Jawatankuasa Pengesahan Permohonan Rayuan Diskaun Bil Elektrik 15% yang bersetuju rayuan dilanjutkan sehingga 30 September 2020.
3. Surat kelulusan KeTSA bertarikh 28 Ogos 2020 sebanyak RM260 juta dan surat KeTSA bertarikh 7 Mei 2021 bagi lebihan tuntutan BPE tampungan MOF sebanyak RM94.8 juta.
4. KeTSA ambil maklum bahawa jumlah RM806.56 termasuk lebihan BPE yang masih belum mendapat kelulusan bayaran daripada YB Menteri KeTSA berjumlah RM364,125.26.
5. Tampungan MOF dan TNB tidak dimasukkan di dalam Penyata Kewangan KWIE (Penyata Pendapatan dan Penyata Prestasi Bajet) bagi tahun 2020.

Note:
1. *Letter of approval from KeTSA dated 24 April and 30 June 2020.*
2. *Based on the decision of the Committee Meeting with regards to the 15% Electricity Bill Discount Application Confirmation which agreed for appeals to be extended until 30 September 2020.*
3. *KeTSA approval letter dated 28 August 2020 of RM260 million and KeTSA letter dated 7 May 2021 for the surplus BPE claims of RM94.8 million borne by MOF.*
4. *KeTSA took note of the amount RM806.56 including surplus BPE that has yet to obtain payment approval from the YB Minister of KeTSA amounting to RM364,125.26.*
5. *Amount borne by MOF and TNB was not included in the KWIE Financial Statements (Income Statement and Budget Performance Statement) for the year 2020.*

Tampungan Pemberian Diskaun Bil Elektrik
Electricity Bill Discount Provisions

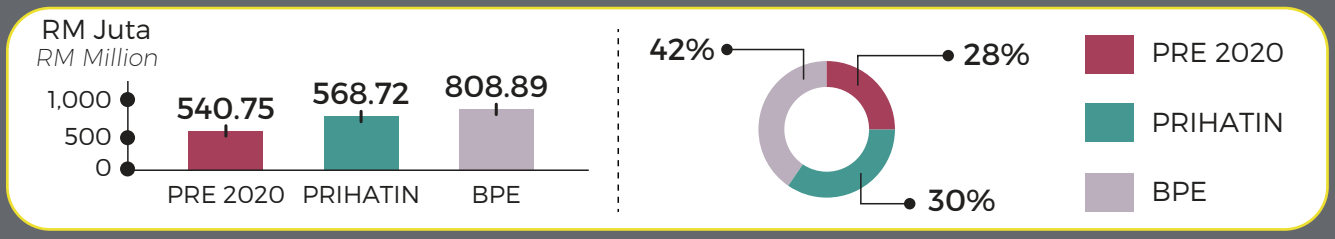


Nota:
Termasuk tampungan MOF berjumlah RM534.80 juta dan tampungan TNB berjumlah RM250 juta.

Note:
Inclusive of amount borne by MOF of RM534.80 million and amount borne by TNB of RM250 million.

Sehingga 31 Disember 2020, perincian tuntutan diskaun PRE 2020, PRIHATIN dan BPE daripada pihak TNB dan pemegang Lesen Awam Pengagihan (LAP) bagi tempoh April hingga Disember 2020 yang ditampung menggunakan dana KWIE sepenuhnya berdasarkan tuntutan sebenar adalah seperti berikut:

As of 31 December 2020, the details of the PRE 2020, PRIHATIN and BPE discount claims from TNB and Public Distribution Licensees for the period from April to December 2020, which were fully borne by KWIE, are as follows:



Nota:

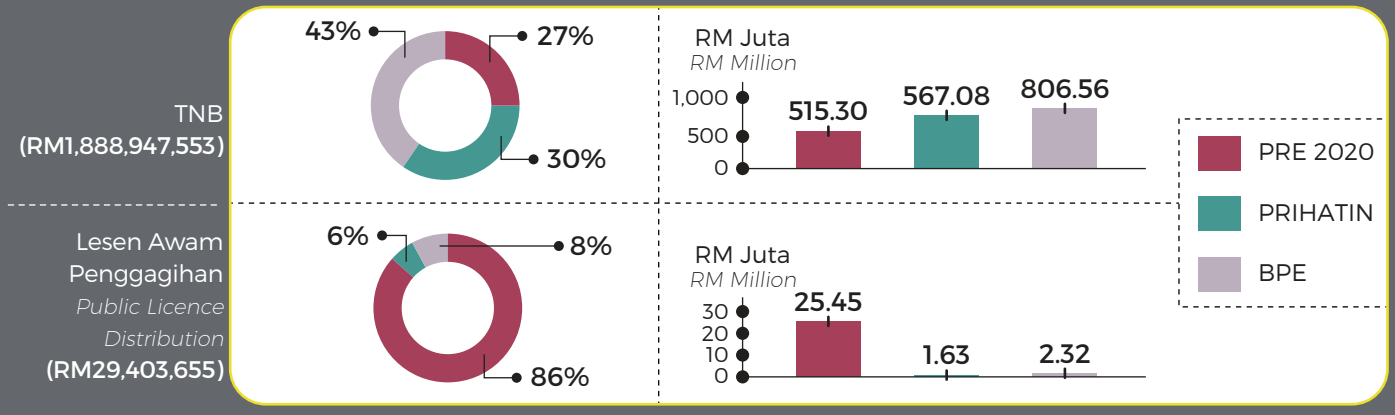
1. Jumlah tuntutan di atas adalah tidak termasuk amaun tampungan oleh TNB berjumlah RM250 juta iaitu RM150 juta bagi PRIHATIN dan RM100 juta bagi BPE.
2. Tuntutan di atas adalah tidak termasuk amaun tampungan oleh MOF berjumlah RM534.80 juta iaitu RM180 juta bagi PRIHATIN dan RM354.80 juta bagi BPE.
3. Tuntutan oleh TNB bagi PRE 2020 adalah termasuk tuntutan diskaun 10% dan 2% bagi pengguna domestik di bawah PRIHATIN.

Note:

1. *The total claims above are not inclusive of the amount borne by TNB of RM250 million comprising RM150 million for PRIHATIN and RM100 million for BPE.*
2. *The claims above are not inclusive of the amount borne by MOF of RM534.80 million comprising RM180 million for PRIHATIN and RM354.80 for BPE.*
3. *The claims by TNB for PRE 2020 include claims for 10% and 2% discounts for domestic consumers under PRIHATIN.*

Dari segi perbandingan, jumlah pemberian diskaun yang disalurkan kepada pengguna melalui dua (2) pembekal elektrik adalah seperti berikut.

In terms of comparison, the total discounts distributed to consumers through two (2) electricity suppliers were as follows:



Nota:

1. Jumlah tuntutan di atas adalah tidak termasuk amaun tampungan oleh TNB berjumlah RM250 juta iaitu RM150 juta bagi PRIHATIN dan RM100 juta bagi BPE.
2. Tuntutan di atas adalah tidak termasuk amaun tampungan oleh MOF berjumlah RM534.80 juta iaitu RM180 juta bagi PRIHATIN dan RM354.80 juta bagi BPE.
3. Tuntutan oleh TNB bagi PRE 2020 adalah termasuk tuntutan diskaun 10% dan 2% bagi pengguna domestik di bawah PRIHATIN.

Note:

1. *The total claims above are not inclusive of the amount borne by TNB of RM250 million comprising RM150 million for PRIHATIN and RM100 million for BPE.*
2. *The claims above are not inclusive of the amount borne by MOF of RM534.80 million comprising RM180 million for PRIHATIN and RM354.80 for BPE.*
3. *The claims by TNB for PRE 2020 include claims for 10% and 2% discounts for domestic consumers under PRIHATIN.*

05

MENAMBAHBAIK KUALITI KAWAL SELIA DAN PELAKSANAAN PERKHIDMATAN

IMPROVEMENT OF REGULATORY QUALITY AND SERVICE DELIVERY

PENGURUSAN ADUAN
MANAGEMENT OF COMPLAINTS

STATISTIK ADUAN

Pada 2020, ST telah menerima sebanyak 5,421 aduan berbanding 2,950 aduan pada tahun sebelumnya. Peningkatan sebanyak 83.7% ini berlaku berikutan ramai pengguna merasakan bil elektrik mereka tinggi semasa tempoh Perintah Kawalan Pergerakan (PKP) pertama yang mula dikuatkuasakan oleh Kerajaan pada 18 Mac 2020.

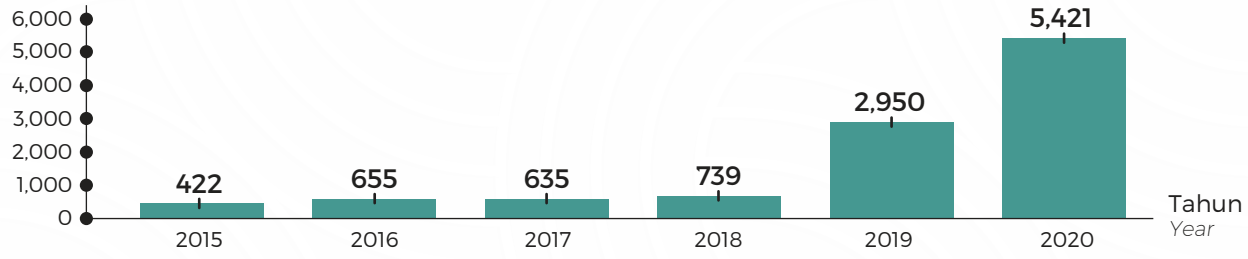
Daripada jumlah 5,421 aduan yang diterima, sebanyak 4,916 atau 91% aduan telah diselesaikan pada akhir Disember 2020.

COMPLAINT STATISTICS

In 2020, the Commission received a total of 5,421 complaints compared to 2,950 complaints in the previous year. This was an increase of 83.7% and was mainly due to complaints of higher electricity bills during the first Movement Control Order (MCO) which was enforced by the Government on 18 March 2020.

Out of the 5,421 complaints received, a total of 4,916 or 91% of complaints were resolved by the end of December 2020.

Bilangan Aduan Yang Diterima, 2015 - 2020
Number of Complaints Received, 2015 – 2020



Bilangan aduan meningkat dengan ketara pada bulan Jun dan Julai selepas pengguna domestik Tenaga Nasional Berhad (TNB) menerima bil bacaan sebenar berikutan aktiviti membaca meter di tapak diberhentikan sementara waktu pada bulan Mac dan April 2020.

Secara amnya, semasa PKP, bil elektrik pengguna meningkat disebabkan oleh pertambahan penggunaan elektrik di premis ekoran pengguna dan ahli keluarganya perlu berada di dalam rumah lebih lama daripada biasa.

Dalam menangani aduan ini, pengguna telah dihubungi melalui panggilan telefon, diterangkan di premis pengguna secara bersemuka atau di ST tentang kaedah prorata yang digunakan di dalam sistem pembilan elektrik semasa tempoh PKP.

Langkah ini dijalankan bagi memastikan pengguna mendapat pemahaman yang lebih jelas tentang kaedah dan pengiraan yang dilakukan oleh pihak pemegang lesen. Selain itu, Kerajaan juga telah memberikan bantuan melalui diskaun ke atas bil elektrik pengguna bagi mengurangkan beban mereka lanjutan keluhan ini.

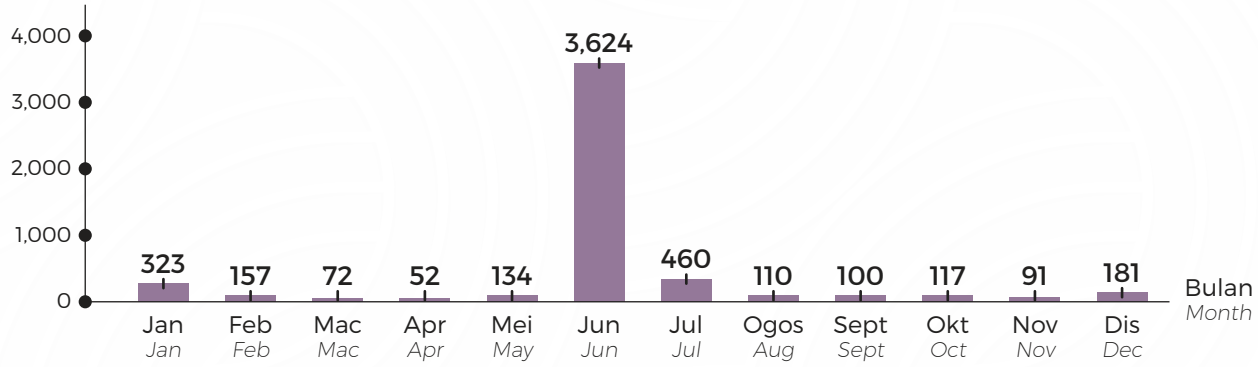
The number of complaints increased significantly in June and July when Tenaga Nasional Berhad's (TNB) domestic consumers received the actual bill readings following the temporary suspension of on-site meter reading activities throughout March and April 2020.

During the MCO, electricity bills increased due to the rise in electricity consumption as consumers and family members had to stay in their premises for longer than usual.

To address these complaints, consumers were contacted through telephone calls or received clarification in person, at either their premises or at the Commission, on the prorated method used in the electricity billing system during the MCO period.

This step was carried out to ensure that consumers had a clearer understanding of the methods and calculations used by the licensee. In addition, the Government also assisted in reducing the burden by providing discounts on electricity bills in response to the grievances experienced by consumers.

Bilangan Aduan Bulanan, 2020
Number of Monthly Complaints, 2020



Hasil dari penerangan dan inisiatif diskaun yang diberikan oleh Kerajaan, bilangan aduan telah berjaya dikurangkan sehingga 110 pada bulan Ogos berbanding 3,624 pada bulan Jun dan 460 pada bulan Julai.

As a result of the engagement and discount initiatives provided by the Government, the number of complaints was successfully reduced to 110 in August compared to 3,624 in June and 460 in July.

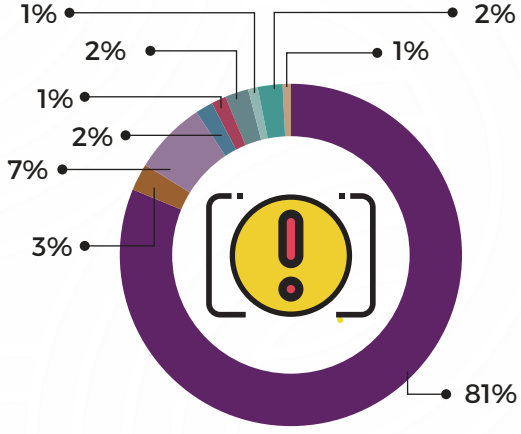
Lima (5) jenis aduan tertinggi yang diterima oleh ST sepanjang 2020 adalah seperti berikut:

The five (5) most common types of complaints received by the Commission in 2020 were:

- Kenaikan bil tidak munasabah (Kategori: Pengebilan, caj dan tarif elektrik) – 54.9%
- Bil anggaran dan pelarasan bil (Kategori: Pengebilan, caj dan tarif elektrik) – 14.8%
- Bacaan bil melebihi 31 hari (Kategori: Pengebilan, caj dan tarif elektrik) – 5.6%
- Pendawaian tidak mengikut standard (Kategori: Keselamatan elektrik) – 3.3%
- Kesalahan kategori tarif elektrik (Kategori: Pengebilan, caj dan tarif elektrik) - 2.8%

- *Unreasonable increase in bills (Category: Electricity billing, charges and tariffs) - 54.9%*
- *Estimated bills and bill adjustments (Category: Electricity billing, charges and tariffs) - 14.8%*
- *Bill readings exceeding 31 days (Category: Electricity billing, charges and tariffs) - 5.6%*
- *Wiring not according to the set standard (Category: Electrical safety) - 3.3%*
- *Electricity tariff categorisation error (Category: Electricity billing, charges and tariffs) - 2.8%*

Peratusan Aduan mengikut Kategori
Percentage of Complaints by Category

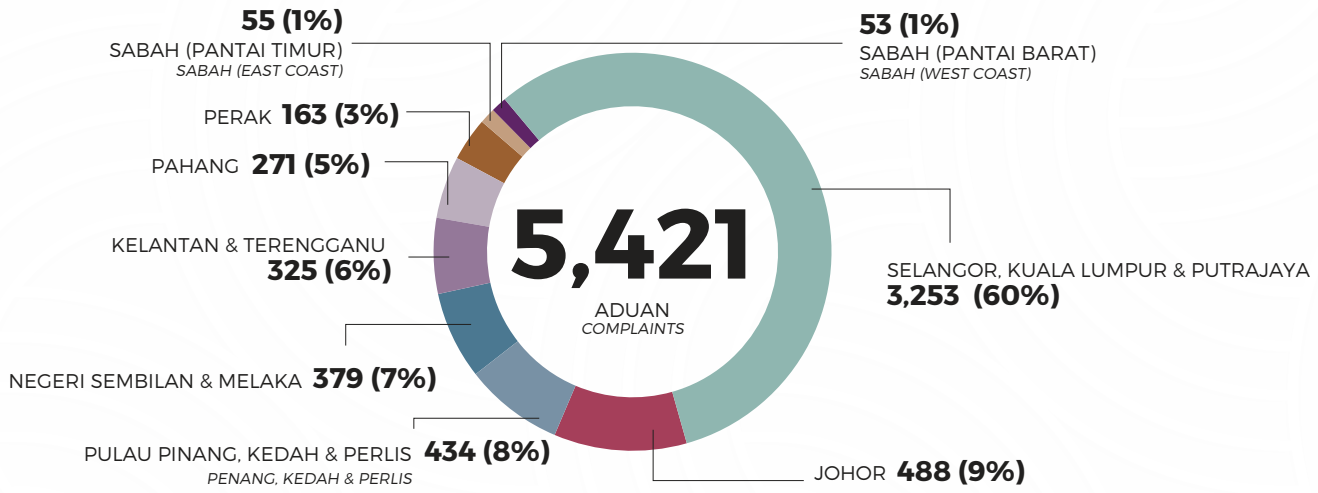


- Pengebilan, caj & tarif elektrik — *Electricity billing, charges and tariffs*
- Perkhidmatan pengguna (ST) — *Consumer services (ST)*
- Perkhidmatan pengguna (pemegang lesen) — *Consumer services (licensees)*
- Pengebilan, caj & tarif gas — *Gas billing, charges and tariffs*
- Pemeteran elektrik — *Electricity metering*
- Kontraktor, orang kompeten elektrik dan pengurus tenaga elektrik — *Contractors, electrical competent persons and electrical energy managers*
- Keselamatan gas — *Gas safety*
- Keselamatan elektrik — *Electrical safety*
- 0% Gangguan bekalan gas — *Gas supply interruptions*
- 0% Kontraktor dan orang kompeten gas — *Gas contractors and competent persons*
- Gangguan bekalan elektrik — *Electricity supply interruptions*

Pejabat kawasan Selangor, WP Kuala Lumpur, WP Putrajaya menerima jumlah aduan yang tertinggi berbanding lapan (8) Pejabat Kawasan lain iaitu sebanyak 3,253 aduan, diikuti dengan Pejabat Kawasan Johor iaitu kedua tertinggi dengan 488 aduan, dan Pejabat Kawasan Pulau Pinang, Kedah, Perlis iaitu ketiga tertinggi dengan 434 aduan. Manakala, jumlah aduan yang terendah adalah Pejabat Kawasan Pantai Timur Sabah (Sandakan) dan Pejabat Kawasan Pantai Barat Sabah (Kota Kinabalu) iaitu sebanyak 55 dan 53 aduan.

The Selangor, WP Kuala Lumpur and WP Putrajaya Regional Office received 3,253 complaints - the highest number compared to eight (8) other Regional Offices. The Johor Regional Office received the second highest number of complaints (488), followed by the Penang, Kedah, and Perlis Regional Office (434). Meanwhile, the Sabah East Coast Regional Office (Sandakan) and Sabah West Coast Regional Office (Kota Kinabalu) received the lowest number of complaints with 55 and 53 complaints respectively.

Bilangan Aduan mengikut Pejabat Kawasan
Number of Complaints by Regional Office



INDEKS KEPUASAN PELANGGAN ST (CSI ST)
ST CUSTOMER SATISFACTION INDEX (CSI ST)

ST sentiasa komited dalam memastikan kepuasan pelanggan terhadap kualiti perkhidmatan seharusnya mencapai satu tahap yang memuaskan.

Justeru itu, Kajian Indeks Kepuasan Pelanggan ke atas ST (CSI ST) telah dijalankan bagi mengukur tahap kepuasan pelanggan terhadap perkhidmatan yang disediakan oleh ST, disamping menambahbaik kualiti perkhidmatan yang meliputi:

- Perkhidmatan
- Kemudahan
- Layanan
- Masa
- Kawal Selia

Pada 2020, Kajian Kepuasan Pelanggan ini telah dijalankan pada bulan Oktober hingga November 2020, di mana Ibu Pejabat ST dan sembilan (9) Pejabat Kawasan telah aktif mengedarkan borang soal selidik ini bagi hasil dapatan yang komprehensif.

The Commission is committed to ensuring that the quality of its services meet the expectations of customers.

Therefore, the ST Customer Satisfaction Index (CSI ST) Survey was conducted to measure the level of customer satisfaction with the services provided by the Commission. The survey also aimed to improve the overall quality of the Commission's services covering the following aspects:

- *Services*
- *Facilities*
- *Hospitality*
- *Time*
- *Regulation*

The Customer Satisfaction Survey was conducted from October to November 2020. The Commission's Head Office and nine (9) Regional Offices actively distributed questionnaires to ensure that comprehensive findings were obtained.

Seramai 226 responden yang mempunyai data lengkap telah dianalisa dan secara keseluruhannya peratusan tahap kepuasan pelanggan ST bagi 2020 adalah sebanyak 92.37% berbanding 86.8% pada 2019, iaitu merupakan peningkatan sebanyak 5.6% berbanding tahun sebelumnya.

Kelima-lima aspek perkhidmatan yang disediakan oleh ST menunjukkan tahap kepuasan pelanggan dengan tahap sama dan tidak menunjukkan jurang tahap kepuasan yang ketara.

A total of 226 respondents with complete data were analysed in this survey. The overall customer satisfaction level stood at 92.37% in 2020 compared to 86.8% in 2019. This represents an increase of 5.6% compared to the previous year.

All five (5) aspects of services provided by the Commission showed the same level of customer satisfaction without a significant difference in the level of satisfaction achieved.

PENAMBAHBAIKAN TERHADAP AKTA-AKTA DAN PERATURAN-PERATURAN ST
IMPROVEMENTS TO THE COMMISSION'S ACTS AND REGULATIONS

Bagi memastikan perundangan pembekalan tenaga di bawah bidang kuasa ST sentiasa relevan dengan peredaran masa dan perkembangan industri, cadangan pindaan kepada Peraturan-Peraturan Elektrik 1994, Peraturan-Peraturan Bekalan Pemegang Lesen 1990 dan Peraturan-Peraturan Bekalan Gas 1997 telah dibentangkan dan dikemukakan kepada Kementerian yang berkaitan untuk tindakan selanjutnya.

Pada 29 Disember 2020, satu bengkel Akta Bekalan Elektrik 1990 [Akta 447], telah diadakan sebagai pendahuluan kepada proses semakan dan pindaan Akta 447. Bengkel tersebut telah dihadiri oleh wakil daripada Jabatan di bawah ST di mana isu dan perkara yang hendak dicadangkan bagi maksud penambahbaikan kepada Akta 447 telah dibincangkan dan dikenalpasti.

To ensure that energy supply regulations under the jurisdiction of the Commission remain relevant in line with the developments within the industry, proposed amendments to the Electricity Regulations 1994, Licensee Supply Regulations 1990 and Gas Supply Regulations 1997 have been tabled and submitted to the relevant Ministries for further action.

On 29 December 2020, a workshop on the Electricity Supply Act 1990 [Act 447] was held as a prelude for the review and amendment of Act 447. Representatives from the relevant Departments in the Commission attended this workshop where issues and proposed matters for improvements to Act 447 were discussed and identified.

PENGURUSAN RISIKO
RISK MANAGEMENT

PELAKSANAAN PELAN PENGURUSAN RISIKO ST

Pelan Pengurusan Risiko ST dibangunkan selaras dengan hala tuju strategik ST, bagi menjamin pelaksanaan proses kerja serta penyampaian perkhidmatan yang berkesan di ST. Melalui pelan ini, risiko-risiko di ST dikenalpasti termasuk analisa kesan dan akibat sekiranya sesuatu risiko itu terjadi. Justeru, tindakan-tindakan kawalan, alternatif dan penambahbaikan dapat dirancang dalam mencegah serta mengawal risiko tersebut daripada terus mengakibatkan kesan yang buruk kepada ST.

Pelaksanaan pelan ini dijangka dapat membantu ST menangani cabaran-cabaran dalaman dan luaran organisasi dalam segala urusan.

IMPLEMENTATION OF THE COMMISSION'S RISK MANAGEMENT PLAN

The Commission's Enterprise Risk Management Plan was developed in line with its objective to ensure the effective implementation of work processes and service delivery. Through this plan, the risks present in the Commission were identified including analysing the effects and consequences of a risk when it occurs. Thus, control measures, alternatives and improvements can be planned to prevent and control these risks from adversely impacting the Commission.

The implementation of this plan is expected to help the Commission address internal and external challenges in all matters of the organisation.

Sepanjang 2020, ST telah melaksanakan pelan pengurusan risiko selaras dengan insiden-insiden risiko yang dikenalpasti boleh memberi impak kepada prestasi dan pencapaian objektif ST dalam penyampaian perkhidmatannya.

Hasil daripada proses analisis risiko, didapati tiga (3) bidang tugas yang perlu diberi perhatian, iaitu kualiti kawal selia (keputusan-keputusan ST), penyampaian perkhidmatan serta keupayaan dan kemampuan ST. Antara risiko-risiko yang terlibat adalah semakan kehakiman atau saman sivil terhadap ST, kelemahan sistem dalam talian ST dan kegagalan operasi di ST.

Sebagai langkah kawalan dan mitigasi, ST telah melaksanakan beberapa inisiatif berkaitan bagi perkara-perkara tersebut, antaranya:

- Pembangunan Tatacara Pencegahan dan Pengurusan Tindakan Undang-Undang Melibatkan ST.
- Pemantauan Berterusan Terhadap Pelaksanaan ISMS 27001.
- Pembangunan *ST Capabilities Development Framework.*

Inisiatif-inisiatif ini diharapkan dapat menjadi asas yang baik kepada permulaan pelaksanaan pengurusan risiko ST yang mampan. Melaluinya, ST boleh mengukur, menganalisis tahap risiko sesuatu program dan seterusnya mengambil tindakan untuk merancang dan mengawal risiko yang telah dikenal pasti.

Throughout 2020, the Commission implemented a risk management plan in line with the identified risk incidents that could impact the Commission's performance in the delivery of its services.

The risk analysis process identified three (3) areas that required attention, namely regulatory quality (the Commission's decision-making), service delivery and the Commission's capacities and capabilities. Among the risks involved were judicial review or civil suits against the Commission, the ineffectiveness of its online system and operational failure in the Commission.

The Commission implemented several related initiatives as control and mitigation measures:

- *Development of the Preventive Procedures and Management of Legal Actions Involving the Commission.*
- *Continuous Monitoring of the ISMS 27001 Implementation.*
- *Development of the ST Capabilities Development Framework.*

These initiatives serve as a foundation for the implementation of a sustainable risk management procedure. This will enable the Commission to measure and analyse the risk level of a programme and subsequently take action to plan and control those risks.

HUBUNGAN DUA HALA DAN KERJASAMA STRATEGIK - MEMORANDUM PERSEFAHAMAN (MoU) DAN LIBAT URUS BERSAMA PEMEGANG TARUH

BILATERAL RELATIONS AND STRATEGIC COOPERATION - MEMORANDUM OF UNDERSTANDING (MoU) AND STAKEHOLDERS' ENGAGEMENT

ASEAN ENERGY REGULATORY NETWORK (AERN)

Mesyuarat *ASEAN Energy Regulatory Network* (AERN) ke-11 dan Mesyuarat *AERN Working Groups 1* dan *2* (AWG 1 & 2) ke-5 telah diadakan julung kalinya melalui persidangan dalam talian pada 28 dan 29 Julai 2020. Indonesia menjadi tuan rumah kali ini di mana Anggota-Anggota mesyuarat kekal di negara masing-masing, di mana di Malaysia, ianya telah diadakan di ST.

Mesyuarat telah membincangkan perkara-perkara berbangkit serta kemaskini terbaharu daripada mesyuarat AERN dan juga mesyuarat AWG 1 & 2 yang sebelumnya.

ASEAN ENERGY REGULATORY NETWORK (AERN)

For the first time, the 11th ASEAN Energy Regulatory Network (AERN) Meeting and the 5th AERN Working Groups 1 and 2 (AWG 1 & 2) Meetings were held through an online conference on 28 and 29 July 2020. Indonesia was the host and members attended the meeting from their respective countries. In Malaysia, this was held at the Commission.

The meeting discussed emerging issues and the latest updates from the previous AERN and AWG 1 & 2 meetings.

Selain itu, turut dibincangkan adalah kemajuan usahasama bersama *Heads of ASEAN Power Utilities/ Authorities* (HAPUA), cabaran dalam pencapaian sasaran AERN dalam persekitaran penularan pandemik Covid-19 serta persiapan laporan cadangan kepada Mesyuarat Pegawai-Pegawai Kanan ASEAN Mengenai Tenaga (SOME) yang ke-38.

In addition, other issues discussed were the progress of the joint venture with the Heads of ASEAN Power Utilities/Authorities (HAPUA), challenges to achieving AERN targets in the Covid-19 pandemic environment as well as the preparation of a proposal report for the 38th ASEAN Senior Officials Meeting on Energy (SOME).

MAJLIS MENANDATANGANI MoU ANTARA ST DAN *ENERGY MARKET AUTHORITY* (EMA), SINGAPURA

Hubungan dua hala dan kerjasama strategik antara ST dan *Energy Market Authority* (EMA), Singapura bertujuan meningkatkan kerjasama kedua-dua agensi kawal selia tenaga ini khususnya dalam bidang tenaga dengan lebih bersepadu dalam pembangunan ekonomi serantau.

Pada 28 Oktober 2020, majlis menandatangani MoU di antara ST dan EMA telah diadakan secara dalam talian dan merupakan julung kali kaedah seumpama ini dilaksanakan bagi majlis menandatangani oleh ST. MoU ini bertujuan memudahkan perkongsian maklumat mengenai amalan dan pengalaman kawal seliaan sektor tenaga di antara ST dan EMA, sejajar dengan perkembangan semasa landskap tenaga di peringkat serantau dan antarabangsa.

MoU SIGNING CEREMONY BETWEEN THE COMMISSION AND THE ENERGY MARKET AUTHORITY (EMA), SINGAPORE

The bilateral relationship and strategic cooperation between the Commission and the Energy Market Authority (EMA), Singapore aim to enhance cooperation between the two energy regulatory agencies, especially in the field of energy and joint regional economic development.

On 28 October 2020, the MoU signing ceremony between the Commission and EMA was held online, which was also the first time a signing ceremony was conducted online by the Commission. The MoU aimed to facilitate the sharing of information on energy sector regulatory practices and experiences between the Commission and EMA in line with current developments in the regional and international energy landscape.

KERJASAMA BERSAMA PIHAK-PIHAK BERKEPENTINGAN DALAM INISIATIF PELAN KOMUNIKASI LIBERALISASI PASARAN GAS ASLI (*NATURAL GAS MARKET LIBERALISATION COMMUNICATIONS PLAN* – NGMLCP)

Sebagai Pengerusi dan juga Sekretariat Jawatankuasa Teknikal Pelan Komunikasi Liberalisasi Pasaran Gas Asli (NGMLCP), ST telah bekerjasama dengan pihak-pihak berkepentingan dan penggiat industri untuk mendapatkan pandangan dan memahami isu-isu berkenaan liberalisasi pasaran gas. Antara pihak berkepentingan bagi NGMLCP yang terlibat adalah:

- PETRONAS
- Persatuan Gas Malaysia (MGA)
- Gas Malaysia Berhad (GMB)
- Jabatan Perdana Menteri (Unit Perancang Ekonomi - EPU)
- PEMANDU Sdn Bhd (PASB)

COOPERATION WITH STAKEHOLDERS IN THE NATURAL GAS MARKET LIBERALISATION COMMUNICATION PLAN (NGMLCP) INITIATIVE

As the Chair and the Secretariat of the Natural Gas Market Liberalisation Communication Plan (NGMLCP) Technical Committee, the Commission engaged with stakeholders and industry players to garner views and understand issues regarding gas market liberalisation. Among the stakeholders involved in the NGMLCP initiative were:

- *PETRONAS*
- *Malaysian Gas Association (MGA)*
- *Gas Malaysia Berhad (GMB)*
- *Prime Minister's Department (Economic Planning Unit - EPU)*
- *PEMANDU Sdn Bhd (PASB)*

Perjalanan Malaysia untuk mencapai tahap liberalisasi pasaran gas asli yang sepenuhnya pasti mempunyai cabarannya yang tersendiri, namun, untuk melaksanakan transformasi sebesar ini, langkah yang dinamik perlu diambil bagi memastikan bekalan tenaga lebih lestari, pasaran yang merangsang persaingan sihat dan pilihan yang lebih baik kepada pengguna pada kadar harga yang lebih kompetitif.

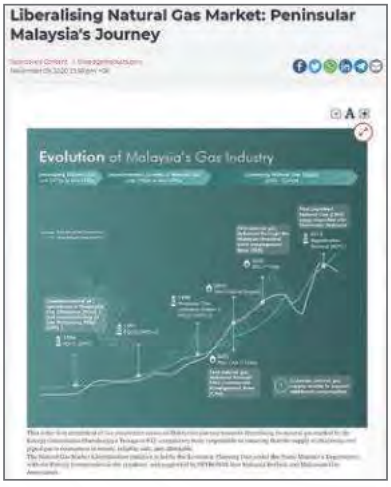
Melalui kerjasama dan pelan komunikasi yang dibangunkan ini, diharapkan inisiatif awal bagi membangunkan mekanisma liberalisasi pasaran gas dapat dimulakan secara berperingkat dengan mengambilkira kepentingan semua pihak dan juga kumpulan sasaran.

Artikel pertama ST mengenai liberalisasi pasaran gas telah diterbitkan di media cetak *The Edge Markets, The Star* dan BERNAMA sebagai salah satu inisiatif NGMLCP.

Malaysia's journey to fully liberalise its natural gas market certainly has its own challenges. However, implementing a transformation of this magnitude requires taking dynamic steps to ensure a more sustainable energy supply, a market that stimulates healthy competition and better choices for consumers at competitive price rates.

Through this cooperation as well as the development of the communication plan, the initial initiative to develop a gas market liberalisation mechanism is envisioned to be initiated in stages by considering the interests of all parties and target groups involved.

As part of the NGMLCP initiative, the Commission published its first article on gas market liberalisation in The Edge Markets, The Star and BERNAMA.



ASEAN FORUM ON COAL (AFOC)

ASEAN Forum on Coal (AFOC) merupakan salah satu daripada beberapa *Specialised Energy Bodies* di bawah Mesyuarat Menteri-Menteri ASEAN Mengenai Tenaga (AMEM). Bagi *ASEAN Plan of Action for Energy Cooperation* (APAEC) 2016-2025, yang merupakan program teras bagi kerjasama sektor tenaga di peringkat ASEAN, AFOC telah dipertanggungjawabkan untuk menerajui Program *Area Coal and Clean Coal Technology*. Ketua Pegawai Eksekutif ST telah dilantik sebagai Pengerusi AFOC bagi sesi 2019 ke 2020 di mana pelbagai program dan aktiviti telah berjaya dilaksanakan sepanjang tempoh tersebut:

ASEAN FORUM ON COAL (AFOC)

The ASEAN Forum on Coal (AFOC) is one of the several Specialised Energy Bodies under the ASEAN Ministers on Energy Meeting (AMEM). For the ASEAN Plan of Action for Energy Cooperation (APAEC) 2016-2025, a core programme for energy sector cooperation at the ASEAN level, AFOC has been tasked to lead the Coal and Clean Coal Technology Area Programme. The Chief Executive Officer of the Commission has been appointed as the Chairman of AFOC for the 2019 to 2020 session where various programmes and activities have been successfully implemented during the period:

a. Mesyuarat *18th AFOC & Associated Meetings* yang diadakan secara dalam talian pada 7 hingga 9 Julai 2020.
b. Penglibatan aktif dalam membangunkan APAEC *Phase 2 2021-2025* terutamanya berkaitan Program *Area Coal and Clean Coal Technology*.
c. *ASEAN Coal Business Roundtable Dialogue* yang julung kalinya diadakan secara dalam talian dan dihadiri oleh lebih 150 peserta dari rantau ASEAN dan agensi-agensi arang batu antarabangsa.
d. Mesyuarat *Board of Judge* bagi *ASEAN Coal Awards* bagi membincangkan garis panduan dan menambah baik sistem pemarkahan.
e. *Focus Group Discussions on ASEAN Coal Centre of Excellence.*

a. The 18th AFOC & Associated Meetings which was held online from 7 to 9 July 2020.
b. Active participation in the development of the APAEC Phase 2 2021-2025, particularly in the Coal and Clean Coal Technology Area Programme.
c. The ASEAN Coal Business Roundtable Dialogue, which was held online for the first time and attended by over 150 participants from the ASEAN region and international coal agencies.
d. Board of Judges meeting for the ASEAN Coal Awards to discuss guidelines and improvements to the scoring system.
e. Focus Group Discussions on ASEAN Coal Centre of Excellence.

SESI-SESI LIBAT URUS KESELAMATAN ELEKTRIK BERSAMA PIHAK INDUSTRI

Dalam usaha pembangunan dan pelaksanaan pelbagai polisi keselamatan elektrik, ST telah melaksanakan beberapa libat urus secara berterusan bersama pihak industri sepanjang 2020. ST berusaha dalam pelaksanaan mitigasi kes kemalangan elektrik yang melibatkan sektor tenaga, perikanan, perladangan dan telekomunikasi.

Mesyuarat Penyelarasan Prosedur Kerja Korekan Pihak Ketiga

Pada 2 Mac 2020, mesyuarat bagi membincangkan penyelarasan prosedur kerja korekan pihak ketiga telah diadakan bagi pelaksanaan pelan tindakan bagi mengurangkan kemalangan elektrik dan gangguan bekalan yang melibatkan aktiviti kerja korekan pihak ketiga. Sesi perkongsian daripada beberapa pihak termasuk Jabatan Kerja Raya (JKR), Suruhanjaya Perkhidmatan Air Negara (SPAN), Suruhanjaya Komunikasi dan Multimedia Malaysia (SKMM), Pihak Berkuasa Tempatan (PBT), TNB dan Sabah Electricity Sdn. Bhd. (SESB) berlangsung di mana beberapa isu telah diketengahkan bagi penambahbaikan prosedur kerja korekan pihak ketiga secara keseluruhannya.

Lanjutan dari hasil mesyuarat ini, ST berhasrat membangunkan dan menyelaraskan panduan kerja korekan pihak ketiga berdasarkan prosedur dan dokumen garis panduan sedia ada yang digunapakai oleh pelbagai pihak yang berkenaan.

ENGAGEMENT SESSIONS WITH INDUSTRY PLAYERS REGARDING ELECTRICAL SAFETY

In an effort to develop and implement various electrical safety policies, the Commission implemented a number of engagement sessions with industry players throughout 2020. The Commission strives to mitigate the risk of electrical accident cases in the energy, fisheries, plantation and telecommunication sectors.

Coordination Meeting for Third Party Digging Work Procedures

On 2 March 2020, a meeting was held to discuss the coordination of third party digging procedures and the implementation of an action plan to reduce electrical accidents and supply disruptions involving third party digging activities. Sharing sessions from several parties including the Public Works Department (JKR), the National Water Services Commission (SPAN), the Malaysian Communications and Multimedia Commission (MCMC), Local Authorities, TNB and Sabah Electricity Sdn. Bhd. (SESB) took place during which several issues on improvements to third party digging work procedures were highlighted.

Following the outcome of this meeting, the Commission intends to develop and coordinate the third party digging work guidelines based on existing procedures and guideline documents adopted by various relevant parties.

Lembaga Kemajuan Ikan Malaysia (LKIM)

Pada 9 Mac 2020, ST telah mengadakan sesi libat urus bersama pihak Lembaga Kemajuan Ikan Malaysia (LKIM) sebagai pelan tindakan susulan daripada isu kemalangan elektrik yang melibatkan sektor perikanan. Antara pelan tindakan yang dibincangkan termasuk:

- Keperluan bagi pihak LKIM dan persatuan nelayan untuk membuat pendaftaran pepasangan bagi pepasangan yang mempunyai Jana Kuasa Tunggu Sedia.
- Pelantikan orang kompeten yang mengendalikan pepasangan eletkrik.
- Langkah memastikan pemasangan peranti arus baki sebagai perlindungan terhadap arus bocor ke bumi diadakan.

Program kesedaran keselamatan elektrik kepada kakitangan dan kontraktor juga ditekankan untuk dianjurkan oleh pihak LKIM dan persatuan nelayan di seluruh Malaysia. Selain itu, pihak LKIM juga perlu memastikan pelaksanaan pemeriksaan pepasangan jeti-jeti di seluruh Malaysia dilakukan dengan lebih kerap.

Malaysian Palm Oil Board (MPOB)

Pada 10 Mac 2020, sesi libat urus bersama pihak *Malaysian Palm Oil Board* (MPOB) telah diadakan bagi membincangkan isu keselamatan elektrik susulan daripada kemalangan elektrik yang melibatkan sektor perladangan. ST memberi peringatan kepada pihak MPOB dan pengusaha ladang sawit agar jarak kerja yang selamat sentiasa dipatuhi bagi mengelakkan berlakunya kemalangan elektrik.

Pihak MPOB serta pengusaha ladang sawit juga disarankan agar mendapatkan kebenaran membina dan kebenaran mula operasi dari ST secara dalam talian melalui sistem ECOS.

Wakil persatuan peladang turut diminta agar memberi senarai pengusaha kebun atau ladang sawit yang dikenalpasti berhampiran dengan talian elektrik milik utiliti kepada ST. Di samping itu, ST juga meminta MPOB untuk menjalankan kajian penggunaan galah berpenebat bagi kerja-kerja perladangan yang berhampiran dengan talian elektrik.

Fisheries Development Authority of Malaysia (LKIM)

On 9 March 2020, the Commission held an engagement session with the Fisheries Development Authority of Malaysia (LKIM) following electrical accidents involving the fisheries sector. Among the action plans discussed were:

- *A requirement for LKIM and fishermen's associations to register installations with Standby Generator sets.*
- *The appointment of competent persons to operate electrical installations.*
- *Measures to ensure the installation of residual current devices as a protection against current leakages to earth.*

Electrical safety awareness programmes for staff and contractors were also emphasised, to be held by LKIM and fishermen's associations across Malaysia. In addition, LKIM was required to ensure that inspections of installations at jetties across Malaysia were conducted more frequently.

Malaysian Palm Oil Board (MPOB)

On 10 March 2020, an engagement session with the Malaysian Palm Oil Board (MPOB) was held to discuss electrical safety issues following electrical accidents involving the plantations sector. The Commission urged MPOB and oil palm plantation operators to always adhere to safe working clearance to prevent electrical accidents.

MPOB and oil palm plantation operators were also advised to obtain building permits and the permits to commence operations from the Commission through the ECOS system online.

Representatives from the farmers' association were also requested to provide the Commission with a list of oil palm plantation operators or plantations that are in close vicinity to the utility's power lines. In addition, the Commission also requested MPOB to conduct a study on the use of insulated poles for plantation works situated close to power lines.

Pihak Utiliti Telekomunikasi dan Tenaga

Pada 25 November 2020, pihak telekomunikasi dan pihak utiliti tenaga telah dijemput hadir ke sesi libat urus anjuran ST bagi membincangkan pelan tindakan susulan daripada kemalangan elektrik semasa kerja-kerja berhampiran talian atas utiliti. Antara pelan tindakan yang dibincangkan temasuk:

- Penambahbaikan panduan Telekom Malaysia (TM) yang sedia ada atau pembangunan prosedur yang bersesuaian bagi penyelarasan kerja-kerja di talian telekomunikasi berhampiran talian elektrik utiliti.
- Cadangan anjuran program kesedaran keselamatan elektrik diberikan kepada kakitangan dan kontraktor oleh pihak telekomunikasi dan utiliti tenaga.
- Kerjasama kedua-dua pihak utiliti telekomunikasi dan tenaga agar dapat membuat penyediaan pelan tindakan bersama bagi mengurangkan kes kemalangan elektrik.

Telecommunication and Power Utilities

On 25 November 2020, telecommunication and power utilities were invited to attend an engagement session organised by the Commission to discuss action plans following electrical accidents caused by work conducted near utilities' overhead lines. Among the action plans discussed were:

- *Improving existing Telekom Malaysia (TM) guidelines or developing an appropriate procedure for the coordination of works conducted on telecommunication lines nearby utilities' power lines.*
- *A proposal to organise electrical safety awareness programmes to staff and contractors by telecommunication and power utilities.*
- *A cooperation between telecommunication and power utilities to prepare a joint action plan to reduce the number of electrical accidents.*

IECEx NATIONAL VIRTUAL CONFERENCE

Pada 20 Oktober 2020, persidangan anjuran usaha sama Petronas, *The Institution of Engineers Malaysia* (IEM), *Standards Malaysia* serta *International Electrotechnical Commission System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres* (IECEx System) telah diadakan secara dalam talian.

ST telah dijemput sebagai penceramah bagi memberi perkongsian maklumat mengenai kemalangan elektrik dan pelan mitigasi yang menitikberatkan pepasangan elektrik, peranan orang kompeten dan kelengkapan elektrik dari aspek keselamatan elektrik khususnya bagi pihak yang terlibat dalam sektor industri yang terdedah kepada persekitaran yang mudah meletup.

IECEx NATIONAL VIRTUAL CONFERENCE

On 20 October 2020, an online conference was held, jointly organised by Petronas, The Institution of Engineers Malaysia (IEM), Standards Malaysia and the International Electrotechnical Commission System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres (IECEx System).

The Commission was invited as a speaker to share information on electrical accidents and mitigation plans with emphasis on electrical installations, the role of competent persons and electrical equipment from the aspect of electrical safety, especially for those involved in industrial sectors that are exposed to explosive environments.

SESI-SESI WEBINAR BERSAMA SESB: AMALAN KERJA SELAMAT PENGGUNAAN PERMIT MENJALANKAN KERJA (PMK)

Pada 15 sehingga 17 Disember 2020, tiga (3) sesi webinar perkongsian maklumat mengenai amalan kerja selamat penggunaan Permit Menjalankan Kerja (PMK) telah diadakan secara dalam talian bersama SESB kepada kumpulan sasaran seperti kakitangan, orang kompeten dan kontraktor elektrik SESB.

WEBINAR SESSIONS WITH SESB: SAFE WORK PRACTICES WITH PERMITS TO WORK (PTW)

From 15 to 17 December 2020, three (3) knowledge sharing webinar sessions on safe work practices with Permits to Work (PTW) were held online with SESB to target groups including staff members, competent persons and SESB electrical contractors.

Tujuan sesi webinar ini adalah bagi memberi pendedahan kepada peserta mengenai prosedur kerja selamat yang perlu dipatuhi.

Sesi webinar kerjasama bersama SESB ini juga adalah sebagai pelaksanaan pelan tindakan susulan daripada kemalangan elektrik yang melibatkan kakitangan atau kontraktor elektrik utiliti semasa kerja-kerja elektrik yang tidak mematuhi prosedur kerja selamat.

The purpose of the webinar was to provide participants with exposure to safe work procedures that need to be adhered to.

This collaborative webinar session with SESB also served as the implementation of an action plan following electrical accidents involving power utility workers or electrical contractors due to non-compliance with safe work procedures.

BENGKEL PANDUAN PENDAWAIAN ELEKTRIK DI BANGUNAN KEDIAMAN

Pada 4 dan 5 Ogos 2020, bengkel anjuran ST telah diadakan untuk membincangkan secara komprehensif kandungan Panduan Pendawaian Elektrik di Bangunan Kediaman serta mengambil kira maklum balas cadangan penambahbaikan panduan oleh pelbagai pihak industri.

Antara pihak industri yang terlibat termasuk JKR, IEM, *The Electrical and Electronics Association of Malaysia* (TEEAM), Pengerusi *Technical Committee on Low Voltage (LV) Switchgear, Control Gear and Wiring Accessories / Direct Current* (DC), *Malaysia Cable Manufacturers Association* (MCMA) dan pihak industri lain.

Bengkel ini secara khasnya bertujuan membantu proses pengemaskinian kandungan panduan ini selaras dengan perkembangan industri, teknologi semasa dan standard-standard yang terkini bagi mencapai peningkatan kawal selia keselamatan elektrik yang lebih baik.

ELECTRICAL WIRING IN RESIDENTIAL BUILDINGS GUIDE WORKSHOP

On 4 and 5 August 2020, a workshop organised by the Commission was held to comprehensively discuss the contents of the Electrical Wiring in Residential Buildings Guide, while also taking into account feedback from various industry players on the proposed improvements to the guide.

Among the industry players involved were JKR, IEM, The Electrical and Electronics Association of Malaysia (TEEAM), the Chairman of the Technical Committee on Low Voltage (LV) Switchgear, Control Gear and Wiring Accessories / Direct Current (DC), Malaysia Cable Manufacturers Association (MCMA) and other industry players.

The workshop aimed to assist the process of updating the content of this guide in line with industry developments, current technologies and the latest standards, to enhance electrical safety regulation.

JOINT REGULATORY ADVISORY COMMITTEE (JRAC) ON ELECTRICAL AND ELECTRONIC EQUIPMENT MEETING KE-25

Pada 10 September 2020, mesyuarat *Joint Regulatory Advisory Committee* (JRAC) yang ke-25 telah bersidang secara dalam talian dengan kehadiran *International Electrotechnical Commission* (IEC). JRAC merupakan badan yang ditubuhkan oleh anggota *Asia-Pacific Economic Cooperation* (APEC) sebagai sub-kumpulan rasmi di bawah *APEC Sub-Committee on Standards and Conformance* (SCSC) di mana antara tujuan utamanya adalah bagi mempromosi dan memudahkan dialog, kerjasama, dan perkongsian maklumat di antara *regulator-to-regulator*.

25TH JOINT REGULATORY ADVISORY COMMITTEE (JRAC) ON ELECTRICAL AND ELECTRONIC EQUIPMENT MEETING

On 10 September 2020, the 25th Joint Regulatory Advisory Committee (JRAC) meeting convened online with the participation of the International Electrotechnical Commission (IEC). JRAC was established by members of the Asia-Pacific Economic Cooperation (APEC) as an official sub-group under the APEC Sub-Committee on Standards and Conformance (SCSC), and tasked with promoting and facilitating dialogue, cooperation, and information sharing between regulators.

Antara perkara-perkara yang dibincangkan pada JRAC kali ini termasuk:

- Perkongsian suatu kajian kes berkaitan pandemik Covid-19 yang menitikberatkan keperluan anggota JRAC untuk memperluaskan lagi standard dan sistem pensijilan yang diiktiraf bagi meningkatkan pilihan untuk para pembekal.
- Perkongsian tentang pengalaman negara anggota JRAC yang telah memutuskan untuk mempermudahkan lagi proses permohonan lesen untuk mengimport produk yang memerlukan standard industri.
- Wakil daripada IEC memberikan maklumat terkini mengenai IEC yang kini menawarkan latihan melalui *IEC Academy dan Capacity Building* (ACB).
- Pembentangan berkenaan *ASEAN Consultative Committee on Standards and Quality – 30th Joint Sectoral Committee for Electrical and Electronic Equipment* (JSC EEE) *Mutual Recognition Arrangement* (MRA).
- Perbincangan mengenai keperluan JSC EEE untuk memberikan skor penilaian risiko dan hasil klasifikasi bagi setiap Negara Anggota ASEAN *(ASEAN Member States* - AMS*)*.
- Perbincangan mengenai penyenaraian data yang sedia ada atau statistik laporan ujian yang diterima oleh setiap AMS yang membuktikan kejayaan JSCEEE MRA.

Among the matters discussed at the meeting this year were:

- *Review of a Covid-19 pandemic-related case study highlighting the need for JRAC members to further expand recognised standards and certification systems to increase choices for suppliers.*
- *Sharing of experiences by JRAC member countries that have further simplified the licence application process for the importation of products that are subjected to industry standards.*
- *Updates from IEC representatives on the IEC Academy and Capacity Building (ACB).*
- *A presentation on the ASEAN Consultative Committee on Standards and Quality - 30th Joint Sectoral Committee for Electrical and Electronic Equipment (JSC EEE) Mutual Recognition Arrangement (MRA).*
- *A discussion on the requirement for the JSC EEE to provide risk assessment scores and classification outcomes for each ASEAN Member State (AMS).*
- *A discussion on the existing data listings or test report statistics received by each AMS, proving the success of the JSCEEE MRA.*

MESYUARAT-MESYUARAT *JOINT SECTORAL COMMITTEE FOR ELECTRICAL AND ELECTRONIC EQUIPMENT (JSC EEE)* PADA 2020

Mesyuarat *Joint Sectoral Committee for Electrical and Electronic Equipment* (JSC EEE) merupakan mesyuarat di peringkat ASEAN yang diadakan dua (2) kali setahun di mana negara yang menjadi tuan rumah adalah ditentukan secara bergilir-gilir antara negara-negara ASEAN.

Mesyuarat JSC EEE adalah bertanggungjawab untuk memastikan pencapaian sektoral MRA bagi kelengkapan elektrik dan elektronik dapat dilaksanakan dengan lebih berkesan. Antara mekanisme perjalanan mesyuarat adalah persetujuan secara konsesi antara negara-negara ahli dari aspek-aspek seperti undang-undang, garis panduan dan prosedur.

JOINT SECTORAL COMMITTEE FOR ELECTRICAL AND ELECTRONIC EQUIPMENT (JSC EEE) MEETINGS IN 2020

The Joint Sectoral Committee for Electrical and Electronic Equipment (JSC EEE) is a biannual meeting held at the ASEAN level. The host country for the meeting is determined by rotation between the ASEAN countries.

The JSC EEE meeting is responsible for ensuring that the sectoral achievements of the MRA for electrical and electronic equipment can be implemented more effectively. Among the mechanisms of the meeting include concessionary agreements between member countries on aspects pertaining to the laws, guidelines and procedures.

MESYUARAT JSC EEE KE-29

Pada 28 hingga 29 Julai 2020, mesyuarat JSC EEE yang ke-29 telah diadakan melalui dalam talian. Mesyuarat telah membincangkan mengenai senarai *Conformity Assessment Body* (CAB) di bawah *ASEAN Sectoral Mutual Recognition Arrangement on Electrical and Electronic Equipment* (ASEAN EE MRA). Setakat ini sebanyak 19 makmal pengujian dan lapan (8) badan pensijilan yang telah berdaftar dan disenaraikan di bawah ASEAN EE MRA.

Mesyuarat turut menyenaraikan CAB yang akan tamat tempoh dan memerlukan negara ASEAN untuk mengemukakan permohonan pembaharuan bagi memastikan penerimaan laporan ujian dan pensijilan terus diterima pakai di antara negara ASEAN.

Mesyuarat juga membincangkan mengenai keputusan kaji selidik terhadap kadar penerimaan laporan ujian dan *Certificate of Conformity* (CoC) bagi pelaksanaan ASEAN EE MRA di antara setiap negara ASEAN.

Tujuan kaji selidik ini dibuat adalah bagi mengenalpasti halangan dan cabaran yang ada untuk melaksanakan ASEAN EE MRA tersebut.

Pelaksanaan *ASEAN Harmonised Electrical and Electronic Equipment Regulatory Regime* (AHEEERR)

Mesyuarat JSC EEE yang ke-29 ini juga telah membincangkan mengenai perincian pelaksanaan AHEEERR dan prosedur-prosedur untuk melaksanakan perkara-perkara berikut:

- Mengemaskini status pelaksanaan ASEAN EE MRA termasuk cadangan penyenaraian baharu dan pembaharuan makmal-makmal pengujian, pensijilan yang diiktiraf di peringkat ASEAN.
- Status penerimaan perjanjian AHEEERR ke dalam perundangan setiap negara ahli.
- Status penyediaan dokumen seperti *Info Booklet on AHEEERR* dan *Conformity Assessment Procedure*.
- Status pengharmonian standard dan edisi bagi produk elektrik dan elektronik.

29TH JSC EEE MEETING

From 28 to 29 July 2020, the 29th JSC EEE meeting was held online to discuss the list of Conformity Assessment Bodies (CAB) under the ASEAN Sectoral Mutual Recognition Arrangement on Electrical and Electronic Equipment (ASEAN EE MRA). To date, a total of 19 testing laboratories and eight (8) certification bodies have been registered and listed under the ASEAN EE MRA.

The meeting also listed the expiring CABs that required ASEAN countries to submit renewal applications to ensure the acceptance of test and certification reports between ASEAN countries.

The results of the rate of acceptance of test reports and Certificate of Conformity (CoC) surveys for the implementation of the ASEAN EE MRA among each ASEAN country was also discussed during the meeting.

The purpose of this survey was to identify the obstacles and challenges that exist in implementing the ASEAN EE MRA.

Implementation of the ASEAN Harmonised Electrical and Electronic Equipment Regulatory Regime (AHEEERR)

The 29th JSC EEE meeting also discussed details of the implementation of the AHEEERR and procedures for the following:

- *Updating the status of the ASEAN EE MRA implementation including the proposed new listing and renewal of testing laboratories and certifications recognised at the ASEAN level.*
- *Status of acceptance of the AHEEERR agreement into the legislation of each member state.*
- *Preparation status of documents such as the Info Booklet on AHEEERR and Conformity Assessment Procedure.*
- *Standards and editions harmonisation status for electrical and electronic products.*

MESYUARAT JSC EEE KE-30

Pada 26 hingga 27 Oktober 2020, JSC EEE yang ke-30, yang juga merupakan mesyuarat kedua bagi 2020, telah diadakan secara persidangan dalam talian mengikut waktu *ASEAN Secretariat* (ASEC).

30TH JSC EEE MEETING

From 26 to 27 October 2020, the 30th JSC EEE, which was also the second meeting for 2020, was held online following the ASEAN Secretariat's (ASEC) time.

Pada mesyuarat JSC EEE ke-30 ini, Malaysia telah diwakili oleh ST, selaku badan kawal selia sektor tenaga dan *SIRIM QAS International* sebagai delegasi bagi Badan Penilaian Pematuhan Tempatan (Makmal Pengujian dan Badan Pensijilan).

Secara umumnya mesyuarat JSC EEE ke-30 ini diadakan bagi membincangkan hal-hal berkaitan untuk merealisasikan pembentukan *ASEAN Economic Community* (AEC).

Mesyuarat ini juga turut membincangkan perkara berkaitan isu-isu yang timbul bagi mencapai matlamat seperti yang dimetrai dalam perjanjian AHEEERR. Antaranya adalah:

- Negara-negara ahli akan menerima laporan ujian dan pensijilan yang dikeluarkan oleh badan-badan pengujian dan pensijilan masing-masing yang ditetapkan.
- Keperluan teknikal oleh negara-negara ahli akan dikenalpasti dan dipantau oleh makmal-makmal pengujian dan pensijilan.
- Penerimaan *Certificate of Conformity* (CoC) di rantau ASEAN tidak lagi akan tertakluk kepada pengujian dan pensijilan yang berulang-ulang antara negara-negara ahli. Dengan ini, kos pengujian akan menjadi lebih rendah serta menjimatkan masa bagi membawa produk-produk baharu ke pasaran.

The Commission represented Malaysia at the meeting as the energy sector regulatory body with SIRIM QAS International as the delegate for the Local Conformity Assessment Body (Testing Laboratory and Certification Body).

The meeting was held to discuss matters relating to the formation of the ASEAN Economic Community (AEC).

The meeting also discussed issues faced in achieving the goals outlined in the AHEEERR agreement. Among the issues discussed were:

- *Member states will receive test and certification reports issued by their respective designated testing and certification bodies.*
- *Technical requirements of member countries will be identified and monitored by testing and certification laboratories.*
- *The acceptance of the Certificate of Conformity (CoC) in the ASEAN region will no longer be subjected to repeated testing and certification between member countries. This will lower testing costs and save time in the process of bringing new products to the market.*

HAB MAKLUMAT TENAGA MALAYSIA (MEIH) SEBAGAI SUMBER RUJUKAN INDUSTRI
MALAYSIA ENERGY INFORMATION HUB (MEIH) AS AN INDUSTRY REFERENCE SOURCE

PORTAL MEIH

Portal MEIH merupakan pusat rujukan data tenaga negara yang komprehensif dan seringkali menjadi rujukan utama penggubal dasar tenaga negara, agensi Kerajaan, agensi swasta, industri, para pelajar serta masyarakat umum. Data tenaga ini memainkan peranan penting dalam pembentukan dasar tenaga negara serta perancangan pembekalan tenaga.

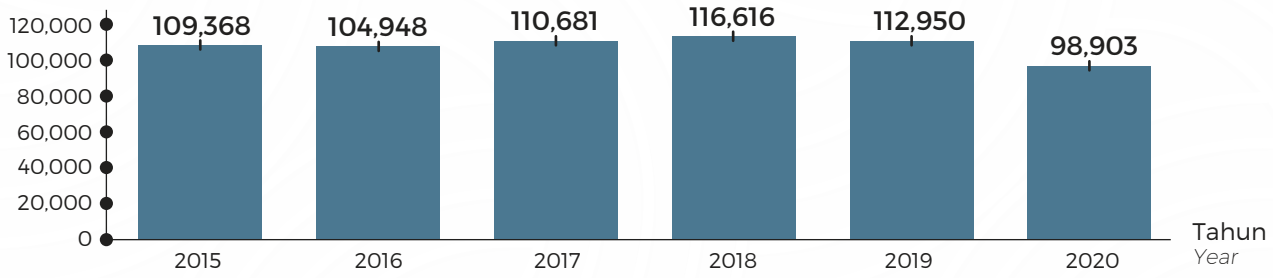
Pada 2020, portal MEIH telah dikunjungi sebanyak 98,903 kali dari serata dunia berbanding 112,950 kali pada 2019.

MEIH PORTAL

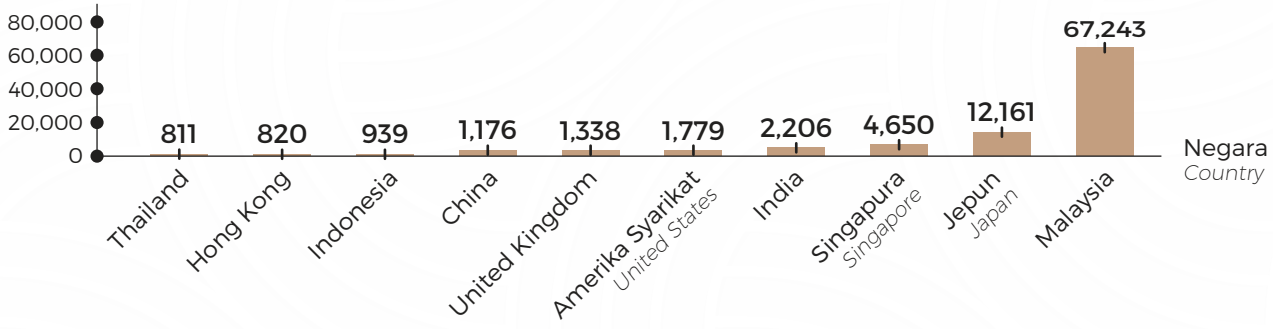
The MEIH portal is a comprehensive national energy database and is often the main reference for national energy policymakers, Government agencies, private agencies, the industry, students and the general public. Energy data plays an important role in the formulation of national energy policies as well as energy supply planning.

In 2020, the MEIH portal was visited 98,903 times from around the world compared to 112,950 times in 2019.

Bilangan Kunjungan Portal MEIH, 2015-2020
Number of MEIH Portal Visits, 2015-2020



Sepuluh Negara Teratas yang Mengunjungi MEIH
Top 10 Visitors to MEIH by Country

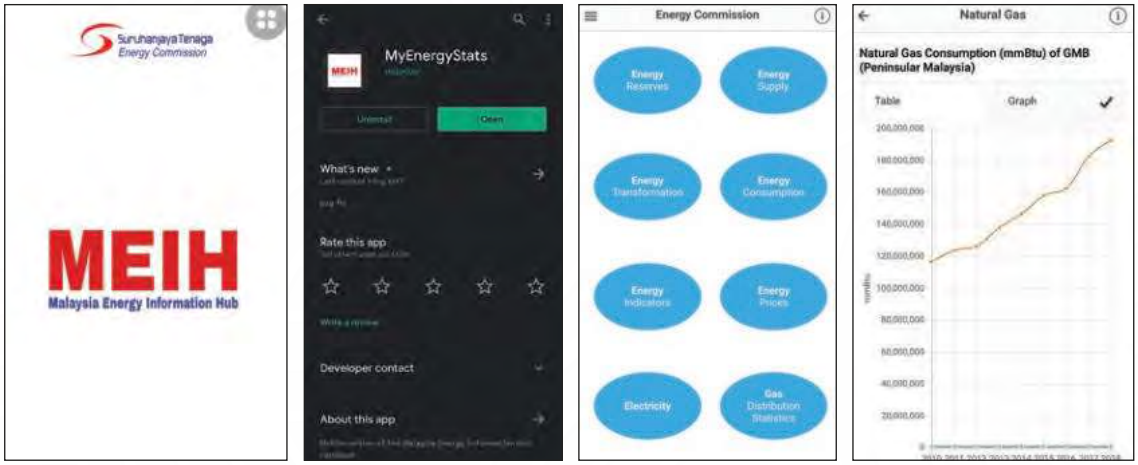


APLIKASI *MOBILE MYENERGYSTATS*

Dalam usaha untuk menyalurkan maklumat data tenaga negara dengan lebih meluas, ST telah membangunkan aplikasi *mobile MyEnergyStats* pada 2017. Aplikasi ini boleh dimuat turun secara percuma dan boleh digunapakai pada telefon bimbit jenis *Android* dan *Apple*. Data di dalam aplikasi ini akan dikemas kini setiap tahun dan juga boleh diakses di luar talian untuk kemudahan rujukan dan penyelidikan pengguna.

MYENERGYSTATS MOBILE APPLICATION

In an effort to expand the dissemination of national energy data, the Commission developed the MyEnergyStats Mobile Application in 2017. The application can be downloaded for free on both Android and Apple mobile devices. The data in the application will be updated annually and can also be accessed offline for the convenience of user reference and research.



PERKONGSIAN DATA TENAGA BERSAMA ORGANISASI ANTARABANGSA

ST juga aktif mengadakan sesi perbincangan dan perkongsian data tenaga bersama industri dan agensi tenaga baik di dalam mahupun di luar negara. Antaranya adalah:

- *ASEAN Centre for Energy* (ACE)
- *Asia Pacific Energy Research Centre* (APERC)
- *United Nations Statistics Division* (UNSD)
- *Joint Organisations Data Initiative* (JODI)
- *International Energy Agency* (IEA)
- *International Renewable Energy Agency* (IRENA)
- *Economic Research Institute for ASEAN and East Asia* (ERIA)

Selain itu, antara penerbitan dan kajian peringkat ASEAN dan antarabangsa yang menggunapakai data-data tenaga MEIH termasuk:

- *ASEAN Energy Outlook*
- *APEC Energy Overview*
- *APEC Energy Demand and Supply Outlook*
- Kertas Kajian ERIA

ENERGY DATA COOPERATION WITH INTERNATIONAL ORGANISATIONS

The Commission actively holds energy data discussions and sharing sessions with energy industries and agencies, both locally and abroad. Among the industries and agencies involved include:

- *ASEAN Centre for Energy (ACE)*
- *Asia Pacific Energy Research Centre (APERC)*
- *United Nations Statistics Division (UNSD)*
- *Joint Organisations Data Initiative (JODI)*
- *International Energy Agency (IEA)*
- *International Renewable Energy Agency (IRENA)*
- *Economic Research Institute for ASEAN and East Asia (ERIA)*

In addition, among the ASEAN and international publications and studies that utilise energy data from MEIH include:

- *ASEAN Energy Outlook*
- *APEC Energy Overview*
- *APEC Energy Demand and Supply Outlook*
- *ERIA Study Paper*

MESYUARAT MENTERI-MENTERI ASEAN MENGENAI TENAGA (AMEM) KE-38
38TH ASEAN MINISTERS ON ENERGY MEETING (AMEM)

Mesyuarat Menteri-Menteri ASEAN Mengenai Tenaga (AMEM) yang ke-38 telah diadakan secara dalam talian pada 17 hingga 20 November 2020. ST telah menyertai mesyuarat ini untuk memberikan input berkaitan pendirian Malaysia dalam hal berkaitan kecekapan tenaga, tenaga boleh baharu (TBB), AERN, ASEAN-IRENA dan lain-lain.

Antara topik kemaskini yang dibincangkan adalah berkenaan perancangan ASEAN 2021-2025 (APAEC), bidang-bidang kerjasama dengan China, Jepun dan Korea, bidang-bidang kerjasama dengan IEA, IRENA, yang meliputi perkara berkenaan *Energy Efficiency, Energy Trilemma, Energy Transition, Regional Energy Policy and Planning, Coal and Clean Coal Technology* dan lain-lain.

Turut berlangsung adalah sesi *Ministers – CEO Dialogue* yang bertemakan *Responsive and Cohesive Energy Pathways for ASEAN* yang turut disertai oleh delegasi dari *ASEAN Energy Business Forum* (AEBF), delegasi ASEAN, rakan dialog serta beberapa organisasi antarabangsa.

The 38th ASEAN Ministers on Energy Meeting (AMEM) was held online from 17 to 20 November 2020. The Commission participated in this meeting to provide inputs on Malaysia's stance on energy efficiency, renewable energy (RE), AERN, ASEAN-IRENA and others.

Among the updates discussed were the ASEAN 2021-2025 (APAEC) plan, cooperation with China, Japan and Korea, cooperation with IEA and IRENA covering matters relating to Energy Efficiency, Energy Trilemma, Energy Transition, Regional Energy Policy and Planning, Coal and Clean Coal Technology and others.

The Ministers-CEO Dialogue session, themed Responsive and Cohesive Energy Pathways for ASEAN also took place, attended by delegates from the ASEAN Energy Business Forum (AEBF), ASEAN delegations, dialogue partners and several international organisations.

Malaysia juga turut mengambil peluang merakamkan penghargaan kepada negara anggota ASEAN yang lain atas sokongan yang diberikan semasa memegang jawatan Pengerusi AFOC dari 2018 hingga 2020 serta menyatakan minat Malaysia dalam meneruskan jawatan ketua *Renewable Energy Sub-Sector Network* (RE-SSN) sepanjang tempoh APAEC Fasa 2, dari 2021 hingga 2025, sejajar dengan peningkatan usaha Malaysia dalam menerapkan peralihan tenaga.

Malaysia juga turut berkongsi usahanya dalam mewujudkan platform untuk memperdagangkan *Renewable Energy Certificates* (REC) di mana sijil yang dikeluarkan akan disahkan oleh *International Renewable Energy Certificate Standards global registry*. Selain itu, Malaysia juga berharap dapat memperluaskan lagi platform REC dengan memasukkan perdagangan sumber RECS lain memandangkan kadar pengambilannya sangat menggalakkan.

Dalam sesi mesyuarat ini juga diumumkan para pemenang *ASEAN Energy Awards 2020* di mana 15 syarikat dari Malaysia muncul sebagai pemenang dalam dua (2) kategori utama iaitu *ASEAN Energy Efficiency and Conservation Best Practices* dan *ASEAN Renewable Energy Projects*.

ST komited dalam mesyuarat ini khususnya dalam agenda-agenda yang dibincangkan dan juga dalam *Ministers-CEO Dialogue* yang telah disertai yang mana kesemua inisiatif ini adalah selaras dengan hasrat ST untuk mencapai tahap bertaraf dunia sebagai badan kawal selia yang diiktiraf di peringkat antarabangsa.

Malaysia also took the opportunity to express appreciation to other ASEAN member countries for their support during the nation's tenure as AFOC Chairman from 2018 to 2020 and expressed interest to continue as the head of the Renewable Energy Sub-Sector Network (RE-SSN) for APAEC Phase 2 from 2021 to 2025, in line with Malaysia's increased efforts towards the energy transition.

Malaysia also shared its efforts in creating a platform to trade Renewable Energy Certificates (REC) where the certificates issued will be confirmed by the International Renewable Energy Certificate Standards global registry. In addition, Malaysia also hoped to further expand the REC platform by including trade in other RECS resources in line with the encouraging adoption rate it has received.

During this meeting, the winners of the ASEAN Energy Awards 2020 were also announced where 15 companies from Malaysia emerged as winners in two (2) main categories, namely the ASEAN Energy Efficiency and Conservation Best Practices and ASEAN Renewable Energy Projects.

The Commission demonstrated its commitment to this meeting especially in the agenda discussed including the Ministers-CEO Dialogue, as these initiatives were in line with its aspirations to become a world class energy regulator that is recognised globally.

MESYUARAT KHAS PEGAWAI-PEGAWAI KANAN ASEAN MENGENAI TENAGA (SOME) KE-38

38TH ASEAN SPECIAL SENIOR OFFICIALS MEETING ON ENERGY (SOME)

Mesyuarat Khas Pegawai-Pegawai Kanan ASEAN Mengenai Tenaga (SOME) yang ke-38 dan mesyuarat berkaitan telah diadakan pada 23 hingga 28 Ogos 2020 secara dalam talian dari Hanoi, Vietnam. Mesyuarat-mesyuarat lain yang telah turut diadakan dan disertai oleh ST bersama delegasi dari Kementerian Tenaga dan Sumber Asli (KeTSA) dan agensi-agensi lain di bawah KeTSA adalah mesyuarat ADC/APAEC, ASEAN-SOME, SOME-IEA, SOME-IRENA, SOME+3 (Japan, Korea, China), SOME-METI *(Ministry of Economy, Trade and Industry)* Japan, SOME-USA dan SOME-Russia.

Dalam mesyuarat tersebut, ST telah membentangkan laporan pencapaian AFOC dalam merealisasikan pelan *APAEC Phase I: 2016-2020*.

Sebagai persediaan melangkah ke 2021, mesyuarat juga turut membincangkan strategi-strategi di bawah *APAEC Phase 2* bagi tempoh 2021-2025.

The 38th ASEAN Special Senior Officials Meeting on Energy (SOME) and related meetings were held online from Hanoi, Vietnam from 23 to 28 August 2020. Other meetings that were also held and attended by the Commission with delegations from the Ministry of Energy and Natural Resources (KeTSA) and other agencies under KeTSA were ADC/APAEC, ASEAN-SOME, SOME-IEA, SOME-IRENA, SOME+3 (Japan, Korea, China), SOME-METI (Ministry of Economy, Trade and Industry) Japan, SOME-USA and SOME-Russia.

During the meeting, the Commission presented a report on AFOC's achievements in realising the APAEC Phase I: 2016-2020 plan.

To prepare for 2021, the meeting also discussed the strategies under APAEC Phase 2 from 2021 to 2025.

ASEAN ELECTROTECHNICAL VIRTUAL SYMPOSIUM AND EXHIBITION 2020

ASEAN ELECTROTECHNICAL VIRTUAL SYMPOSIUM AND EXHIBITION 2020

Pada 23 September 2020, program webinar ini merupakan anjuran usaha sama antara IEM, *Department of Standards Malaysia* dan ST di mana ST telah dijemput sebagai *keynote speaker* bagi simposium ini yang bertemakan *Standards Drive Electrotechnical Safety and Innovation* ini.

Program ini merupakan landasan perkongsian ilmu mengenai standard dari aspek keselamatan elektrik dengan mengambil kira integrasi pepasangan dan sistem elektrik serta perlindungan orang awam terhadap risiko kemalangan. Standard merupakan satu asas penilaian yang boleh digunapakai di peringkat antarabangsa bagi menjamin keselamatan orang ramai sebagai contoh mengurangkan kemasukan produk berkualiti rendah serta tidak mematuhi standard dalam pasaran di Malaysia.

The Commission was the keynote speaker at the ASEAN Electrotechnical Virtual Symposium and Exhibition which was held on 23 September 2020. This webinar, themed Standards Drive Electrotechnical Safety and Innovation, was jointly organised by IEM, Department of Standards Malaysia and the Commission.

This programme was a platform for knowledge sharing on standards from the aspect of electrical safety that took into account the integration of electrical installations and systems and the protection of the public against the risk of accidents. Standards are an assessment basis that can be applied internationally to ensure public safety which includes reducing the entry of low-quality and non-compliant products in the Malaysian market.

AUDIT ISO9001: 2015
ISO9001: 2015 AUDIT

Antara objektif inisiatif ini adalah untuk mendapatkan Pensijilan Pemantauan Kedua ISO 9001:2015 oleh *Lloyds Register Quality Assurance* (LRQA) serta mengekalkan dan memperbaiki Sistem Pengurusan Kualiti di ST secara berterusan. Selain itu, ianya memastikan pematuhan proses kerja di ST adalah selaras dengan piawaian standard ISO 9001:2015.

Pada 2018, ST telah memperolehi Sistem Pengurusan Kualiti (SPK) ISO 9001:2015 dari LRQA untuk tempoh tiga (3) tahun. Pada Januari 2020, Audit Pemantauan Kedua telah dijalankan di Ibu Pejabat ST dan tiga (3) Pejabat Kawasan ST (Pejabat Kawasan Kelantan, Pejabat Kawasan Kota Kinabalu dan Pejabat Kawasan Sandakan).

Tujuan lawatan audit ini adalah untuk menilai tahap kepatuhan sistem pengurusan dan proses kerja ST terhadap ISO 9001:2015. Pada Februari 2020, ST telah berjaya memperoleh Pensijilan Pemantauan Kedua dari LRQA diatas pencapaian dalam melaksanakan dan mengekalkan SPK serta pematuhan terhadap standard ISO 9001:2015.

Pensijilan Pemantauan Kedua ini bermakna Sistem Pengurusan Kualiti (SPK) ST telah berjaya melakukan pendekatan yang mantap serta diperakui secara global di dalam penekanan untuk memperbaiki proses kerja secara berterusan dan menguruskan risiko bagi memenuhi keperluan dan memenuhi kehendak pemegang taruh.

Among the objectives of this initiative was to obtain the Second ISO 9001: 2015 Monitoring Certification by Lloyds Register Quality Assurance (LRQA) as well as to continuously maintain and improve the Commission's Quality Management Systems (QMS). In addition, the initiative was to ensure compliance with the Commission's work processes in line with the ISO 9001: 2015 standard.

In 2018, the Commission obtained the QMS ISO 9001: 2015 from LRQA for a period of three (3) years. In January 2020, the Second Monitoring Audit was conducted at the Commission's Head Office and three (3) Regional Offices (Kelantan, Kota Kinabalu and Sandakan).

The purpose of this audit was to assess the Commission's management systems and work processes against the ISO 9001: 2015 standard. In February 2020, the Commission successfully obtained the Second Monitoring Certification from LRQA for its achievements in implementing and maintaining the QMS as well as compliance with international standards.

This Second Monitoring Certification demonstrates the robustness of the Commission's QMS as well as its continuous efforts to improve work processes and manage risks to meet the needs of its stakeholders.

06

PEMBANGUNAN KAPASITI DAN KEUPAYAAN
CAPACITY AND CAPABILITY BUILDING

PROFIL DAN STATISTIK WARGA KERJA
EMPLOYEE PROFILES AND STATISTICS

Pembangunan kapasiti tenaga kerja merupakan agenda asas yang dititikberatkan dalam pelan pembangunan korporat ST bagi memastikan ST sentiasa berkompetensi untuk menjalankan fungsi dan tanggungjawab sebagai badan kawal selia industri tenaga negara.

Bagi memenuhi keperluan ini, komposisi warga kerja yang terdiri daripada graduan dengan kepelbagaian latar belakang pengajian dan pengalaman professional merupakan fokus utama bagi memastikan ST berupaya, berkemahiran dan berkepakaran dalam melaksanakan fungsi-fungsi tersebut.

Menjelang akhir 2020, ST mempunyai kekuatan seramai 245 warga kerja eksekutif yang merangkumi kumpulan pengurusan rendah (48%), kumpulan pengurusan pertengahan (18%) dan kumpulan pengurusan tertinggi (3%), manakala baki seramai 111 (31%) warga kerja merupakan warga kerja di kumpulan bukan eksekutif, menjadikan jumlah keseluruhan warga kerja seramai 356 orang.

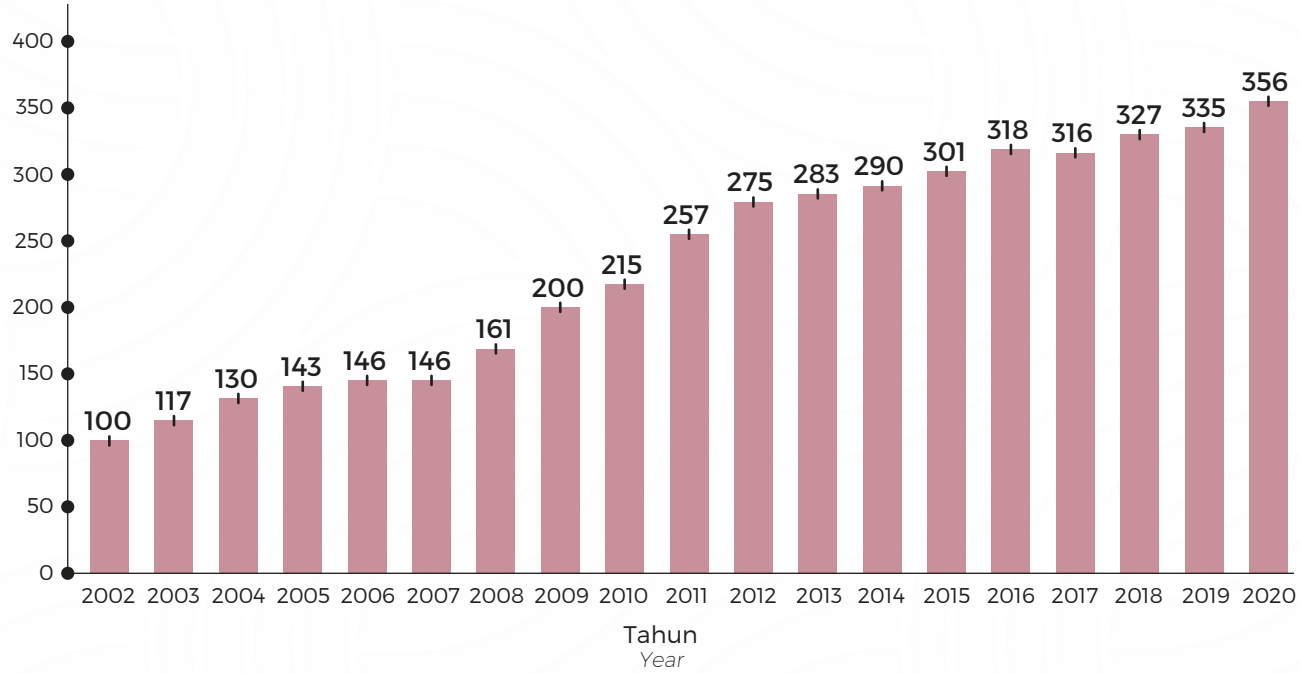
Workforce capacity building is a fundamental component of the Commission's corporate development plan to ensure that it is able to carry out its responsibilities as the national regulator of the energy industry.

To do so, the Commission employs graduates from various educational and professional backgrounds to ensure a diversity of knowledge and experiences.

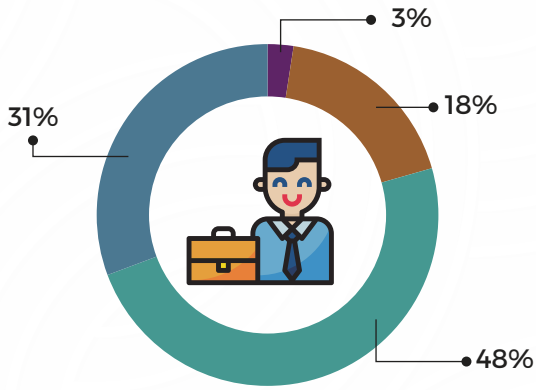
At the end of 2020, the Commission consisted of 245 executives made up of individuals in the junior (48%), middle (18%) and senior (3%) management positions, while the remaining 111 employees (31%) were non-executives. This brings the total number of employees to 356.

Statistik Warga Kerja
Employee Statistics

Bilangan Warga Kerja, 2002 - 2020
Number of Employees, 2002 – 2020



Komposisi Warga Kerja mengikut Kategori
Composition of Employees by Category



- Pengurusan Tertinggi *Senior Management*
- Pengurusan Pertengahan *Middle Management*
- Pengurusan Rendah *Junior Management*
- Bukan Eksekutif *Non-Executive*

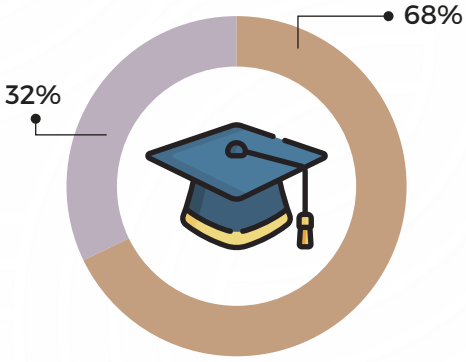
Sebahagian besar komposisi warga kerja di ST merupakan graduan kejuruteraan (68%) manakala selebihnya (32%) merupakan graduan dari pelbagai jurusan lain seperti undang-undang, ekonomi, kewangan, perakaunan, pengurusan perniagaan, sains komputer dan komunikasi massa. Taburan kepelbagaian ini menyokong struktur organisasi ST termasuk penubuhan fungsi baharu seperti Jabatan Kawal Selia Ekonomi, Jabatan Perancangan dan Komunikasi Strategik dan Jabatan Undang-undang dan Pengurusan Risiko, selain Jabatan-Jabatan teras lain yang berasaskan teknikal dalam bidang pembangunan tenaga elektrik dan gas.

Sepanjang 2020, seramai 14 orang warga kerja eksekutif dan 11 orang warga kerja bukan eksekutif daripada pelbagai bidang dan pengalaman profesional telah dilantik ke dalam perkhidmatan ST.

The majority of employees at the Commission are engineering graduates (68%) while the remaining (32%) are graduates from various other majors such as law, economics, finance, accounting, business management, computer science and mass communication. This diversity supports the establishment of new functions in the Commission such as the Economic Regulatory Department, the Strategic Planning and Communication Department, the Legal and Risk Management Department, as well as other technical core departments in the field of electricity and gas development.

In 2020, a total of 14 executives and 11 non-executives from various fields and professional backgrounds were appointed by the Commission.

Komposisi Warga Kerja Eksekutif mengikut Bidang Pengajian
Composition of Executive Employees by Field of Study

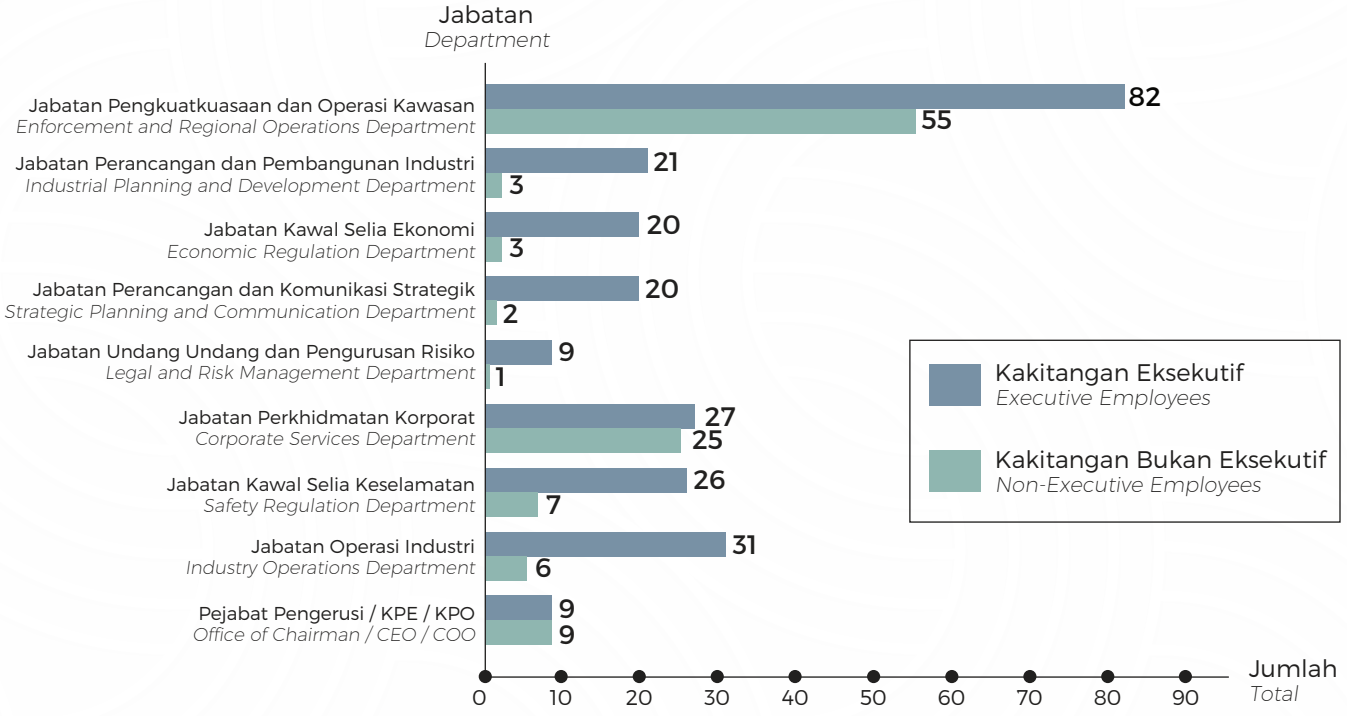


- Bidang Kejuruteraan: Elektrikal, Elektrikal / Elektronik, Mekanikal, Kimia, dan lain-lain
  Engineering fields: Electrical, Electrical/Electronic, Mechanical, Chemical, and others
- Bidang Pengajian Lain: Undang-undang, Ekonomi, Kewangan, Akaun, Pentadbiran Perniagaan, Sains Komputer, Media Massa
  Other Fields of Study: Law, Economics, Finance, Accounting, Business Administration, Computer Science, Mass Communications

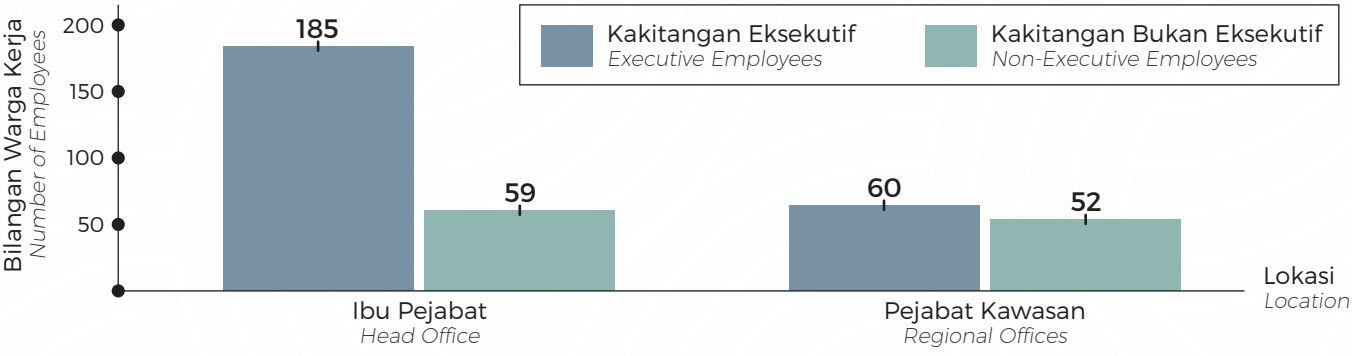
Memandangkan salah satu fungsi ST adalah aktiviti siasatan dan penguatkuasaan terhadap pematuhan yang memerlukan tugasan di lapangan, Jabatan Penguatkuasaan dan Operasi Kawasan mempunyai jumlah tenaga kerja terbesar iaitu seramai 137 orang warga kerja, terdiri daripada 82 orang warga kerja eksekutif dan 55 orang warga kerja bukan eksekutif di Ibu Pejabat dan di Pejabat-pejabat Kawasan di seluruh Semenanjung dan Sabah. Ini diikuti oleh Jabatan Perkhidmatan Korporat (52 warga kerja), Jabatan Operasi Industri (37 warga kerja), dan Jabatan Kawal Selia Keselamatan (33 warga kerja) yang beroperasi sepenuhnya dari Ibu Pejabat.

As compliance investigation and enforcement is one of the Commission's functions which requires field assignments, the Enforcement and Regional Operations Department consists of the largest workforce of 137 employees, comprising 82 executives and 55 non-executives at the Head Office and Regional Offices throughout the Peninsula and Sabah. This is followed by the Corporate Services Department (52 employees), the Industry Operations Department (37 employees), and the Safety Regulation Department (33 employees) that operate entirely from the Head Office.

Komposisi Warga Kerja mengikut Jabatan
Composition of Employees by Department



Komposisi Warga Kerja mengikut Lokasi
Composition of Employees by Location



Kapasiti tenaga kerja pada 2020 berada pada tahap 99% pengisian daripada jumlah perjawatan yang diluluskan iaitu sebanyak 360 jawatan.

Penambahan bilangan warga kerja ST saban tahun jelas menggambarkan komitmen ST dalam mengoptimumkan tenaga kerjanya.

Dalam usaha untuk mengekalkan tenaga kerja tersebut, adalah menjadi tanggungjawab ST untuk menyediakan persekitaran kerja yang kondusif dan selamat agar seluruh warga kerja menjadi lebih bermotivasi untuk meningkatkan kecekapan dan kualiti perkhidmatan, setanding dengan badan kawal selia di peringkat dunia.

In terms of capacity, 99% of the 360 positions approved have been filled in 2020.

The increase in the number of employees each year clearly reflects the Commission's commitment in optimising its workforce.

To retain its workforce, it is the Commission's responsibility to provide a conducive and safe work environment for employees to improve the efficiency and quality of services, on par with regulatory bodies around the world.

PEMBANGUNAN KEUPAYAAN WARGA KERJA
EMPLOYEE CAPABILITY DEVELOPMENT

Warga kerja yang berkepakaran tinggi, bermotivasi dan komited terhadap tugas dan tanggungjawab merupakan aset terpenting untuk memastikan ST berupaya melaksanakan fungsi dan peranannya berdasarkan kepada mandat yang ditetapkan. Oleh itu, fokus pembangunan keupayaan adalah memastikan warga kerja dilengkapi dengan pengetahuan, kemahiran, kompetensi dan tingkah laku yang tepat dalam memenuhi keperluan tersebut.

Penularan pandemik Covid-19 pada 2020 telah memberikan peluang untuk ST meneroka pelaksanaan program-program latihan dan pembangunan secara dalam talian. Pada 2020, sebahagian dari program latihan telah mula dilaksanakan adalah secara dalam talian bagi mematuhi Prosedur Operasi Standard (SOP), manakala program selebihnya dilaksanakan secara pembelajaran bilik darjah *(classroom training)*, sebelum Perintah Kawalan Pergerakan (PKP) dikuatkuasakan dan juga semasa Perintah Kawalan Pergerakan Pemulihan (PKPP) dilaksanakan.

A highly skilled, motivated and committed workforce is important to ensure that the Commission is able to perform its mandated functions and roles. Therefore, capability building focuses on empowering employees with the right knowledge, skills, competencies and behaviours to meet those needs.

The outbreak of the Covid-19 pandemic in 2020 provided an opportunity for the Commission to explore the implementation of online training and development programmes. In 2020, several training programmes were conducted online to comply with Standard Operating Procedures (SOP), while the remaining programmes were conducted through classroom training, before the Movement Control Order (MCO) was enforced and also during the Recovery Movement Control Order (RMCO).

Modul Latihan / *Mode of Training*	**Jumlah /** *Total*
Bilik Darjah / *Classroom*	**52**
Dalam Talian / *Online*	**70**

Usaha-usaha peningkatan pengetahunan dan kompetensi warga kerja dilaksanakan melalui program-program latihan berasaskan kerangka kompetensi fungsi, tingkah laku dan juga kepimpinan untuk semua peringkat warga kerja. Sebanyak 122 program latihan telah dilaksanakan di sepanjang 2020.

Training programmes to enhance the knowledge and competencies of employees were conducted based on functional, behavioural and leadership competency frameworks across all levels of the workforce. A total of 122 training programmes were implemented throughout 2020.

Kompetensi / *Competency*	**Jumlah Latihan /** *Total Trainings*
Kepimpinan / *Leadership*	**24**
Komunikasi / *Communication*	**9**
Pengurusan dan Penambahbaikan Kaedah Operasi / *Operating Methods Management and Improvement*	**27**
Pengurusan Piagam Pelanggan / *Client Charter Management*	**1**
Strategi dan Pengurusan Jabatan / *Department Strategy and Management*	**1**
Operasi Sistem / *System Operation*	**2**
Kecekapan Tenaga dan Pemuliharaan / *Energy Efficiency and Conservation*	**3**
Penyiasatan / *Field Investigation*	**2**
Kemahiran Kewangan dan Eknonomi / *Financial and Economic Acumen*	**5**
Pembangunan Industri / *Industry Development*	**5**
Advokasi Keselamatan Industri / *Industry Safety Advocacy*	**4**
Pengurusan Harga dan Tarif / *Pricing and Tariff Management*	**2**
Pembangunan Kerangka Peraturan dan Dasar / *Regulatory Framework and Policy Development*	**19**
Penilaian dan Mitigasi Risiko / *Risk Assessment and Mitigation*	**2**
Penglibatan dan Komunikasi Pemegang Taruh / *Stakeholder Engagement and Communication*	**1**
Kapasiti Strategik dan Perancangan Rangkaian / *Strategic Capacity and Network Planning*	**2**
Tingkah Laku / *Behavioural*	**11**
Kepakaran Sumber Manusia / *Human Resource Expertise*	**2**
JUMLAH / *TOTAL*	**122**

ST maklum bahawa pengetahuan dan kemahiran dalam pemakaian dan penguatkuasaan undang-undang merupakan asas penting untuk keupayaan warga kerja dalam bidang pengawalseliaan. Oleh itu, program pembangunan kompetensi kepimpinan telah dipergiatkan lagi untuk semua peringkat di mana sebanyak 24 program latihan kepimpinan berasaskan *Lead Self, Lead Others* dan *Lead Organisation seperti Leading with Emotional Intelligence, Effective Communication, Mentoring and Coaching* dan juga kursus *Oxford Executive Leadership Program* telah dihadiri oleh warga kerja, di peringkat Pengurusan Tertinggi dan Pertengahan.

Application of law and enforcement are important skills in the field of regulation. Therefore, leadership competency development programmes was further intensified by the Commission to enhance employees' capabilities in this area. A total of 24 leadership training programmes based on the principles of Lead Self, Lead Others and Lead Organisation were conducted. This was inclusive of courses such as Leading with Emotional Intelligence, Effective Communication, Mentoring and Coaching as well as the Oxford Executive Leadership Programme, attended by employees in Senior and Middle Management positions.

Pembangunan kemahiran diri *(Personal Effectiveness)* merupakan program bagi meningkatkan kemahiran warga kerja dalam melaksanakan tugas dengan lebih efisyen dan berkualiti. Sebanyak 48 program latihan kemahiran diri seperti *MS Excel* dan *MS PowerPoint, English for Workplace, Customers Service Excellence, Quality Management (ISO 9001), Analytical and Critical Thinking* dan lain-lain telah dihadiri oleh warga kerja di semua peringkat.

Sebagai sebuah organisasi yang berasaskan pengetahuan *(knowledge-based)*, ST juga menyediakan platform dan persekitaran yang baik untuk menggalakkan pembelajaran berterusan di kalangan warga kerja, dengan meneruskan lagi penawaran skim pembiayaan biasiswa ST melalui program-program pengajian Sarjana secara separuh masa di universiti-universiti tempatan. Pada 2020, seramai lima (5) lagi warga kerja eksekutif telah menerima pembiayaan biasiswa ST untuk mengikuti pelbagai bidang pengajian yang bersesuaian dengan fungsi dan tanggungjawab mereka di ST.

The Personal Effectiveness programme aims to improve the skills of employees and enable them to perform tasks more efficiently. A total of 48 personal skills training on MS Excel and MS PowerPoint, English for Workplace, Customers Service Excellence, Quality Management (ISO 9001), Analytical and Critical Thinking and others were attended by employees of all levels.

As a knowledge-based organisation, the Commission also promotes a conducive environment for continuous learning among its employees by offering scholarship funding schemes for part-time Masters programmes at local universities. In 2020, a total of five (5) executive employees have received scholarship funding to pursue various fields of study related to their functions and responsibilities at the Commission.

Program Pengajian / *Study Programme*	**Bilangan Warga Kerja /** *Number of Employees*
Sarjana Pentadbiran Perniagaan / *Master in Business Administration*	**2**
Sarjana Kejuruteraan (Kuasa) / *Master in Engineering (Power)*	**2**
Sarjana Sains (Professional) / *Master in Science (Professional)*	**2**
Sarjana Pengurusan Tenaga / *Master in Energy Management*	**6**
Sarjana Pengurusan Risiko Keselamatan dan Kesihatan Pekerjaan / *Master in Occupational Safety & Health Risk Management)*	**1**

Hasil pelaksanaan program-program pembangunan keupayaan warga kerja yang berterusan, ST telah berjaya mencapai sasaran untuk mempunyai warga kerja eksekutif yang berkompetensi tinggi iaitu sekurang-kurangnya berada di tahap kompetensi *Intermediate*. Seramai dua per tiga dari keseluruhan warga kerja eksekutif yang telah dinilai pada 2020, telah mencapai kompetensi fungsi di tahap *Intermediate* atau *Advance*, dan sebanyak 93% warga kerja tersebut juga mempunyai kompetensi tingkah laku di tahap *Moderate* atau *Strong*.

Secara keseluruhannya, bagi 2020, ST telah memperuntukkan dan membelanjakan jumlah yang signifikan bagi pelaksanaan program-program pembangunan keupayaan warga kerja, dalam memastikan segala mandat yang ditetapkan kepada ST dapat dilaksanakan oleh warga kerja yang kompetensi tinggi.

Through these capability building programmes, the Commission now consists of executive employees with Intermediate competency level and above. About two thirds of the executive employees who were assessed in 2020 have functional competencies at the Intermediate or Advance level, and 93% of employees possess Moderate to Strong levels of behavioural competency.

Overall, in 2020, the Commission allocated a significant amount for capability development to ensure that the responsibilities of the Commission can be carried out by a highly competent workforce.

PEMBANGUNAN KERJAYA WARGA KERJA
EMPLOYEE CAREER DEVELOPMENT

ST sentiasa komited dalam memastikan pembangunan kerjaya setiap warga kerja adalah selaras dengan keperluan semasa organisasi terutamanya dalam bidang ekonomi, industri pasaran tenaga, dan kejuruteraan elektrik dan gas berpaip.

Bilangan kepakaran tenaga kerja ST pada 2020 kekal sebanyak 10% dengan pelantikan tujuh (7) pakar teknikal bagi menyumbang kepakaran dan pengetahuan industri tenaga kepada warga kerja ST.

Proses kenaikan gred telah dilaksanakan sebanyak dua (2) kali pada 2020, melibatkan 22 orang warga kerja yang berkelayakan. Mekanisme kenaikan gred untuk warga kerja di Gred E4 ke Gred E3 juga diperluaskan di mana keutamaan adalah diberikan kepada warga kerja yang telah berada di Gred E4 selama sekurang-kurangnya sepuluh (10) tahun.

The Commission remains committed to ensuring that the career development of each employee is in line with the current needs of the organisation especially in the fields of economics, energy market industry, and electrical and piped gas engineering.

The number of professional experts employed in 2020 remains at 10% with the appointment of seven (7) technical experts to contribute their expertise and knowledge in the energy industry to the Commission's workforce.

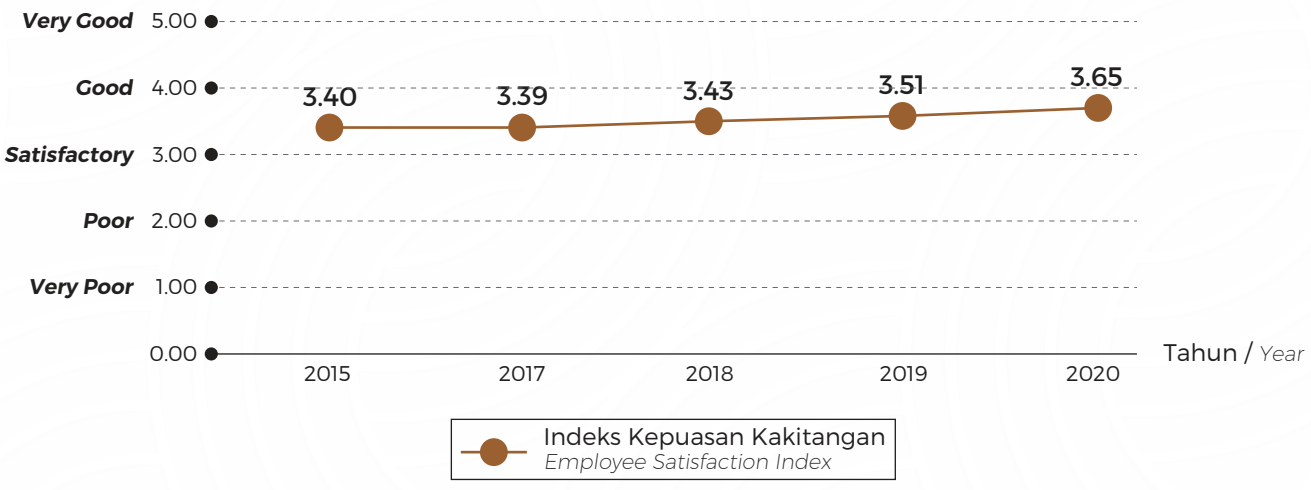
The grade promotion process has been implemented twice in 2020 involving 22 qualified employees. The grade promotion mechanism for employees in Grade E4 to Grade E3 was also expanded with priority given to employees who have been in Grade E4 for at least ten (10) years.

INDEKS KEPUASAN KAKITANGAN ST
THE COMMISSION EMPLOYEE SATISFACTION INDEX

Pada September 2020, ST telah menjalankan Kajian Soal Selidik Peranan, Persekitaran dan Pembangunan (Kajian 3P) Kakitangan untuk mengukur Indeks Kepuasan Kakitangan ST. Hasil kajian mendapati skor purata Indeks Kepuasan Kakitangan ST pada 2020 telah meningkat sebanyak 0.11% daripada 3.54% pada 2019, melonjakkan skor kepada 3.65% pada 2020. Selain itu, hasil penilaian Kompetensi Kakitangan Eksekutif adalah di tahap 69% iaitu pada tahap *Intermediate* dan ke atas.

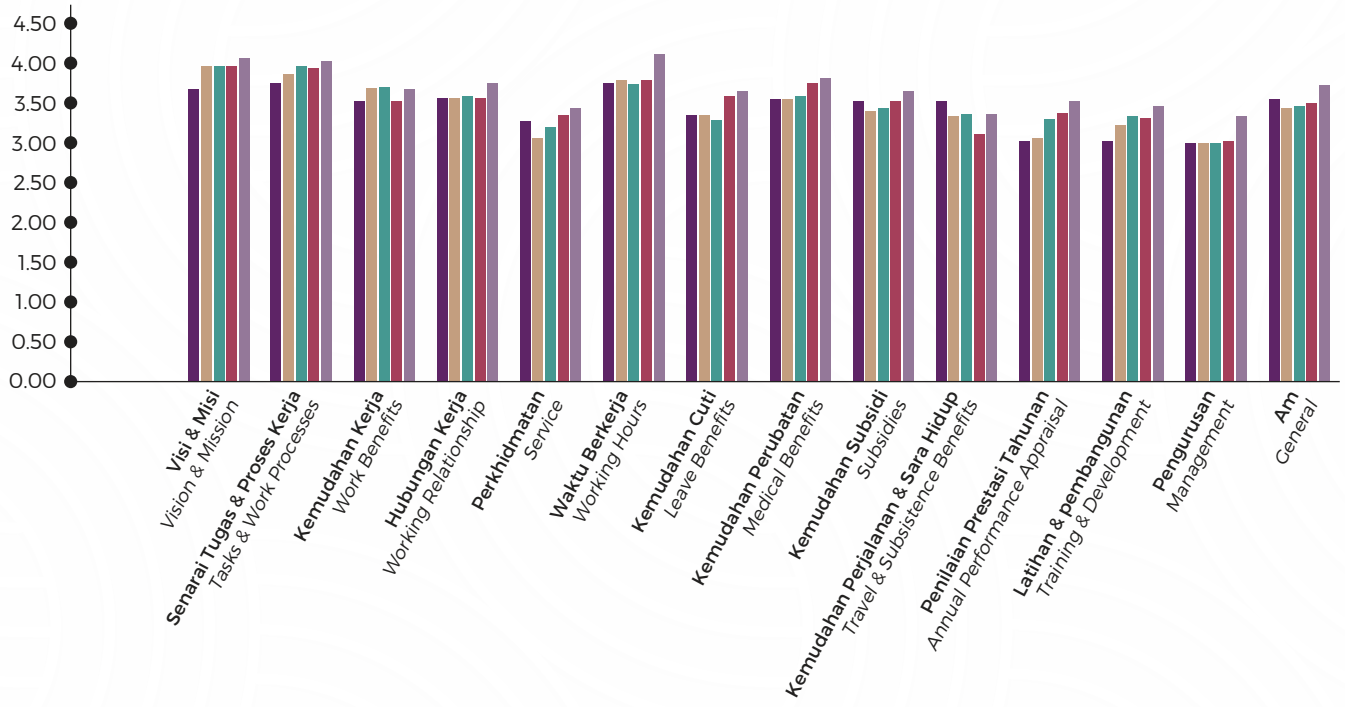
In September 2020, the Commission conducted the Peranan, Persekitaran and Pembangunan (3P Study) Questionnaire Survey to measure the Employee Satisfaction Index. The results of the study found that the average score of the Employee Satisfaction Index in 2020 increased by 0.11% from 3.54% in 2019 to 3.65% in 2020. In addition, based on an assessment conducted, Executive Employee Competency stood at 69%, which is at the Intermediate level and above.

Skor Purata Indeks Kepuasan Kakitangan, 2015 - 2020
Average Score of the Employee Satisfaction Index, 2015 – 2020



Purata Keseluruhan Kajian 3P mengikut Kategori, 2015 - 2020
Overall Average of the 3P Study by Category, 2015 – 2020

	Visi & Misi	Senarai Tugas & Proses Kerja	Kemudahan Kerja	Hubungan Kerja	Perkhidmatan	Waktu Berkerja	Kemudahan Cuti	Kemudahan Perubatan	Kemudahan Subsidi	Kemudahan Perjalanan & Sara Hidup	Penilaian Prestasi Tahunan	Latihan & pembangunan	Pengurusan	Am
2015	3.69	3.76	3.54	3.57	3.25	3.78	3.36	3.57	3.53	3.53	3.01	3.02	2.99	3.56
2017	3.97	3.88	3.70	3.57	3.06	3.80	3.35	3.55	3.40	3.31	3.05	3.23	2.99	3.45
2018	3.97	3.96	3.71	3.60	3.20	3.75	3.28	3.60	3.43	3.36	3.29	3.31	3.00	3.48
2019	3.98	3.95	3.51	3.57	3.35	3.79	3.58	3.76	3.52	3.13	3.38	3.32	3.01	3.50
2020	4.07	4.02	3.67	3.77	3.45	4.13	3.66	3.82	3.66	3.34	3.52	3.48	3.34	3.73



INISIATIF PENAMBAHBAIKAN PENYAMPAIAN PERKHIDMATAN
SERVICE DELIVERY IMPROVEMENT INITIATIVES

PENAMBAHBAIKAN SISTEM DALAM TALIAN

Selaras dengan arus digitalisasi yang berkembang pesat, ST juga tidak ketinggalan untuk meningkatkan prestasi penyampaian perkhidmatan yang disediakan.

Melalui inisiatif ini, tumpuan adalah diberikan bagi memastikan proses kerja dapat dilaksanakan secara automasi secara dalam talian, pada bila-bila masa dan dari mana-mana lokasi, untuk memberi perkhidmatan yang cekap dan cepat kepada warga kerja dan pemegang taruh ST.

IMPROVEMENT OF ONLINE SYSTEMS

In an era of digitalisation, the Commission is actively working to improve the performance of the service delivery provided.

The objective of this initiative is to ensure that work processes can be automated online, at any time and from any location, to provide efficient and fast services to the staff as well as stakeholders of the Commission.

Sistem dalam talian yang telah dibangunkan serta ditambahbaik pada 2020 adalah:

- Aplikasi *Teamwork Project*
- Aplikasi *Simple KPI*
- Aplikasi Mudah Alih Aduan ST
- Integrasi Sistem e-Kelengkapan (ST) dan *SIRIM Certification and Inspection System* (SCIS SIRIM)
- Penambahbaikan Sistem ECOS
- Penambahbaikan Sistem e-Gas (OAS)

Selain itu, ST juga telah memperoleh Persijilan Semula MS ISO IEC 27001: 2013 Sistem Pengurusan Keselamatan Maklumat (ISMS) untuk kali ketiga di bawah Standard *ISO / IEC 27001: 2013 Information Security Management Systems* bagi tempoh tiga (3) tahun mulai 23 Disember 2020 hingga 22 Disember 2023 dari *SIRIM QAS International* Sdn. Bhd di mana aktiviti pengauditan semula juga telah dilaksanakan di Ibu Pejabat ST pada 26 dan 27 November 2020.

Online systems that were developed and improved in 2020 included:

- *Teamwork Project Application*
- *Simple KPI Application*
- *ST Complaints Mobile Application*
- *E-Kelengkapan System (ST) and SIRIM Certification and Inspection System (SCIS SIRIM) Integration*
- *ECOS System Improvements*
- *E-Gas System (OAS) Improvements*

The Commission also obtained the Information Security Management Systems Recertification for the third time from SIRIM QAS International Sdn. Bhd. based on the ISO / IEC 27001: 2013 standard. This certification is valid for a period of three (3) years, from 23 December 2020 to 22 December 2023.
A re-audit activity was also carried out at the Head Office on 26 and 27 November 2020.

PEMBANGUNAN PELAN ANTI RASUAH ORGANISASI (OACP) SURUHANJAYA TENAGA

DEVELOPMENT OF THE COMMISSION'S ORGANISATIONAL ANTI-CORRUPTION PLAN (OACP)

Pada September 2019, ST menambahbaik fungsi Audit Dalaman dengan mewujudkan penjawatan khusus untuk fungsi integriti, selaras dengan usaha Kerajaan melalui Kementerian masing-masing, bagi mengelola dan memantau perkara-perkara berkaitan integriti dan tadbir urus yang baik, sekaligus meningkatkan ketelusan dan kecekapan dalam melaksanakan aktiviti pengawalseliaan di ST.

Selaras dengan itu, Pelan Anti Rasuah Organisasi (OACP) 2020-2024 ST telah dibangunkan untuk mengenalpasti risiko-risiko sedia ada yang berkemungkinan untuk berlaku, di mana ST turut menggariskan inisiatif-inisiatif yang berkaitan untuk dilaksanakan.

Pelan ini akan diterbitkan pada 2021 dan akan digunapakai bagi membendung dan menangani isu-isu integriti, tadbir urus dan rasuah di ST.

In September 2019, the Commission improved its Internal Audit function by establishing a new Integrity function. This initiative aims to increase transparency and efficiency in regulatory activities carried out by the Commission, in line with the Government's efforts, via respective Ministries, to manage and monitor matters related to integrity and good governance.

Pursuant to this, the Commission developed its Organisational Anti-Corruption Plan (OACP) 2020-2024 as a framework to identify existing risks within the organisation and outline relevant initiatives to be executed.

The plan will be published and adopted in 2021 to mitigate and address issues of integrity, governance and corruption in the Commission.

PROGRAM *COFFEE WITH CEO AND COO*
THE COFFEE WITH CEO AND COO PROGRAMME

Lanjutan maklumbalas warga kerja dalam MBJ 2019, program *Coffee with CEO* telah diadakan bertujuan memberi peluang kepada segenap lapisan warga kerja untuk berinteraksi secara terus dengan KPE dalam suasana santai untuk merapatkan jurang bersama warga kerja di samping memupuk rasa setia terhadap ST.

Program selama satu jam setengah ini menyediakan platform interaksi untuk pengalaman kerja dengan lebih mendalam dan memahami aspirasi KPE.

Inisiatif interaksi dua hala di antara warga kerja dengan Pengurusan Tertinggi dan juga untuk pihak Pengurusan mendengar dan memahami sebarang cadangan atau masalah dari warga kerja.

Susulan daripada sesi pertama pada 28 Januari 2020 bersama KPE, KPO juga turut mengendalikan sesi yang sama secara berasingan agar sesi pertemuan dapat diadakan dengan lebih kerap. Di setiap sesi, KPE dan KPO sentiasa mengingatkan peserta mengenai misi dan visi ST serta keperluan *#TeamST* iaitu semangat kerja berpasukan dalam organisasi.

Selain itu, KPE dan KPO turut berkongsi perancangan semasa dan masa hadapan ST agar warga kerja dapat lebih memahami dan bersedia untuk menyahut dan menerima sebarang perubahan dan penambahbaikan organisasi. KPE dan KPO juga mengambil maklum isu dan cadangan yang disampaikan oleh peserta untuk penambahbaikan ST dari semasa ke semasa.

Seramai 83 warga kerja ST telah menghadiri sembilan (9) sesi yang telah diadakan sepanjang 2020.

Following the feedback received from employees during MBJ 2019, the Coffee with CEO programme was held to provide an opportunity for employees to interact directly with the CEO in a relaxed atmosphere to bridge the gap between employees and cultivate a culture of loyalty within the Commission.

The one-and-a-half-hour programme provided a platform for employees to immerse in their work experience and understand the aspirations of the CEO.

The two-way interaction initiative between employees and Senior Management also served as a platform for the Management team to listen and understand suggestions or problems raised by employees.

Following the first session on 28 January 2020 with the CEO, the COO also conducted a similar session separately. This is to ensure that this programme can be held more frequently. At each session, the CEO and COO reminded the participants about the mission and vision of the Commission as well as the importance of #TeamST and the spirit of teamwork in the organisation.

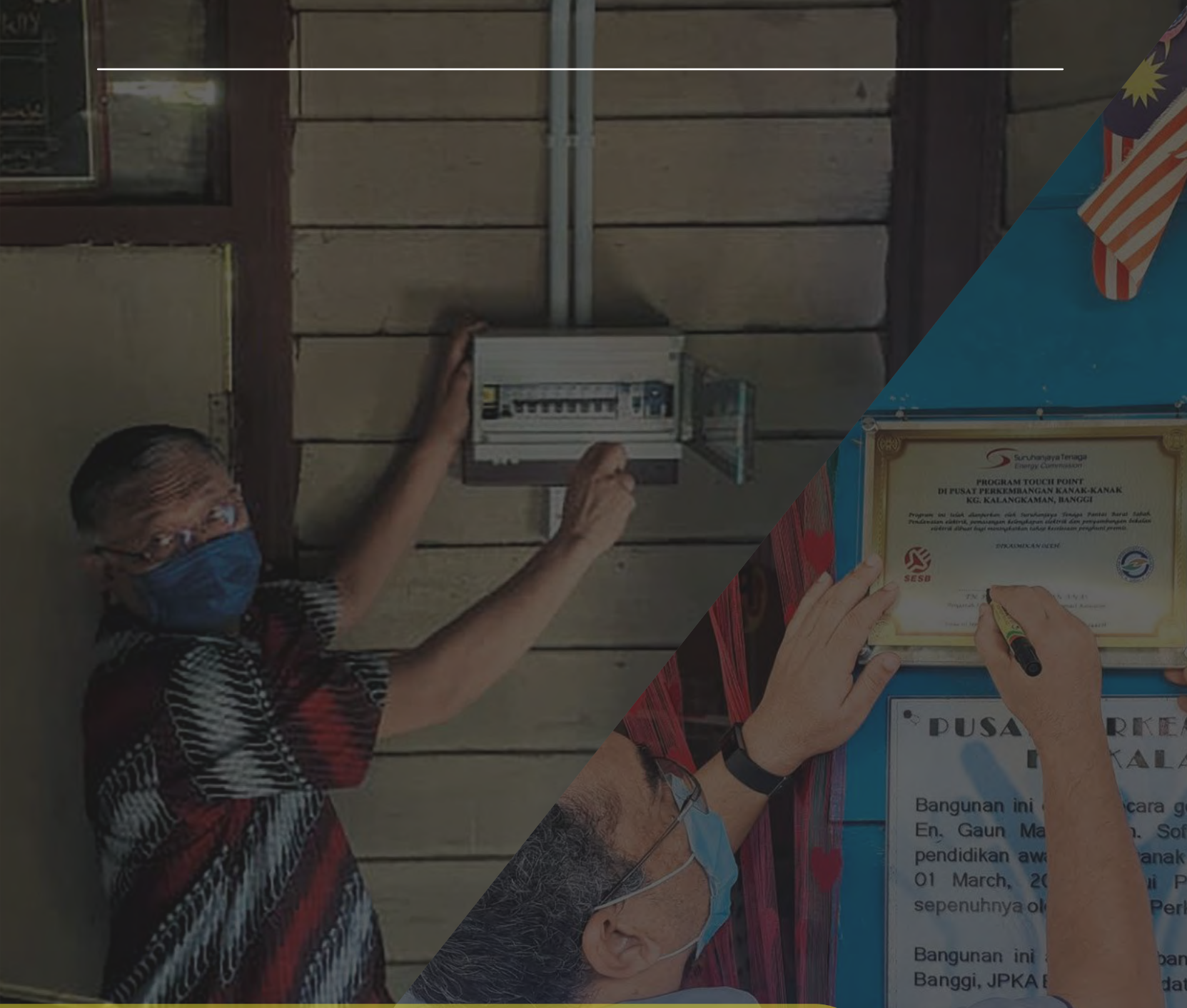
In addition, the CEO and COO shared the Commission's current and future plans to enhance readiness of employees to respond and accept any changes within the organisation. The CEO and COO also took note of the issues and suggestions submitted by the participants for the betterment of the Commission moving forward.

A total of 83 employees attended nine (9) sessions held throughout 2020.

LEGAL AWARENESS PROGRAMME

Bermula 2020, program *ST Legal Awareness* telah diperkenalkan kepada semua warga kerja eksekutif ST untuk dihadiri secara berperingkat. Program ini bertujuan mengukuhkan pengetahuan dan kepakaran pegawai-pegawai ST dalam bidang perundangan khusus di bawah fungsi ST, merangkumi aspek perundangan khusus serta kes-kes dan senario yang sebenar *(real case-study)*. Program pembelajaran ini telah dikendalikan oleh pakar teknikal undang-undang yang telah dilantik oleh ST.

At the beginning of 2020, the ST Legal Awareness programme was introduced in stages to all executive employees of the Commission. This programme aims to strengthen the knowledge and expertise of officers in legal matters under the Commission's functions, covering specific legal aspects as well as analysis of case studies. This programme was conducted by a legal technical expert appointed by the Commission.



PENINGKATAN USAHA OUTREACH
ENHANCING OUTREACH INITIATIVES

KEMPEN #JADILAH BIJAK TENAGA
#BE ENERGY SMART CAMPAIGN

Sepanjang 2020, ST berkongsi tips keselamatan elektrik dan penggunaan tenaga yang cekap melalui 198 spot promosi kempen JADILAH BIJAK TENAGA di saluran radio tempatan iaitu Hot FM, BERNAMA Radio, Suria FM, BFM, KLfm, Traxx FM, Minnal FM dan Ai FM. Klip iklan tersebut menyentuh mengenai topik-topik:

- Tips Menghadapi Banjir
- Pemanas Air
- Pengecas Telefon Bimbit
- Satu Soket, Satu Plug
- Cekap Tenaga, Kurang Bayar
- Kabel yang mengikut Standard Keselamatan

Di musim PKP ini, pengguna dinasihatkan agar tidak menggunakan kelengkapan elektrik tanpa berhenti untuk mengelakkan kelengkapan tersebut menjadi terlalu panas sehingga mengundang kebakaran. Kelengkapan elektrik yang rosak atau cacat seharusnya tidak digunakan sama sekali, dan jangan bebankan soket elektrik dengan pelbagai kelengkapan elektrik berkuasa tinggi pada satu masa.

Selain itu, ST turut bekerjasama dengan Hot FM dengan menerbitkan video yang membawa mesej yang sama, tetapi dalam situasi yang lebih santai dan menghiburkan. Video yang dilakonkan oleh dua (2) penyampai terkenal Hot FM ini turut disiarkan di laman media sosial saluran radio itu, membolehkan mesej keselamatan dan kecekapan tenaga ini turut disampaikan kepada jutaan warga maya.

Selain itu, ST turut menggunakan medium *billboard* bagi menyampaikan mesej JADILAH BIJAK TENAGA kepada lebih ramai pengguna. Dua (2) lokasi telah dipilih iaitu *billboard* di KM 24.4 Jalan Duta – Damansara/Sg. Buluh, NKVE dan juga di KM 25.10 Lebuhraya Kuala Lumpur-Putrajaya (MEX).

Melalui kempen ini juga, ST telah menggunapakai perkhidmatan *Geofence Technology*, di mana pengguna kedua-dua lebuhraya ini akan menerima iklan kempen yang sama di telefon bimbit masing-masing apabila melintasi *billboard* tersebut.

The BE ENERGY SMART campaign is an initiative by the Commission to raise public awareness on electrical safety and the efficient use of energy. In 2020, a total of 198 advertisements were aired on local radio channels namely Hot FM, BERNAMA Radio, Suria FM, BFM, KLfm, Traxx FM, Minnal FM and Ai FM. The advertisements highlighted the following topics:

- *Tips on Managing Floods*
- *Water Heaters*
- *Mobile Phone Chargers*
- *One Socket, One Plug*
- *Energy Efficient, Cost Efficient*
- *Cables Compliant with Safety Standards*

During the MCO, consumers were advised to use electrical equipment moderately to prevent the equipment from overheating in order to reduce the risk of fire hazards. Consumers were also advised against using damaged or defective electrical equipment and overloading electrical sockets with multiple high-powered electrical equipment at a time.

In addition, the Commission collaborated with Hot FM to produce videos on the radio station's social media platform. With the help of two (2) of Hot FM's presenters who were featured in these videos, the importance of electrical safety and energy efficiency was relayed in a relaxed and entertaining manner to millions of Malaysians online.

The Commission also promoted the BE ENERGY SMART campaign through billboard advertisements that were set up at two (2) locations namely KM 24.4 Jalan Duta - Damansara/Sg. Buluh, NKVE and KM 25.10 Kuala Lumpur-Putrajaya Highway (MEX).

Geofence Technology was adopted as part of the marketing strategy for this campaign, whereby smartphone users will automatically receive the same advertisement on their mobile devices when passing by the billboards at the aforementioned locations.

PROGRAM *TOUCHPOINT*
TOUCHPOINT PROGRAMME

Sebagai sebahagian daripada inisiatif Tanggungjawab Sosial Korporat (CSR) yang telah diperkenalkan oleh ST dalam usaha meningkatkan kesedaran orang awam terhadap kepentingan penggunaan tenaga elektrik dengan selamat, sebanyak 16 program *Touchpoint* telah dijayakan pada 2020 di Pejabat-pejabat Kawasan ST.

The Commission introduced the Touchpoint programme as a Corporate Social Responsibility (CSR) initiative to raise public awareness on the importance of electrical safety. In 2020, a total of 16 Touchpoint programmes were successfully completed at the Commission's Regional Offices.

Senarai Program *Touchpoint* yang Dilaksanakan, 2020
List of Touchpoint Programmes Implemented, 2020

	Lokasi Program Touchpoint / *Touchpoint Programme Location*	**Kerja-kerja yang Dijalankan /** *Work Carried Out*
1	Pusat Jagaan Mahmudah Malaysia, Semenyih, Selangor *Mahmudah Malaysia Care Center, Semenyih, Selangor*	Pendawaian baharu, penambahan lampu serta soket alir keluar dan kelengkapan elektrik ditukar kepada kelengkapan elektrik yang jimat tenaga. *Lights, outlet sockets and energy efficient electrical appliances installed, as well as new wiring.*
2	SM Agama Majlis Ulu Cheka, Jerantut, Pahang	Pendawaian baharu, pembaikan pendawaian dan penambahan kipas serta lampu. *Wiring upgraded and repaired, fans and lights installed.*
3	Maahad Tahfiz Daril Naim, Kg Kubang Bonggor, Melor, Kota Bharu, Kelantan	Pendawaian baharu dan penambahan soket alir keluar. *Outlet sockets installed as well as new wiring.*

	Lokasi Program Touchpoint / *Touchpoint Programme Location*	Kerja-kerja yang Dijalankan / *Work Carried Out*
4	Surau Madrasah Nurul Iman, Bahau, Negeri Sembilan	Menaiktaraf papan agihan, menambah soket alir keluar dan *point* pendingin hawa serta menggantikan kelengkapan elektrik yang uzur. *Distribution boards upgraded, outlet sockets and air conditioning points installed, and obsolete electrical equipment replaced.*
5	Pusat Pembangunan Kanak-Kanak Kg. Hobut, Matunggong, Kudat, Sabah *Kg. Hobut Child Development Centre, Matunggong, Kudat, Sabah*	Menambah baik sistem pendawaian elektrik dan penggantian kelengkapan elektrik yang uzur. *Electrical wiring systems upgraded and obsolete electrical equipment replaced.*
6	Pusat Pembangunan Kanak-Kanak Kg. Kalang Kaman, Pulau Banggi, Kudat, Sabah *Kg. Kalang Kaman Child Development Centre, Banggi Island, Kudat, Sabah*	Menyediakan pendawaian baharu dan membantu dalam permohonan mendapatkan bekalan elektrik. *Wiring upgraded and assistance in applying for electricity supply provided.*
7	Empat (4) buah rumah yang didiami orang kurang berkemampuan di daerah Beruas, Perak *Four (4) houses inhabited by less fortunate people in the Beruas District, Perak*	Pembaikan sistem pendawaian. *Wiring systems repaired and maintained.*
8	Madrasah Ad-Diniah Ar-Rahmaniah, Tawau, Sabah	Pembaikan sistem pendawaian di bangunan-bangunan yang sedia ada dan pembelian serta pemasangan kelengkapan elektrik seperti lampu dan kipas yang cekap tenaga. *Wiring systems in existing buildings repaired, and electrical appliances such as energy efficient lights and fans were purchased and installed.*
9	13 buah rumah kampung di daerah Batu Pahat, Johor *13 village houses in Batu Pahat District, Johor*	Penggantian RCD kendalian voltan kepada RCD kendalian arus serta kerja-kerja pembaikan sistem pendawaian. *Wiring systems repaired while voltage operated RCD was replaced with current operated RCD.*
10	Rumah Sejahtera Lelaki di Batu Bertangkup, Chuping, Perlis *Rumah Sejahtera Lelaki in Batu Bertangkup, Chuping, Perlis*	Menaiktaraf papan agihan bekalan dan membaiki sistem pendawaian. *Supply distribution boards upgraded and wiring systems repaired.*
11	Rumah Sejahtera Perempuan di Bohor Mali, Kangar, Perlis *Rumah Sejahtera Perempuan in Bohor Mali, Kangar, Perlis*	Menaiktaraf papan agihan bekalan dan membaiki sistem pendawaian. *Supply distribution boards upgraded and wiring systems repaired.*
12	Maahad Tahfiz Al-Raudhah, Utan Aji, Perlis	Menaiktaraf papan agihan bekalan dan membaiki sistem pendawaian. *Supply distribution boards upgraded and wiring systems repaired.*
13	21 buah rumah kampung di Rancangan Sungai Manila, Sandakan, Sabah *21 village houses in the Manila River Plan, Sandakan, Sabah*	Pembaikan sistem pendawaian elektrik di rumah. *Electrical wiring systems repaired.*
14	36 buah rumah asnaf di Sipitang, Sabah *36 asnaf houses in Sipitang, Sabah*	Pembaikan sistem pendawaian elektrik di rumah. *Electrical wiring systems repaired.*
15	27 buah rumah asnaf di Ranau, Sabah *27 asnaf houses in Ranau, Sabah*	Pembaikan sistem pendawaian elektrik di rumah. *Electrical wiring systems repaired.*
16	Lapan (8) buah rumah asnaf di Lenggong, Perak *Eight (8) asnaf houses in Lenggong, Perak*	Membantu mendapatkan bekalan elektrik dari utiliti dan pembaikan sistem pendawaian elektrik sedia ada di rumah. *Electrical wiring systems repaired and assistance in obtaining electricity supply given.*

SUMBANGAN ST DALAM MENCEGAH PENULARAN PANDEMIK COVID-19
THE COMMISSION'S CONTRIBUTION TO COVID-19 PREVENTION

Ketika negara sedang berdepan dengan situasi kekurangan alat-alat kelengkapan perubatan, sebagai inisiatif keprihatinan bagi menyokong usaha-usaha menangani penularan pandemik Covid-19, ST telah menyumbang sejumlah RM48,000.00 kepada tabung-tabung amanah Sumbangan Perubatan Kementerian Kesihatan Malaysia (KKM) dan *Mercy Mission Malaysia*.

Sumbangan adalah bertujuan membantu pembelian alat-alat kelengkapan perubatan, keperluan ubat-ubatan, *reagen*, bahan pakai buang, alat intubasi, mesin bantuan pernafasan, sut perlindungan *powered, air-purifying respirator* (PAPR), mesin *ultrasound* serta katil pesakit.

Selain sumbangan korporat, warga kerja ST juga turut membuat sumbangan peribadi kepada tabung-tabung amanah pilihan untuk membantu usaha-usaha penyediaan kelengkapan perubatan dan meringankan beban ahli keluarga individu yang terjejas oleh pandemik tersebut.

Inisiatif ini adalah diharapkan dapat menampung keperluan Kerajaan khususnya KKM untuk kegunaan petugas barisan hadapan dalam menangani pandemik Covid-19 serta sebagai tanda sokongan dan penghargaan ST terhadap barisan hadapan dan rakyat secara amnya.

Pada 7 April 2020, *Mercy Mission Malaysia* telah membuat penghantaran pertama peralatan perubatan hasil sumbangan ST iaitu lima (5) buah katil kanak-kanak dan tiga (3) buah troli ke Hospital Shah Alam, dan penghantaran keperluan lain menyusul selepas itu.

The Commission donated RM48,000.00 to the Ministry of Health Malaysia (MOH) and Mercy Mission Malaysia's medical contribution trust funds as part of its initiative to reduce the shortage of medical equipment faced by the country during the Covid-19 pandemic.

The donation covers the purchase of medical equipment, medications, reagen, disposable materials, intubation equipment, ventilators, powered protective suits, air-purifying respirators (PAPR), ultrasound machines and patient beds.

In addition, the Commission's employees made personal contributions to selected trust funds to assist in providing medical equipment and alleviate the burden on families affected by the pandemic.

This initiative aims to relieve the increasing demand for medical equipment by the Government, particularly MOH, for frontliners to use during the Covid-19 pandemic. It also served as a display of the Commission's support and appreciation to frontliners and the public.

On 7 April 2020, Mercy Mission Malaysia delivered the first batch of medical equipment donated by the Commission to Shah Alam Hospital, comprising five (5) children's beds and three (3) trolleys. This was followed by the delivery of other necessities shortly after.

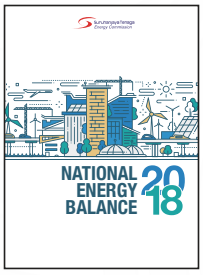
PENERBITAN INDUSTRI TENAGA
ENERGY INDUSTRY PUBLICATIONS

Maklumat sektor tenaga juga disalurkan melalui pelbagai penerbitan merangkumi laporan pencapaian dan pelan pembangunan di ST, sehingga maklumat lanskap industri tenaga tempatan, serantau mahupun global.

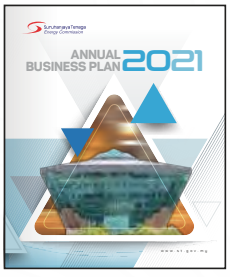
Stakeholders and industry players are kept abreast with the latest developments in the Commission as well as the energy landscape in Malaysia, regionally and abroad through various publications.

Laporan Tahunan 2019 dan Laporan Kumpulan Wang Industri Elektrik 2019
Annual Report 2019 and Electricity Industry Fund Report 2019

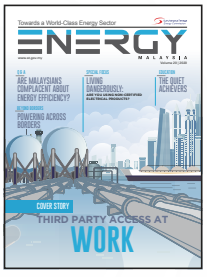
Maklumat dan Statistik Sektor Tenaga
Energy Sector Information and Statistics



2021 Annual Business Plan



Majalah *Energy* Malaysia
Energy Malaysia Magazine



National Building Energy Intensity (BEI) Labelling for Government Buildings

PENYATA KEWANGAN

SIJIL KETUA AUDIT NEGARA
MENGENAI PENYATA KEWANGAN
SURUHANJAYA TENAGA
BAGI TAHUN BERAKHIR 31 DISEMBER 2020

Sijil Mengenai Pengauditan Penyata Kewangan

Pendapat

Saya telah mewakilkan sebuah firma audit swasta untuk mengaudit Penyata Kewangan Suruhanjaya Tenaga. Penyata kewangan tersebut merangkumi Penyata Kedudukan Kewangan pada 31 Disember 2020 Suruhanjaya Tenaga dan Penyata Prestasi Kewangan, Penyata Perubahan Aset Bersih, Penyata Aliran Tunai serta Penyata Prestasi Bajet bagi tahun berakhir pada tarikh tersebut dan nota kepada penyata kewangan termasuklah ringkasan polisi perakaunan yang signifikan seperti yang dinyatakan pada muka surat 1 hingga 32.

Pada pendapat saya, penyata kewangan ini memberikan gambaran yang benar dan saksama mengenai kedudukan kewangan Suruhanjaya Tenaga pada 31 Disember 2020 dan prestasi kewangan serta aliran tunai bagi tahun berakhir pada tarikh tersebut selaras dengan Piawaian Perakaunan Sektor Awam Malaysia (MPSAS) dan keperluan Akta Suruhanjaya Tenaga 2001 (Akta 610) serta Akta Suruhanjaya Tenaga (Pindaan) 2010 (Akta A1371).

Asas Kepada Pendapat

Pengauditan telah dilaksanakan berdasarkan Akta Audit 1957 dan *International Standards of Supreme Audit Institutions*. Tanggungjawab saya dihuraikan selanjutnya di perenggan Tanggungjawab Juruaudit Terhadap Pengauditan Penyata Kewangan dalam sijil ini. Saya percaya bahawa bukti audit yang diperoleh adalah mencukupi dan bersesuaian untuk dijadikan asas kepada pendapat saya.

Kebebasan dan Tanggungjawab Etika Lain

Saya adalah bebas daripada Suruhanjaya Tenaga dan telah memenuhi tanggungjawab etika lain berdasarkan *International Standards of Supreme Audit Institutions*.

Maklumat Lain Selain Daripada Penyata Kewangan dan Sijil Juruaudit Mengenainya

Anggota Suruhanjaya Tenaga bertanggungjawab terhadap maklumat lain dalam Laporan Tahunan. Pendapat saya terhadap Penyata Kewangan Suruhanjaya Tenaga tidak meliputi maklumat lain selain daripada Penyata Kewangan dan Sijil Juruaudit mengenainya dan saya tidak menyatakan sebarang bentuk kesimpulan jaminan mengenainya.

Tanggungjawab Anggota Suruhanjaya Tenaga Terhadap Penyata Kewangan

Anggota Suruhanjaya Tenaga bertanggungjawab terhadap penyediaan Penyata Kewangan Suruhanjaya Tenaga yang memberi gambaran benar dan saksama selaras dengan Piawaian Perakaunan Sektor Awam Malaysia (MPSAS) dan keperluan Akta Suruhanjaya Tenaga 2001 (Akta 610) serta Akta Suruhanjaya Tenaga (Pindaan) 2010 (Akta A1371). Anggota Suruhanjaya Tenaga juga bertanggungjawab terhadap penetapan kawalan dalaman yang perlu bagi membolehkan penyediaan Penyata Kewangan Suruhanjaya Tenaga yang bebas daripada salah nyata yang ketara sama ada disebabkan fraud atau kesilapan.

Semasa penyediaan Penyata Kewangan Suruhanjaya Tenaga, Anggota Suruhanjaya Tenaga bertanggungjawab untuk menilai keupayaan Suruhanjaya Tenaga untuk beroperasi sebagai satu usaha berterusan, mendedahkannya jika berkaitan serta menggunakannya sebagai asas perakaunan.

Tanggungjawab Juruaudit Terhadap Pengauditan Penyata Kewangan

Objektif saya adalah untuk memperoleh keyakinan yang munasabah sama ada Penyata Kewangan Suruhanjaya Tenaga secara keseluruhannya adalah bebas daripada salah nyata yang ketara, sama ada disebabkan fraud atau kesilapan, dan mengeluarkan Sijil Juruaudit yang merangkumi pendapat saya. Jaminan yang munasabah adalah satu tahap jaminan yang tinggi, tetapi bukan satu jaminan bahawa audit yang dijalankan mengikut *International Standards of Supreme Audit Institutions* akan sentiasa mengesan salah nyata yang ketara apabila ia wujud. Salah nyata boleh wujud daripada fraud atau kesilapan dan dianggap ketara sama ada secara individu atau agregat sekiranya boleh dijangkakan dengan munasabah untuk mempengaruhi keputusan ekonomi yang dibuat oleh pengguna berdasarkan penyata kewangan ini.

Sebagai sebahagian daripada pengauditan mengikut *International Standards of Supreme Audit Institutions*, saya menggunakan pertimbangan profesional dan mengekalkan keraguan profesional sepanjang pengauditan. Saya juga:

a. Mengenal pasti dan menilai risiko salah nyata ketara dalam Penyata Kewangan Suruhanjaya Tenaga, sama ada disebabkan fraud atau kesilapan, merangka dan melaksanakan prosedur audit yang responsif terhadap risiko berkenaan serta mendapatkan bukti audit yang mencukupi dan bersesuaian untuk memberikan asas kepada pendapat saya. Risiko untuk tidak mengesan salah nyata ketara akibat daripada fraud adalah lebih tinggi daripada kesilapan kerana fraud mungkin melibatkan pakatan, pemalsuan, ketinggalan yang disengajakan, representasi yang salah, atau mengatasi kawalan dalaman.

b. Memahami kawalan dalaman yang relevan untuk merangka prosedur audit yang bersesuaian tetapi bukan untuk menyatakan pendapat mengenai keberkesanan kawalan dalaman Suruhanjaya Tenaga.

c. Menilai kesesuaian dasar perakaunan yang diguna pakai dan kemunasabahan anggaran perakaunan dan pendedahan yang berkaitan oleh Anggota Suruhanjaya Tenaga.

d. Membuat kesimpulan terhadap kesesuaian penggunaan asas perakaunan untuk usaha berterusan oleh Anggota Suruhanjaya Tenaga dan berdasarkan bukti audit yang diperoleh, sama ada wujudnya ketidakpastian ketara yang berkaitan dengan peristiwa atau keadaan yang mungkin menimbulkan keraguan yang signifikan terhadap keupayaan Suruhanjaya Tenaga sebagai satu usaha berterusan. Jika saya membuat kesimpulan bahawa ketidakpastian ketara wujud, saya perlu melaporkan dalam Sijil Juruaudit terhadap pendedahan yang berkaitan dalam Penyata Kewangan Suruhanjaya Tenaga atau, jika pendedahan tersebut tidak mencukupi, pendapat saya akan diubah. Kesimpulan saya dibuat berdasarkan bukti audit yang diperoleh sehingga tarikh Sijil Juruaudit.

e. Menilai persembahan secara keseluruhan, struktur dan kandungan Penyata Kewangan Suruhanjaya Tenaga termasuk pendedahannya dan sama ada Penyata Kewangan Suruhanjaya Tenaga telah melaporkan asas-asas urus niaga dan peristiwa-peristiwa yang memberikan gambaran saksama.

Hal-hal Lain

a. Seperti yang dinyatakan pada Nota 2 kepada penyata kewangan, Suruhanjaya Tenaga telah menerima pakai Piawaian Perakaunan Sektor Awam Malaysia (MPSAS) mulai 1 Januari 2020 dan 1 Januari 2019, dengan tarikh peralihan pada 1 Januari 2019. Piawaian ini diterima pakai secara retrospektif oleh Anggota Suruhanjaya Tenaga terhadap angka perbandingan dalam penyata kewangan ini, termasuk Penyata Kedudukan Kewangan Suruhanjaya Tenaga pada 31 Disember 2019 dan Penyata Prestasi Kewangan, Penyata Perubahan Aset Bersih, Penyata Aliran Tunai serta Penyata Aliran Bajet Suruhanjaya Tenaga bagi tahun berakhir pada 31 Disember 2019 dan pendedahan berkaitan. Saya tidak terlibat untuk melaporkan maklumat perbandingan yang dinyatakan semula dan yang tidak diaudit. Tanggungjawab saya sebagai sebahagian daripada pengauditan Penyata Kewangan Suruhanjaya Tenaga bagi tahun berakhir 31 Disember 2020, dalam keadaan ini, termasuk mendapatkan bukti audit yang mencukupi dan bersesuaian yang baki awal pada 1 Januari 2020 tidak mengandungi salah nyata yang boleh memberi kesan ketara terhadap kedudukan kewangan pada 31 Disember 2020 dan prestasi kewangan dan aliran tunai bagi tahun berakhir pada tarikh tersebut.

b. Sijil ini dibuat untuk Anggota Suruhanjaya Tenaga berdasarkan keperluan Akta Suruhanjaya Tenaga 2001 (Akta 610) serta Akta Suruhanjaya Tenaga (Pindaan) 2010 (Akta A1371) dan bukan untuk tujuan lain. Saya tidak bertanggungjawab terhadap pihak lain bagi kandungan sijil ini.

(FARIZAH BINTI BERAM)
b.p. KETUA AUDIT NEGARA

PUTRAJAYA
27 OGOS 2021

PENYATA PENGERUSI DAN SEORANG ANGGOTA SURUHANJAYA TENAGA

Kami Dato' Azian bin Osman dan Dato' Ir. Dr. Shaik Hussein bin Mydin yang merupakan Pengerusi dan salah seorang Anggota Suruhanjaya Tenaga dengan ini menyatakan bahawa, pada pendapat Anggota Suruhanjaya Tenaga, Penyata Kewangan yang mengandungi Penyata Kedudukan Kewangan, Penyata Prestasi Kewangan, Penyata Perubahan Aset Bersih, Penyata Aliran Tunai dan Penyata Prestasi Bajet Suruhanjaya Tenaga yang berikut ini berserta dengan nota-nota kepada Penyata Kewangan di dalamnya, adalah disediakan untuk menunjukkan pandangan yang benar dan saksama berkenaan kedudukan Suruhanjaya Tenaga pada 31 Disember 2020 dan hasil kendaliannya serta perubahan kedudukan kewangannya bagi tahun berakhir pada tarikh tersebut.

Bagi pihak Anggota,

.....

Dato' Azian bin Osman
Pengerusi

Tarikh: 26 Ogos 2021

Tempat: Suruhanjaya Tenaga
Presint 2, Putrajaya

Bagi pihak Anggota,

.....

Dato' Ir. Dr. Shaik Hussein bin Mydin
Anggota

Tarikh: 26 Ogos 2021

Tempat: Suruhanjaya Tenaga
Presint 2, Putrajaya

PENGAKUAN OLEH PEGAWAI UTAMA YANG BERTANGGUNGJAWAB KE ATAS PENGURUSAN KEWANGAN SURUHANJAYA TENAGA

Saya, Abdul Razib bin Dawood, Ketua Pegawai Eksekutif yang bertanggungjawab ke atas pengurusan kewangan dan rekod-rekod perakaunan Suruhanjaya Tenaga, dengan ikhlasnya mengakui bahawa Penyata Kedudukan Kewangan, Penyata Prestasi Kewangan, Penyata Perubahan Aset Bersih, Penyata Aliran Tunai dan Penyata Prestasi Bajet Suruhanjaya Tenaga dalam kedudukan kewangan yang berikut ini berserta dengan nota-nota kepada Penyata Kewangan di dalamnya mengikut sebaik-baik pengetahuan dan kepercayaan saya, adalah betul dan saya membuat ikrar ini dengan sebenarnya mempercayai bahawa ia adalah benar dan atas kehendak-kehendak Akta Akuan Berkanun 1960.

Sebenarnya dan sesungguhnya)
diakui oleh penama di atas)
di ..... BANDAR BARU BANGI)
pada..... SELANGOR.....)
26 AUG 2021

.....

Di hadapan saya,

PESURUHJAYA SUMPAH
NO. B509
HAJI KASSIM BIN LEMAN
1.1.2021-3.1.2022
MALAYSIA

C-1-2, Bangi Gateway,
Persiaran Pekeliling,
43650 Bandar Baru Bangi,
Selangor.

.....

PESURUHJAYA SUMPAH

PENYATA KEDUDUKAN KEWANGAN
Pada 31 Disember 2020

	Nota	2020 RM	2019 RM
ASET			
Aset Semasa			
Tunai dan Kesetaraan Tunai	4	103,237,329	117,935,916
Pelaburan Jangka Pendek		398,228,632	340,196,087
Pelbagai Akaun Belum Terima, Deposit dan Pendahuluan	5	677,286	682,542
Pendapatan Faedah Belum Terima	6	2,142,746	5,425,199
Jumlah Aset Semasa		504,285,993	464,239,744
Aset Bukan Semasa			
Hartanah, Kelengkapan dan Peralatan	7	78,835,634	80,788,479
Jumlah Aset		**583,121,627**	**545,028,223**
LIABILITI			
Liabiliti Semasa			
Pelbagai Akaun Belum Bayar dan Perbelanjaan Terakru	8	15,507,437	11,726,594
Peruntukan Manfaat Pekerja Jangka Pendek	9	3,040,731	2,917,578
Kumpulan Wang Khas	10	5,747,479	6,357,303
Peruntukan Cukai		4,105,545	4,341,377
Jumlah Liabiliti Semasa		28,401,192	25,342,852
Liabiliti Bukan Semasa			
Peruntukan Manfaat Pekerja Jangka Panjang	9	14,041,195	13,048,058
Jumlah Liabiliti		**42,442,387**	**38,390,910**
Aset Bersih		**540,679,240**	**506,637,313**
ASET BERSIH/ EKUITI			
Dana Terkumpul		**540,679,240**	**506,637,313**

Nota-nota yang disertakan dari muka surat 6 hingga 32 adalah sebahagian daripada Penyata Kewangan ini.

PENYATA PRESTASI KEWANGAN
Bagi Tahun Berakhir 31 Disember 2020

	Nota	2020 RM	2019 RM
PENDAPATAN			
Hasil Daripada Urus Niaga Bukan Pertukaran			
Yuran dan Caj	11	107,080,874	109,519,354
Hasil Daripada Urus Niaga Pertukaran			
Faedah		13,947,835	15,613,506
Lain-lain Pendapatan		1,032,506	1,511,741
		122,061,215	126,644,601
PERBELANJAAN			
Gaji, Elaun dan Manfaat Pekerja	12	59,441,002	58,080,610
Perjalanan dan Sara Hidup		795,472	2,399,320
Perhubungan dan Utiliti		2,395,658	2,425,461
Sewaan		2,578,870	2,579,010
Hospitaliti		385,673	383,140
Bekalan pejabat		847,502	1,230,752
Penyenggaraan	13	6,235,067	6,498,890
Perkhidmatan Ikhtisas	14	8,216,185	6,234,559
Susutnilai Hartanah, Kelengkapan dan Peralatan		2,967,062	3,288,370
Perbelanjaan Lain		440,856	858,142
		(84,303,347)	(83,978,254)
Lebihan Sebelum Cukai		37,757,868	42,666,347
Cukai	15	(4,105,545)	(4,341,377)
Lebihan Bersih Semasa		33,652,323	38,324,970

Nota-nota yang disertakan dari muka surat 6 hingga 32 adalah sebahagian daripada Penyata Kewangan ini.

PENYATA PERUBAHAN ASET BERSIH
Bagi Tahun Berakhir 31 Disember 2020

	Nota	Jumlah RM
2019		
Baki pada 1 Januari		468,269,548
Pelarasan Tahun Sebelum	16	42,795
Lebihan bagi tahun		38,324,970
Baki pada 31 Disember		506,637,313
2020		
Baki pada 1 Januari		506,637,313
Pelarasan Tahun Sebelum	16	389,604
Lebihan bagi tahun		33,652,323
Baki pada 31 Disember		540,679,240

Nota-nota yang disertakan dari muka surat 6 hingga 32 adalah sebahagian daripada Penyata Kewangan ini.

PENYATA ALIRAN TUNAI
Bagi Tahun Berakhir 31 Disember 2020

	Nota	2020 RM	2019 RM
ALIRAN TUNAI DARIPADA AKTIVITI OPERASI			
Lebihan Pendapatan Sebelum Cukai		37,757,868	42,666,347
Pelarasan Untuk Perkara Yang Tidak Melibatkan Tunai:			
Pendapatan Faedah Diterima		(13,947,835)	(15,613,506)
Susutnilai Hartanah, Kelengkapan dan Peralatan		2,967,062	3,288,370
Pelupusan Hartanah, Kelengkapan dan Peralatan		540	577
Peruntukan Manfaat Pekerja		3,481,646	8,080,860
Keuntungan Operasi Sebelum Perubahan Modal Kerja		30,259,281	38,422,648
Perubahan Dalam Modal Kerja dan Kumpulan Wang Khas:			
Peningkatan/(Penurunan) di dalam Pelbagai Akaun Belum Terima dan Faedah Belum Terima		3,287,709	(1,603,826)
Peningkatan di dalam Pelbagai Akaun Belum Bayar dan Tanggungan Terakru		4,170,447	1,580,255
Faedah Kumpulan Wang Khas		64,814	64,148
Pindahan Semula Dana		(595,276)	(152,030)
Perbelanjaan Kumpulan Wang Khas		(79,362)	(39,251)
Tunai Dijana Daripada Aktiviti Operasi		37,107,613	38,271,944
Bayaran Cukai		(4,341,377)	(3,877,390)
Bayaran Manfaat Pekerja		(2,365,356)	(2,229,504)
Aliran Tunai Bersih Dijana Daripada Aktiviti Operasi		**30,400,880**	**32,165,050**
ALIRAN TUNAI DARIPADA AKTIVITI PELABURAN			
Pelaburan Jangka Pendek		(58,032,545)	(50,441,868)
Pembelian Hartanah, Kelengkapan dan Peralatan		(1,014,757)	(1,774,262)
Pendapatan Faedah Diterima		13,947,835	15,613,506
Aliran Tunai Bersih Digunakan Untuk Aktiviti Pelaburan		**(45,099,467)**	**(36,602,624)**
Penurunan Bersih Dalam Tunai Kesetaraan Tunai		(14,698,587)	(4,437,574)
Tunai dan Kesetaraan Tunai Pada Awal Tahun		**117,935,916**	**122,373,490**
Tunai dan Kesetaraan Tunai Pada Akhir Tahun	4	**103,237,329**	**117,935,916**

Nota-nota yang disertakan dari muka surat 6 hingga 32 adalah sebahagian daripada Penyata Kewangan ini.

PENYATA PRESTASI BAJET
Bagi Tahun Berakhir 31 Disember 2020

Sebenar 2019	PERIHAL	Sebenar 2020	Bajet Akhir	Bajet Asal	Perbezaan Bajet Akhir dengan Sebenar
RM		RM	RM	RM	RM
	HASIL				
109,519,354	Hasil Operasi	107,080,874	112,596,800	112,596,800	(5,515,926)
17,125,247	Pendapatan Faedah, Keuntungan Hibah dan Lain-lain Pendapatan	14,980,341	14,236,900	14,236,900	743,441
126,644,601	**Jumlah Hasil**	**122,061,215**	**126,833,700**	**126,833,700**	**(4,772,485)**

Sebenar 2019	PERIHAL	Sebenar 2020	Bajet Akhir	Bajet Asal	Perbezaan Bajet Akhir dengan Sebenar
RM		RM	RM	RM	RM
	PERBELANJAAN				
52,758,014	Emolumen	59,441,002	60,930,104	60,930,104	1,489,102
2,399,320	Perjalanan dan Sara hidup	795,472	4,000,000	4,000,000	3,204,528
2,425,461	Perhubungan dan Utiliti	2,395,658	2,672,379	2,662,379	276,721
2,579,010	Sewaan	2,578,870	3,205,353	3,205,353	626,483
383,139	Hospitaliti	385,673	676,178	676,178	290,505
1,138,884	Bekalan pejabat	847,502	1,700,231	1,650,531	852,729
6,133,654	Penyenggaraan	5,876,226	9,354,897	9,364,897	3,478,671
9,891,072	Perkhidmatan Ikhtisas	9,312,526	22,505,462	22,555,162	13,192,936
358,142	Perbelanjaan Lain	440,856	900,000	900,000	459,144
1,274,415	Aset	915,156	1,935,000	1,935,000	1,019,844
79,341,111	**Jumlah Perbelanjaan**	**82,988,941**	**107,879,604**	**107,879,604**	**24,890,663**
47,303,490	**Lebihan**	**39,072,274**	**18,954,096**	**18,954,096**	**(29,663,148)**

Nota-nota yang disertakan dari muka surat 6 hingga 32 adalah sebahagian daripada Penyata Kewangan ini.

Nota-nota kepada Penyata Kewangan

1. KEGIATAN UTAMA

Suruhanjaya Tenaga adalah sebuah badan berkanun yang beroperasi di No.12, Jalan Tun Hussein, Presint 2, 62100 Putrajaya.

Suruhanjaya Tenaga merupakan agensi pengawal selia tunggal bagi pengawalseliaan dan pembangunan sektor tenaga. Suruhanjaya Tenaga mempunyai tanggungjawab langsung bagi menyelia dan mengawasi kegiatan penjanaan tenaga termasuk mengawal selia setiap individu yang berlesen bawah Akta Suruhanjaya Tenaga 2001 (Akta 610) dan Akta Suruhanjaya Tenaga (Pindaan) 2010 (Akta A1371).

Penyata Kewangan ini telah diluluskan dan diperakukan oleh Suruhanjaya Tenaga untuk ditandatangan pada 26 Ogos 2021.

2. ASAS PENYEDIAAN PENYATA KEWANGAN

Pelaporan penyata kewangan Suruhanjaya Tenaga telah ditukarkan daripada *Malaysian Private Entities Reporting Standards* (MPERS) ke Piawaian Perakaunan Sektor Awam Malaysia (MPSAS). Penyata kewangan ST disediakan berasaskan konvensyen kos sejarah dan amalan perakaunan yang diterima umum di Malaysia. MPSAS 33 membenarkan pengguna kali pertama untuk mengiktiraf dan mengukur Aset dan Liabiliti tertentu dalam tempoh satu (1) hingga tiga (3) tahun.

Pemakaian Awal MPSAS:
Suruhanjaya Tenaga menggunakan piawaian MPSAS bermula pada 1 Januari 2020 dengan tarikh peralihan pada 1 Januari 2019 seperti berikut:

MPSAS 1: Pembentangan Penyata Kewangan
MPSAS 2: Penyata Aliran Tunai
MPSAS 3: Dasar Perakaunan, Perubahan dalam Anggaran Perakaunan dan Kesilapan
MPSAS 4: Kesan Perubahan Kadar Pertukaran Asing
MPSAS 9: Hasil daripada Urus Niaga Pertukaran
MPSAS 14: Peristiwa Selepas Tarikh Pelaporan
MPSAS 17: Hartanah, Loji dan Peralatan
MPSAS 19: Peruntukan, Liabiliti Luar Jangka dan Aset Luar Jangka
MPSAS 20: Pendedahan Pihak Berkaitan
MPSAS 21: Penjejasan Nilai Aset Tidak Menjana Tunai
MPSAS 22: Pendedahan kepada Maklumat Kewangan

2. ASAS PENYEDIAAN PENYATA KEWANGAN...SAMBUNGAN

MPSAS 23: Hasil daripada Urus Niaga Bukan Pertukaran (Cukai dan Pindahan)
MPSAS 24: Pembentangan Maklumat Bajet dalam Penyata Kewangan
MPSAS 25: Manfaat Pekerja
MPSAS 26: Penjejasan Nilai Aset Menjana Tunai
MPSAS 28: Instrumen Kewangan – Persembahan
MPSAS 29: Instrumen Kewangan - Pengukuran dan Pengiktirafan
MPSAS 30: Instrumen Kewangan - Pendedahan
MPSAS 33: Pemakaian Kali Pertama MPSAS Berasaskan Akruan

Penyediaan Penyata Kewangan memerlukan pengurusan untuk membuat pertimbangan, anggaran dan andaian yang mempengaruhi pemakaian polisi perakaunan dan laporan amaun aset, liabiliti, pendapatan dan perbelanjaan. Walaupun pertimbangan, anggaran dan andaian adalah berdasarkan kepada pengetahuan dan tindakan semasa pihak pengurusan yang terbaik, keputusan sebenar mungkin berbeza. Anggaran dan andaian disemak atas dasar berterusan. Semakan anggaran perakaunan diiktiraf dalam tempoh di mana anggaran disemak dan dalam mana-mana tempoh hadapan yang berkenaan.

3. POLISI PERAKAUNAN

(I). Hartanah, Kelengkapan dan Peralatan

Hartanah, Kelengkapan dan Peralatan dinyatakan pada kos ditolak susutnilai terkumpul dan rosot nilai, jika ada.

Susutnilai bagi hartanah, kelengkapan dan peralatan dikira berdasarkan kaedah asas garis lurus ke atas anggaran jangka masa guna aset berkenaan.

Kadar tahunan susutnilai adalah seperti berikut:

Bangunan	2%
Kenderaan bermotor	20%
Perabot, kelengkapan, ubah suai dan peralatan penguatkuasaan	20%
Peralatan pejabat (elektronik)	15%
Sistem aplikasi dan komputer	33 1/3%
Lekapan dan kelengkapan	20%

Tanah pada nilai kos adalah jenis pegangan untuk selama-lamanya dan tidak disusutnilaikan.

Nota-nota kepada Penyata Kewangan...sambungan

3. POLISI PERAKAUNAN...SAMBUNGAN

(I). Hartanah, Kelengkapan dan Peralatan...sambungan

Nilai sisa, jangka hayat dan kaedah susutnilai dikaji semula pada setiap akhir tahun kewangan bagi memastikan amaunnya, kaedah dan tahun susutnilai adalah selaras dengan anggaran sebelumnya serta corak penggunaan manfaat ekonomi hartanah dan peralatan tersebut.

(II). Aset Kewangan

Aset kewangan diiktiraf dalam Penyata Kedudukan Kewangan apabila Suruhanjaya menjadi pihak kepada peruntukan kontrak instrumen.

Pada pengiktirafan awal, Aset Kewangan adalah diukur pada nilai saksama, termasuk kos urus niaga untuk Aset Kewangan yang tidak diukur pada nilai saksama menerusi lebihan atau kurangan, yang terlibat secara langsung di dalam menerbit Aset Kewangan.

Selepas pengiktirafan awal, Aset Kewangan akan dikelaskan kepada salah satu daripada empat kategori Aset Kewangan iaitu Aset Kewangan diukur pada nilai saksama melalui lebihan atau kurangan, pinjaman dan belum terima, pelaburan dipegang hingga matang dan Aset Kewangan sedia untuk dijual.

Pembelian atau penjualan Aset Kewangan yang memerlukan penyerahan aset dalam tempoh masa yang ditetapkan oleh peraturan atau konvensyen di dalam pasaran akan diiktiraf pada tarikh urus niaga itu dibuat, iaitu tarikh di mana Suruhanjaya membuat komitmen untuk membeli atau menjual aset tersebut.

Pihak Suruhanjaya mempunyai Kategori Aset Kewangan seperti berikut:

(a). Pinjaman Dan Belum Terima

Pinjaman dan Belum Terima adalah Aset Kewangan bukan derivatif dengan bayaran tetap atau pembayaran yang tidak tersiar harga di dalam pasaran aktif. Selepas pengiktirafan awal, Aset Kewangan tersebut kemudiannya diukur pada nilai kos dilunaskan dengan menggunakan kaedah faedah berkesan dan ditolak rosot nilai. Kos dilunaskan dikira dengan mengambilkira apa-apa diskaun atau premium atas pembelian aset tersebut serta yuran atau kos yang merupakan sebahagian daripada kadar faedah berkesan. Kerugian yang timbul daripada kemerosotan nilai diiktiraf dalam lebihan atau kurangan.

3. POLISI PERAKAUNAN...SAMBUNGAN

(II). Aset Kewangan...sambungan

(a). Pinjaman Dan Belum Terima...sambungan

Pinjaman dan Belum Terima diklasifikasikan sebagai aset semasa kecuali Pinjaman dan Belum Terima di mana tarikh matang adalah melebihi 12 bulan selepas tarikh laporan yang diklasifikasikan sebagai aset bukan semasa.

(b). Aset Kewangan Pada Nilai Saksama Melalui Lebihan atau Kurangan

Bagi mana-mana derivatif terbenam yang tidak boleh dinilai dengan yakin secara berasingan sama ada pada tarikh pengambilalihan atau pada tarikh akhir tempoh laporan yang berikutnya, keseluruhan instrumen tersebut ditetapkan pada Nilai Saksama Melalui Lebihan atau Kurangan.

Walau bagaimanapun, jika keseluruhan instrumen tidak boleh dinilai dengan yakin, instrumen tersebut dinyatakan pada nilai kos selepas ditolak rosot nilai.

(c). Pelaburan Dipegang Hingga Matang

Aset Kewangan bukan derivatif dengan tempoh matang pembayaran tetap atau boleh ditentukan dan tetap diklasifikasikan sebagai dipegang untuk matang apabila Suruhanjaya mempunyai niat positif dan keupayaan untuk memegang sehingga matang. Selepas pengukuran awal, pelaburan dipegang-hingga-matang diukur pada kos yang dilunaskan menggunakan kaedah faedah berkesan dan ditolak rosot nilai. Kos pelunasan dikira dengan mengambilkira apa-apa diskaun atau premium atas pengambilalihan dan yuran atau kos yang merupakan sebahagian daripada kadar faedah berkesan. Kerugian yang timbul daripada kemerosotan nilai diiktiraf dalam Penyata Prestasi Kewangan.

Suruhanjaya akan menyahiktiraf Aset Kewangan atau, jika berkenaan, sebahagian daripada Aset Kewangan atau sebahagian daripada sekumpulan Aset Kewangan apabila:

Nota-nota kepada Penyata Kewangan...sambungan

3. POLISI PERAKAUNAN...SAMBUNGAN

(II). Aset Kewangan...sambungan

(c). Pelaburan Dipegang Hingga Matang...sambungan

(i). Hak untuk menerima aliran tunai daripada aset telah luput atau dikecualikan;

(ii). Suruhanjaya telah memindahkan haknya untuk menerima aliran tunai daripada aset atau telah menerima obligasi untuk membayar aliran tunai yang diterima secara penuh tanpa kelewatan material kepada pihak ketiga; dan sama ada: (i) Suruhanjaya telah memindahkan sebahagian besar risiko dan ganjaran aset; atau (ii) Suruhanjaya tidak memindahkan atau mengekalkan sebahagian besar risiko dan ganjaran aset, tetapi telah memindahkan kawalan aset tersebut.

Sebarang perbezaan di antara nilai dibawa aset kewangan yang dinyahiktiraf dan pertimbangan diterima adalah diiktiraf di dalam Penyata Prestasi Kewangan dalam tempoh penyahiktirafan. Bagi Aset Kewangan sedia untuk dijual, semua keuntungan atau kerugian yang diiktiraf sebelum ini di dalam Penyata Aset Bersih akan diiktiraf di dalam Penyata Prestasi Kewangan.

(d). Aset Kewangan Sedia Dijual

Aset Kewangan Sedia Dijual adalah Aset Kewangan yang ditetapkan sebagai sedia untuk dijual atau tidak diklasifikasikan dalam mana-mana kategori Aset Kewangan lain. Selepas pengiktirafan asal, Aset Kewangan sedia dijual dinyatakan pada nilai saksama. Keuntungan atau kerugian daripada perubahan nilai saksama Aset Kewangan tersebut diiktiraf melalui Penyata Aset Bersih, kecuali kerugian rosot nilai, kerugian dan keuntungan pertukaran mata wang asing atas instrumen kewangan dan faedah yang dikira di bawah kaedah faedah berkesan.

Pelaburan dalam instrumen ekuiti di mana nilai saksama tidak boleh dinilai dengan yakin dinyatakan pada nilai kos setelah ditolak kerugian rosot nilai.

3. POLISI PERAKAUNAN...SAMBUNGAN

(III). Liabiliti Kewangan

Liabiliti Kewangan diiktiraf dalam Penyata Kedudukan Kewangan apabila Suruhanjaya menjadi pihak kepada peruntukan kontrak instrumen.

Pada pengiktirafan awal, Liabiliti Kewangan adalah diukur pada nilai saksama, termasuk kos urus niaga untuk Liabiliti Kewangan yang tidak diukur pada nilai saksama menerusi lebihan atau kurangan, yang terlibat secara langsung di dalam menerbitkan Liabiliti Kewangan.

Selepas pengiktirafan awal, Liabiliti Kewangan dikelaskan kepada salah satu daripada dua kategori Liabiliti Kewangan iaitu Liabiliti Kewangan diukur pada nilai saksama menerusi lebihan atau kurangan, pinjaman dan belum bayar.

Suruhanjaya mempunyai kategori Liabiliti Kewangan seperti berikut:

Pinjaman dan Belum bayar

Selepas pengiktirafan awal, Pinjaman dan Belum Bayar adalah diukur pada kos dilunaskan menggunakan kaedah faedah berkesan. Keuntungan atau kerugian diiktiraf di dalam lebihan atau kurangan apabila Liabiliti Kewangan dinyahiktiraf atau dirosotnilai.

Liabiliti Kewangan dinyahiktiraf apabila obligasi yang dinyatakan dalam kontrak telah dilepaskan, dibatalkan atau tamat tempoh.

Sebarang perbezaan di antara nilai dibawa Liabiliti Kewangan yang dinyahiktiraf dan pertimbangan dibayar adalah diiktiraf di dalam lebihan atau kurangan dalam tempoh penyahiktirafan.

(IV). Pertimbangan Perakaunan Kritikal dan Ketidakpastian dalam Sumber Utama Anggaran

Tiada sebarang pertimbangan perakaunan kritikal dan ketidakpastian dalam sumber utama anggaran yang digunakan ketika menyediakan Penyata Kewangan Suruhanjaya yang mempunyai kesan ketara ke atas jumlah yang dilaporkan selain yang dinyatakan di bawah:

Nota-nota kepada Penyata Kewangan...sambungan

3. POLISI PERAKAUNAN...SAMBUNGAN

(IV). Pertimbangan Perakaunan Kritikal dan Ketidakpastian dalam Sumber Utama Anggaran ...sambungan

(a). Elaun Rosot Nilai bagi Belum Terima

Suruhanjaya menilai pada setiap tarikh pelaporan sama ada terdapat sebarang bukti objektif bahawa Aset Kewangan terjejas. Untuk menentukan sama ada terdapat bukti objektif rosot nilai, Suruhanjaya menganggap faktor seperti ketidakmampuan bayar siberhutang dan keingkaran atau kelewatan pembayaran yang ketara. Jika terdapat bukti potensi hutang tak mampu dibayar, jumlah dan masa aliran tunai masa hadapan dianggarkan berdasarkan sejarah pengalaman kerugian untuk aset yang mempunyai ciri-ciri risiko kredit yang serupa.

(b). Perubahan Anggaran Jangka Hayat bagi Hartanah, Kelengkapan dan Peralatan

Semua Hartanah, Kelengkapan dan Peralatan disusutnilaikan mengikut kaedah garis lurus sepanjang jangka hayat aset tersebut. Perubahan dalam anggaran corak penggunaan aset dan pembangunan teknologi boleh memberi kesan kepada jangka hayat dan nilai sisa aset tersebut. Ini akan menyebabkan susut nilai aset pada masa hadapan akan disemak semula.

(c). Pengukuran Peruntukan

Suruhanjaya sentiasa menggunakan anggaran terbaik sebagai asas untuk mengukur suatu peruntukan itu. Anggaran itu dibuat berdasarkan kepada pengalaman lalu, lain-lain petunjuk atau andaian, perkembangan terkini dan peristiwa masa hadapan yang munasabah dalam menentukan suatu peruntukan.

3. POLISI PERAKAUNAN...SAMBUNGAN

(V). Penjejasan Aset Bukan Kewangan

(a). Penjejasan nilai aset menjana tunai

Pada setiap tarikh Penyata Kedudukan Kewangan, Suruhanjaya mengkaji semula nilai dibawa aset-asetnya bagi menentukan sama ada terdapat sebarang petunjuk kemerosotan nilai. Jika wujud sebarang petunjuk, rosot nilai dikira dengan membandingkan nilai dibawa aset dengan amaun boleh pulih. Amaun boleh pulih adalah nilai tertinggi di antara nilai saksama ditolak kos untuk dijual dan nilai dalam penggunaan.

Dalam menentukan nilai dalam penggunaan aliran tunai masa hadapan akan didiskaunkan kepada nilai semasanya menggunakan kadar diskaun sebelum cukai yang menggambarkan nilai pasaran semasa nilai masa wang dan risiko khusus kepada aset tersebut. Di dalam menentukan nilai saksama ditolak kos untuk dijual pula, urus niaga pasaran terkini akan diambilkira, jika ada. Jika tiada urus niaga pasaran terkini berlaku, model penilaian yang sesuai hendaklah digunakan.

Kerugian kemerosotan diiktiraf sebagai perbelanjaan dalam Penyata Prestasi Kewangan serta merta apabila nilai dibawa aset melebihi amaun boleh pulihnya.

Kerugian kemerosotan nilai yang diiktiraf dalam tempoh terdahulu bagi sesuatu aset hendaklah dibalikkan jika, dan hanya jika terdapat perubahan dalam anggaran yang digunakan untuk menentukan amaun boleh pulih. Pembalikan tersebut diiktiraf dalam Penyata Prestasi Kewangan.

(b). Penjejasan nilai aset bukan menjana tunai

Suruhanjaya akan menilai pada setiap tarikh pelaporan sama ada terdapat petunjuk bahawa Aset Penjanaan Bukan Tunai mungkin terjejas. Jika sebarang petunjuk wujud, maka Suruhanjaya akan membuat anggaran ke atas jumlah perkhidmatan boleh pulih aset. Jumlah perkhidmatan boleh pulih aset adalah nilai tertinggi di antara nilai saksama ditolak kos untuk dijual dan nilai dalam penggunaan.

Kerugian kemerosotan diiktiraf sebagai perbelanjaan dalam Penyata Prestasi Kewangan serta merta apabila nilai aset melebihi jumlah perkhidmatan boleh pulihnya.

Dalam menentukan nilai dalam penggunaan, Suruhanjaya telah menggunapakai pendekatan kos penggantian yang disusutnilai. Di dalam pendekatan ini, nilai semasa baki potensi perkhidmatan aset ditentukan sebagai kos penggantian aset yang telah disusutnilai.

Nota-nota kepada Penyata Kewangan...sambungan

3. POLISI PERAKAUNAN...SAMBUNGAN

(V). Penjejasan Aset Bukan Kewangan...sambungan

(b). Penjejasan nilai aset bukan menjana tunai...sambungan

Kos penggantian yang disusutnilai akan diukur dengan mengambilkira kos penggantian aset ditolak susut nilai terkumpul yang dikira atas kos itu bagi mencerminkan potensi perkhidmatan aset yang telah digunakan atau sudah luput.

Dalam menentukan nilai saksama ditolak kos untuk dijual pula, harga aset dalam perjanjian yang mengikat akan dilaraskan bagi menentukan harga pelupusan aset tersebut. Jika tiada perjanjian yang mengikat, tetapi aset tersebut diniagakan di pasaran secara aktif, maka nilai saksama ditolak kos untuk dijual adalah ditentukan dengan merujuk kepada nilai pasaran terkini ditolak kos pelupusan. Jika tiada perjanjian jual yang mengikat atau pasaran aktif bagi aset, Ahli Lembaga menentukan nilai saksama ditolak kos untuk menjual berdasarkan maklumat yang ada yang terbaik.

Bagi setiap aset, penilaian dibuat pada setiap tarikh laporan sama ada terdapat sebarang petunjuk yang sebelum ini kerugian rosot nilai yang diiktiraf mungkin tidak lagi wujud atau telah berkurangan. Jika petunjuk sedemikian wujud, Suruhanjaya menganggarkan jumlah perkhidmatan boleh pulih aset. Kerugian kemerosotan nilai yang diiktiraf sebelumnya dibalikkan hanya jika terdapat perubahan dalam andaian yang digunakan untuk menentukan jumlah perkhidmatan boleh pulih aset sejak kerugian kemerosotan nilai terakhir diiktiraf. Pembalikan adalah terhad setakat nilai dibawa aset tidak melebihi jumlah perkhidmatan boleh pulih atau tidak melebihi nilai dibawa yang mungkin setelah susut nilai terkumpul seperti tiada kerugian kemerosotan nilai diiktiraf bagi aset tersebut dalam tahun sebelumnya. Pembalikan tersebut diiktiraf dalam Penyata Prestasi Kewangan.

(VI). Tunai dan Kesetaraan Tunai

Tunai dan Kesetaraan Tunai merangkumi tunai di tangan dan baki bank, deposit di bank dan institusi kewangan lain serta pelaburan berjangka pendek yang mempunyai kecairan tinggi dengan tempoh matang 3 bulan dan kurang dari tarikh pembelian dan sedia ditukar dalam bentuk tunai dengan risiko perubahan nilai yang rendah.

Penyata Aliran Tunai disediakan menggunakan kaedah secara tidak langsung.

3. POLISI PERAKAUNAN...SAMBUNGAN

(VII). Pelaburan Jangka Pendek

Pelaburan Jangka Pendek merupakan deposit di bank dan institusi kewangan lain serta pelaburan berjangka pendek yang mempunyai kecairan tinggi dengan tempoh matang lebih 3 bulan dan sehingga setahun dari tarikh pembelian dan sedia ditukar dalam bentuk tunai dengan risiko perubahan nilai yang rendah.

(VIII). Kumpulan Wang Khas

Kumpulan Wang Khas merupakan peruntukan khas yang diterima daripada Akaun Amanah Industri Bekalan Elektrik (AAIBE) di bawah Kementerian Tenaga, Teknologi Hijau dan Air (KeTTHA) yang mana kini dikendalikan oleh Kementerian Tenaga dan Sumber Asli (KeTSA) dan Agensi Kerajaan bagi tujuan-tujuan yang khusus.

(IX). Rosot Nilai

Nilai bawaan bagi aset-aset Suruhanjaya Tenaga dan aset kewangan disemak semula pada setiap tarikh Penyata Kedudukan Kewangan untuk menentukan sama ada terdapat sebarang petunjuk adanya rosot nilai. Jika petunjuk tersebut wujud, nilai perolehan semula akan dianggarkan. Kerugian rosot nilai akan diiktiraf dalam Penyata Prestasi Kewangan melainkan jika nilai bawaan aset tersebut telah dinilaikan semula, di mana ianya dikenakan ke rizab. Kerugian rosot nilai diiktiraf apabila nilai gunaan bagi aset atau aset yang dipunyai oleh unit penghasilan tunai melebihi nilai penampungnya.

Amaun yang boleh diperolehi adalah nilai yang lebih besar antara harga jualan bersih harta tersebut dan nilai gunaannya. Dalam menentukan nilai gunaan, anggaran nilai tunai masa depan akan didiskaunkan kepada nilai terkini menggunakan kadar diskaun sebelum cukai yang menunjukkan penilaian pasaran semasa terhadap nilai masa tunai dan risiko-risiko khusus atas harta tersebut. Bagi aset yang tidak menghasilkan sebahagian besar aliran tunainya secara tersendiri, amaun yang boleh diperolehi ditentukan untuk aset yang dipunyai oleh unit penghasilan tunai untuk aset berkenaan.

Bagi aset-aset yang lain, kerugian rosot nilai akan diambil kira semula apabila terdapat perubahan dalam anggaran yang digunakan untuk menentukan amaun yang boleh diperolehi.

Nota-nota kepada Penyata Kewangan...sambungan

3. POLISI PERAKAUNAN...SAMBUNGAN

(IX). Rosot Nilai...sambungan

Kerugian rosot nilai hanya akan dikira semula ke tahap nilai bawaan aset tersebut tidak melebihi nilai bawaan asal, setelah ditolak susutnilai, seolah-olah kerugian rosot nilai tidak pernah dikenakan. Kira semula tersebut akan dikenakan ke Penyata Prestasi Kewangan, melainkan jika kira semula tersebut dikenakan kepada aset yang dinilaikan semula, ianya akan dikenakan ke ekuiti.

(X). Percukaian

Cukai pendapatan ke atas untung atau rugi bagi tahun berkenaan ialah cukai semasa. Cukai semasa ialah amaun cukai pendapatan dijangka yang perlu dibayar atas untung boleh cukai bagi tahun berkenaan dan diukur dengan menggunakan kadar cukai yang digunakan pada tarikh Penyata Kedudukan Kewangan.

Perbelanjaan cukai semasa adalah bayaran cukai yang dijangkakan ke atas pendapatan yang boleh dikenakan cukai bagi tahun semasa, dengan menggunakan kadar cukai yang diwartakan atau sebahagian besarnya diwartakan pada tarikh Penyata Kedudukan Kewangan, dan sebarang perubahan pada bayaran cukai untuk tahun terdahulu.

Cukai tertunda diperuntukkan dengan menggunakan kaedah tanggungan untuk semua perbezaan masa terhasil di antara kadar cukai aset dan tanggungan dan nilai di bawa dalam penyata kewangan. Perbezaan bersifat sementara tidak diiktiraf bagi muhibah, yang tidak dibenarkan bagi tujuan percukaian, dan pada permulaan pengiktirafan aset atau tanggungan dimana pada masa transaksi ianya tidak mempengaruhi keuntungan berkanun dan keuntungan yang boleh dikenakan cukai. Jumlah cukai tertunda yang diperuntukkan adalah berdasarkan kepada jangkaan cara realisasi atau penyelesaian bagi nilai di bawa aset dan tanggungan, menggunakan kadar cukai diwartakan atau sebahagian besarnya diwartakan pada tarikh Penyata Kedudukan Kewangan.

Aset cukai tertunda diiktiraf hanya pada mana ianya berkemungkinan keuntungan yang boleh dikenakan cukai di masa hadapan boleh diperolehi dari aset yang digunakan.

3. POLISI PERAKAUNAN...SAMBUNGAN

(XI). Manfaat Pekerja

(a). Manfaat Pekerja Jangka Pendek

Upah, gaji dan bonus diiktiraf sebagai perbelanjaan dalam tahun di mana perkhidmatan dilaksanakan oleh pekerja-pekerja Suruhanjaya Tenaga. Cuti berganjaran terkumpul jangka pendek seperti cuti tahunan berbayar diiktiraf apabila perkhidmatan dilaksanakan oleh pekerja yang akan meningkatkan kelayakan pekerja ke atas cuti berbayar hadapan, dan cuti berganjaran jangka pendek tidak terkumpul seperti cuti sakit hanya diiktiraf apabila cuti berlaku. Kemudahan perubatan seperti kemudahan rawatan pesakit luar, kemudahan skim hospital dan pembedahan berkumpulan dan kemudahan bersalin adalah diberikan kepada semua kakitangan tetap dan kontrak berdasarkan peruntukan yang telah ditetapkan di dalam Terma dan Syarat Perkhidmatan Suruhanjaya Tenaga yang sedang berkuat kuasa.

Manakala, manfaat pekerja seperti pemberian faedah persaraan berbentuk gratuiti dan subsidi bagi pinjaman perumahan, kenderaan dan peribadi yang akan dibayar dalam tahun kewangan akan datang akan diiktiraf secara akruan di dalam Penyata Prestasi Kewangan tahun semasa sebagai perbelanjaan dan di dalam Penyata Kedudukan Kewangan sebagai Liabiliti Semasa.

(b). Pelan Sumbangan Tetap

Mengikut undang-undang, majikan di Malaysia yang berkelayakan diwajibkan memberi sumbangan tetap ke atas Kumpulan Wang Simpanan Pekerja dan PERKESO. Sumbangan tersebut diiktiraf sebagai perbelanjaan di dalam Penyata Prestasi Kewangan. Tanggungan untuk pelan sumbangan tetap, diiktiraf sebagai perbelanjaan semasa di dalam Penyata Prestasi Kewangan.

(c). Manfaat Pekerja Jangka Panjang

Manfaat Pekerja Jangka Panjang ialah pemberian faedah persaraan berbentuk gratuiti kepada kakitangan kakitangan tetap yang telah berkhidmat minimum 10 tahun dengan kadar pengiraan gratuiti seperti yang diluluskan oleh YB Menteri. Ianya merupakan bayaran manfaat pekerja yang dibayar selepas bersara yang diiktiraf secara akruan dalam Penyata Prestasi Kewangan tahun semasa sebagai perbelanjaan dan di dalam Penyata Kedudukan Kewangan sebagai Liabiliti Bukan Semasa. Pengiktirafan dengan menggunakan *actuarial valuation method.*

Nota-nota kepada Penyata Kewangan...sambungan

3. POLISI PERAKAUNAN...SAMBUNGAN

(XII). Pengiktirafan Pendapatan dan Perbelanjaan

Pendapatan dari yuran dan caj diambil kira mengikut asas tunai memandangkan tanggungjawab pembayaran tahunan adalah pada pemegang-pemegang lesen. Selain itu, pendapatan faedah bagi simpanan semasa di bank dikira berasaskan tunai manakala pendapatan faedah daripada simpanan tetap dan pelaburan jangka pendek serta semua perbelanjaan diambil kira mengikut asas akruan. Pendapatan pelbagai terdiri daripada jualan dokumen tender, jualan buku-buku berkaitan industri, jualan aset tetap dan caj/penalti yang dikenakan atas kegagalan melaksanakan projek. Pelbagai kos operasi merangkumi perbelanjaan sumbangan atau penajaan yang dibuat oleh Suruhanjaya Tenaga untuk penyelidikan dan pembangunan.

(XIII). Pendedahan Pihak Berkaitan

Pihak-pihak yang dianggap berkaitan jika satu pihak mempunyai keupayaan untuk mengawal pihak lain atau melaksanakan pengaruh ke atas pihak lain, setakat mana ia menghalang pihak lain dari mengejar kepentingan sendiri yang berasingan dalam membuat keputusan kewangan dan operasi.

(XIV). Peruntukan

Peruntukan diiktiraf apabila Suruhanjaya Tenaga mempunyai obligasi semasa yang konstruktif dan dari segi undang- undang, kesan daripada peristiwa lalu dan berkemungkinan bahawa aliran keluar sumber yang melibatkan manfaat ekonomi akan diperlukan untuk menyelesaikan obligasi tersebut dan amaun obligasi itu boleh dianggarkan dengan pasti.

Peruntukan disemak pada setiap tarikh pelaporan dan diselaraskan untuk membayangkan anggaran semasa terbaik. Jika tiada lagi kemungkinan bahawa aliran keluar sumber ekonomi akan diperlukan untuk menyelesaikan obligasi itu, peruntukan tersebut akan dibalikkan. Sekiranya kesan nilai masa wang adalah ketara, peruntukan akan didiskaunkan menggunakan kadar sebelum cukai semasa yang menggambarkan, bila mana bersesuaian, risiko khusus kepada liabiliti tersebut. Apabila pendiskaunan digunakan, peningkatan dalam peruntukan yang disebabkan oleh peredaran masa diiktiraf sebagai kos kewangan.

3. POLISI PERAKAUNAN...SAMBUNGAN

(XV). Tukaran Wang Asing

Urus niaga yang dibuat dengan menggunakan mata wang asing telah ditukarkan kepada Ringgit Malaysia dengan kadar yang ditetapkan pada masa urus niaga dilaksanakan.

4. TUNAI DAN KESETARAAN TUNAI

	2020	2019
	RM	RM
Wang Tunai dan Baki di Bank	35,840,473	38,226,099
Deposit di Bank Berlesen	67,396,856	79,709,817
JUMLAH	**103,237,329**	**117,935,916**

Wang Tunai dan Baki di Bank adalah termasuk dana Kumpulan Wang Khas sebanyak RM5,747,480 (2019: RM6,357,303).

5. PELBAGAI AKAUN BELUM TERIMA, DEPOSIT DAN PENDAHULUAN

	2020	2019
	RM	RM
Pendahuluan Kakitangan	–	6,620
Deposit Keahlian Kelab	92,000	92,000
Lain- lain Deposit dan Pendahuluan	585,286	583,922
JUMLAH	**677,286**	**682,542**

Lain-lain Deposit dan Pendahuluan adalah terdiri daripada deposit sewa pejabat kawasan, stor, dan tempat letak kenderaan serta deposit penggunaan fasiliti lain seperti deposit bagi perkhidmatan perubatan *(Third Party Administrator)*, ruang iklan pejabat kawasan, elektrik dan lain-lain.

Nota-nota kepada Penyata Kewangan...sambungan

6. PENDAPATAN FAEDAH BELUM TERIMA

	2020	2019
	RM	RM
Hasil Faedah Terakru	2,142,746	5,425,199
JUMLAH	**2,142,746**	**5,425,199**

Pendapatan Faedah Belum Terima adalah faedah belum matang bagi simpanan tetap yang diambil kira sehingga 31 Disember setiap tahun.

Nota-nota kepada Penyata Kewangan...sambungan

7. HARTANAH, KELENGKAPAN DAN PERALATAN

2020

	Tanah	Bangunan	Kenderaan Bermotor	Perabot Kelengkapan, Ubahsuai dan Peralatan Penguatkuasaan	Peralatan Pejabat (Elektronik)	Sistem Aplikasi dan Komputer	Lekapan dan Kelengkapan	Jumlah
	RM	RM	RM	RM	RM	RM	RM	RM
Kos								
Pada 1 Januari	8,299,405	79,205,160	4,347,898	6,938,122	5,248,782	5,414,159	1,580,140	111,033,666
Penambahan	–	–	341,516	114,164	109,239	449,838	–	1,014,757
Pelupusan/Pindahan	–	–	(544,975)	–	–	(696,349)	–	(1,241,324)
Pada 31 Disember	8,299,405	79,205,160	4,144,439	7,052,286	5,358,021	5,167,648	1,580,140	110,807,099
Susutnilai Terkumpul								
Pada 1 Januari	–	10,296,670	3,689,144	5,624,827	4,597,545	4,505,377	1,531,624	30,245,187
Susutnilai Tahun Semasa	–	1,584,103	197,901	400,139	239,836	535,082	10,001	2,967,062
Pelupusan/Pindahan	–	–	(544,972)	–	–	(695,812)	–	(1,240,784)
Pada 31 Disember	–	11,880,773	3,342,073	6,024,966	4,837,381	4,344,647	1,541,625	31,971,465
Nilai Buku Bersih								
Pada 31 Disember	**8,299,405**	**67,324,387**	**802,366**	**1,027,320**	**520,640**	**823,001**	**38,515**	**78,835,634**

7. HARTANAH, KELENGKAPAN DAN PERALATAN...SAMBUNGAN

2019

	Tanah	Bangunan	Kenderaan Bermotor	Perabot Kelengkapan, Ubahsuai dan Peralatan Penguatkuasaan	Peralatan Pejabat (Elektronik)	Sistem Aplikasi dan Komputer	Lekapan dan Kelengkapan	Jumlah
	RM	RM	RM	RM	RM	RM	RM	RM
Kos								
Pada 1 Januari	8,299,405	79,205,160	3,967,265	6,192,721	5,155,761	5,135,488	1,530,134	109,485,934
Penambahan	–	-	534,237	763,004	143,779	283,236	50,006	1,774,262
Pelupusan/Pindahan	–	-	(153,604)	(17,603)	(50,758)	(4,565)	-	(226,530)
Pada 31 Disember	8,299,405	79,205,160	4,347,898	6,938,122	5,248,782	5,414,159	1,580,140	111,033,666
Susutnilai Terkumpul								
Pada 1 Januari	–	8,712,567	3,627,962	5,336,796	4,028,008	3,947,363	1,530,074	27,182,770
Susutnilai Tahun Semasa	–	1,584,103	214,785	305,634	619,720	562,578	1,550	3,288,370
Pelupusan/Pindahan	–	-	(153,603)	(17,603)	(50,183)	(4,564)	-	(225,953)
Pada 31 Disember	–	10,296,670	3,689,144	5,624,827	4,597,545	4,505,377	1,531,624	30,245,187
Nilai Buku Bersih								
Pada 31 Disember	**8,299,405**	**68,908,490**	**658,754**	**1,313,295**	**651,237**	**908,782**	**48,516**	**80,788,479**

8. PELBAGAI AKAUN BELUM BAYAR DAN PERBELANJAAN TERAKRU

	2020	2019
	RM	RM
Akaun Belum Bayar	55,084	-
Akaun Belum Bayar Terakru	13,257,096	9,893,566
Peruntukan Cuti Kakitangan (GCR)	2,145,269	1,785,540
Kompaun Kumpulan Wang Disatukan di bawah KeTSA	2,500	-
Yuran Audit	47,488	47,488
JUMLAH	**15,507,437**	**11,726,594**

9. PERUNTUKAN MANFAAT PEKERJA

	2020	2019
	RM	RM
Pada 1 Januari	15,965,636	10,114,280
Peruntukan bagi Tahun Semasa	3,481,646	8,080,860
Bayaran pada Tahun Semasa	(2,365,356)	(2,229,504)
Pada 31 Disember	**17,081,926**	**15,965,636**

Struktur kematangan Peruntukan Manfaat Pekerja adalah seperti berikut:

	2020	2019
	RM	RM
Matang dalam Tempoh 12 Bulan	3,040,731	2,917,578
Matang dalam Tempoh Melebihi 12 bulan	14,041,195	13,048,058
JUMLAH	**17,081,926**	**15,965,636**

Peningkatan Peruntukan Manfaat Pekerja dalam tahun 2020 adalah selaras dengan penambahan kakitangan dan pindaan Terma dan Syarat Perkhidmatan Suruhanjaya Tenaga yang berkuat kuasa pada 1 Mac 2019.

Nota-nota kepada Penyata Kewangan...sambungan

10. KUMPULAN WANG KHAS

2020

	Akaun Wang Khas PPKTL	Akaun Wang Khas MyPower	Akaun Wang Khas PR&PLL	Akaun Wang Khas SAIDI 100	Jumlah
	RM	RM	RM	RM	RM
Baki pada 1 Januari 2020	**729,167**	**1,979**	**5,611,865**	**14,292**	**6,357,303**
Pendapatan:					
Faedah Bank	8,656	6	56,042	122	**64,826**
	8,656	6	56,042	122	64,826
(-) Perbelanjaan					
Caj bank	(1)	(10)	(1)	-	**(12)**
Perbelanjaan/Pelunasan dalam tahun	-	-	(79,362)	-	**(79,362)**
Pindahan Semula Peruntukan/Dana	(580,862)	-	-	(14,414)	**(595,276)**
	(580,863)	(10)	(79,363)	(14,414)	**(674,650)**
Kurangan	(572,207)	(4)	(23,321)	(14,292)	**(609,824)**
Baki pada 31 Disember 2020	**156,960**	**1,975**	**5,588,544**	**-**	**5,747,479**

2019

	Akaun Wang Khas PPKTL	Akaun Wang Khas MyPower	Akaun Wang Khas PR&PLL	Akaun Wang Khas SAIDI 100	Jumlah
	RM	RM	RM	RM	RM
Baki pada 1 Januari 2019	**721,891**	**1,817**	**5,595,228**	**165,500**	**6,484,436**
Pendapatan:					
Faedah Bank	7,276	163	55,888	822	**64,149**
	7,276	163	55,888	822	64,149
(-) Perbelanjaan					
Caj bank	-	(1)	-	-	**(1)**
Perbelanjaan/Pelunasan dalam tahun	-	-	(39,251)	-	**(39,251)**
Pindahan Semula Peruntukan/Dana	-	-	-	(152,030)	**(152,030)**
	-	(1)	(39,251)	(152,030)	**(191,282)**
Lebihan/(Kurangan)	7,276	162	16,637	(151,208)	**(127,133)**
Baki pada 31 Disember 2019	**729,167**	**1,979**	**5,611,865**	**14,292**	**6,357,303**

10. KUMPULAN WANG KHAS...SAMBUNGAN

Kumpulan Wang Khas merupakan peruntukan khas yang diterima daripada Akaun Amanah Industri Bekalan Elektrik (AAIBE) di bawah Kementerian Tenaga, Teknologi Hijau dan Air (KeTTHA) yang mana kini dikendalikan oleh Kementerian Tenaga dan Sumber Asli (KeTSA) serta Agensi Kerajaan bagi tujuan-tujuan yang khusus. Butiran setiap akaun di bawah Kumpulan Wang Khas adalah seperti berikut:-

(i). **Akaun Wang Khas PPKTL:** bertujuan membiayai Projek Pelan Komunikasi Tenaga Lestari bagi mempromosi tenaga lestari yang merangkumi bidang kecekapan tenaga dan tenaga boleh baharu, serta memupuk kesedaran dan meningkatkan pengetahuan orang ramai terhadap kerangka perundangan dan kawal selia tenaga lestari. Pemulangan baki dana telah dibuat kepada AAIBE di bawah Kementerian Tenaga dan Sumber Asli (KeTSA) sebanyak RM528,056.61 pada 20 Oktober 2020 seperti yang diarahkan melalui surat bertarikh 15 September 2020. Selain itu, ST juga telah membuat pemulangan baki dana sebanyak RM52,805.66 kepada *Sustainable Energy Development Authority Malaysia* (SEDA) setelah diarahkan melalui surat bertarikh 2 Oktober 2020.

(ii). **Akaun Wang Khas MyPower:** bertujuan membiayai pelaksanaan inisiatif bagi projek di bawah RMKe-10 iaitu *Stabilization Mechanism, Ring Fencing Single Buyer, Fuel Supply and Security* dan *Industry Structure*.

(iii). **Akaun Wang Khas PR & PLL:** bagi membiayai Projek Retrofit dan Pemasangan Lampu LED di bangunan kementerian terpilih yang mula dilaksanakan pada awal tahun 2015.

(iv). **Akaun Wang Khas SAIDI 100:** bertujuan untuk mengkaji dan mengenal pasti isu-isu berkaitan bekalan elektrik di negeri Sabah bagi mencapai sasaran kerajaan untuk menurunkan tahap Sistem Purata Tempoh Gangguan (SAIDI) bekalan elektrik kepada pengguna menjelang tahun 2020. Pada 15 Julai 2020, ST telah membuat pemulangan baki hibah sebanyak RM14,414 kepada AAIBE.

11. YURAN DAN CAJ

	2020	2019
	RM	RM
Pelesenan Awam dan Persendirian	76,157,449	76,946,220
Pendaftaran/ Pembaharuan Fi Operasi	30,296,645	31,504,080
Lain-lain Fi Operasi	626,780	1,069,054
JUMLAH	**107,080,874**	**109,519,354**

Nota-nota kepada Penyata Kewangan...sambungan

12. GAJI, ELAUN DAN MANFAAT PEKERJA

	2020	2019
	RM	RM
Gaji dan Elaun Kakitangan	36,034,247	33,550,221
Elaun Anggota Suruhanjaya Tenaga	662,634	517,363
Sumbangan Berkanun	7,416,200	6,446,482
Faedah Kewangan Yang Lain	15,327,921	17,566,544
JUMLAH	**59,441,002**	**58,080,610**

Bilangan kakitangan Suruhanjaya Tenaga pada 31 Disember 2020 adalah seramai 357 orang. Manakala, bilangan kakitangan untuk tahun 2019 adalah seramai 340 orang. Termasuk di dalam Sumbangan Berkanun adalah sumbangan kepada Kumpulan Wang Simpanan Pekerja (KWSP) berjumlah RM7,134,237 (2019: RM6,176,464) dan sumbangan kepada PERKESO RM281,963 (2019: RM270,017).

13. PENYENGGARAAN

	2020	2019
	RM	RM
Penyenggaraan Sistem Aplikasi	4,299,846	4,761,715
Penyenggaraan Alatan, Kenderaan dan Bangunan Pejabat	1,935,221	1,737,175
JUMLAH	**6,235,067**	**6,498,890**

14. PERKHIDMATAN IKHTISAS

	2020	2019
	RM	RM
Fi Audit	47,488	53,820
Fi Profesional dan Konsultan	7,051,820	4,284,167
Pembangunan Kompetensi dan Pengurusan Prestasi	678,682	816,191
Perbelanjaan-perbelanjaan lain	438,195	1,080,381
JUMLAH	**8,216,185**	**6,234,559**

15. CUKAI

	2020	2019
	RM	RM
Perbelanjaan Cukai		
Tahun Semasa	4,105,545	4,341,377
Lebihan/Kurangan Peruntukan pada Tahun Terdahulu	–	–
Jumlah	**4,105,545**	**4,341,377**
Penyesuaian Kadar Cukai Efektif		
Lebihan Pendapatan Sebelum Cukai	37,757,868	42,666,347
Cukai pada Kadar 30%	11,327,360	11,946,577
Pendapatan yang Dikecualikan Cukai	(7,221,815)	(7,605,200)
Perbelanjaan Cukai	**4,105,545**	**4,341,377**

Suruhanjaya Tenaga telah mendapat pengecualian cukai pendapatan di bawah Seksyen 127(3)b Akta Cukai Pendapatan 1967 yang diberikan oleh Kementerian Kewangan pada 19 Oktober 2004. Pengecualian cukai tersebut diberikan hanya ke atas pendapatan berkanun yang berikut:

(i). Pendapatan yang diterima daripada Kerajaan Persekutuan atau Kerajaan Negeri dalam bentuk suatu pemberian atau subsidi;

(ii). Pendapatan yang diterima berkenaan dengan suatu amaun yang boleh dikenakan ke atas atau dipungut daripada mana-mana orang mengikut peruntukan Akta yang mengawal selia pihak berkuasa berkanun; dan

(iii). Derma atau sumbangan yang diterima.

16. PELARASAN DANA TERKUMPUL

Pelarasan bagi tahun 2020 adalah merupakan pelarasan ke atas perbelanjaan terakru yang disebabkan oleh perbezaan rekod transaksi pada tahun sebelum.

Nota-nota kepada Penyata Kewangan...sambungan

17. KESAN PEMAKAIAN MPSAS

	MPERS	Kesan MPSAS	Reklasifikasi	MPSAS
	RM	RM	RM	RM
Kesan ke atas Penyata Kedudukan Kewangan bagi tahun berakhir 31 Disember 2019				
Akaun Semasa				
Pelbagai Penghutang	682,542	–	(682,542)	–
Pelbagai Akaun Belum Terima, Deposit dan Pendahuluan	–	–	682,542	682,542
Liabiliti Semasa				
Pemiutang Lain dan Tanggungan Terakru	11,726,594	–	(11,726,594)	–
Pelbagai Akaun Belum Bayar dan Perbelanjaan Terakru	–	–	11,726,594	11,726,594
Kesan ke atas Penyata Prestasi Kewangan bagi tahun berakhir 31 Disember 2019				
Pendapatan				
Yuran dan Caj	109,519,354	–	(109,519,354)	–
Faedah	15,613,506	–	(15,613,506)	–
Pelbagai	1,511,741	–	(1,511,741)	–
Pendapatan				
Hasil Daripada Urus Niaga Bukan Pertukaran				
Yuran dan Caj	–	–	109,519,354	109,519,354
Hasil Daripada Urus Niaga Pertukaran				
Faedah	–	–	15,613,506	15,613,506
Lain-lain Pendapatan	–	–	1,511,741	1,511,741

17. KESAN PEMAKAIAN MPSAS...SAMBUNGAN

	MPERS	Kesan MPSAS	Reklasifikasi	MPSAS
	RM	RM	RM	RM
Kesan ke atas Penyata Prestasi Kewangan bagi tahun berakhir 31 Disember 2019...sambungan				
Perbelanjaan				
Kos Kakitangan	60,479,930	–	(60,479,930)	–
Kos Pentadbiran	19,351,812	–	(19,351,812)	–
Perbelanjaan				
Gaji, Elaun dan Manfaat Pekerja	–	–	58,080,610	58,080,610
Perjalanan dan Sara Hidup	–	–	2,399,320	2,399,320
Perhubungan dan Utiliti	–	–	2,425,461	2,425,461
Sewaan	–	–	2,579,010	2,579,010
Hospitaliti	–	–	383,140	383,140
Bekalan Pejabat	–	–	1,230,752	1,230,752
Penyenggaraan	–	–	6,498,890	6,498,890
Perkhidmatan Ikhtisas	–	–	6,234,559	6,234,559
Kesan ke atas Penyata Aliran Tunai bagi tahun berakhir 31 Disember 2019				
Pelarasan Penyata Dana Terkumpul	42,795	–	(42,795)	–
Peningkatan di dalam Pelbagai Akaun Belum Bayar dan Tanggungan Terakru	–	–	42,795	1,580,255

Nota-nota kepada Penyata Kewangan...sambungan

18. MAKLUMAT BAJET

Bajet Suruhanjaya Tenaga diluluskan oleh Kementerian Tenaga dan Sumber Asli untuk meliputi tempoh fiskal bermula dari 1 Januari 2020 hingga 31 Disember 2020.

Berikut adalah perbezaan material di antara amaun Bajet Akhir dan Sebenar pada tahun 2020:

PERIHAL	Sebenar 2020	Bajet Akhir	Perbezaan
	RM	RM	RM
HASIL			
Hasil Operasi	107,080,874	112,596,800	(5,515,926)
PERBELANJAAN			
Perjalanan dan Sara Hidup	795,472	4,000,000	3,204,528
Penyenggaraan	5,876,226	9,354,897	3,478,671
Perkhidmatan Ikhtisas	9,312,526	22,505,462	13,192,936

Pandemik COVID-19 yang melanda negara pada tahun 2020 secara tidak langsung memberi kesan kepada kutipan hasil dan perbelanjaan tahun 2020.

Pelaksanaan Perintah Kawalan Pergerakan telah membataskan kerja-kerja pengawalseliaan khususnya aktiviti penguatkuasaan di premis pelesen-pelesen dan menjejaskan prestasi kutipan hasil dan perbelanjaan bagi Perjalanan dan Sara Hidup.

Kerja-kerja penyenggaraan sistem penukar haba, pembaikan lantai laluan tempat letak kenderaan, mencuci fasad dan pembaikan jubin granit di bangunan Ibu Pejabat yang ditangguhkan menyebabkan pengurangan perbelanjaan Penyenggaraan tahun 2020.

Perbezaan material bagi Perkhidmatan Ikhtisas adalah kerana banyak pengurusan acara yang besar seperti majlis hari raya, hari keluarga, seminar, dialog, bengkel dan program lain tidak dapat dilaksanakan kerana Pandemik COVID-19. Di samping itu, terdapat beberapa projek pembangunan yang belum selesai dilaksanakan dan direkodkan sebagai Komitmen bagi pakar runding yang telah dilantik pada tahun 2020.

19. KOMITMEN

	2020	2019
	RM	RM
Hartanah, Kelengkapan dan Peralatan	530,811	99,601
Perkhidmatan Ikhtisas	6,421,373	5,595,795
Bekalan Pejabat dan Penyenggaraan	2,486,228	1,008,712
Emolumen	-	90,083
JUMLAH	**9,438,412**	**6,794,191**

Komitmen bagi tahun berakhir 31 Disember 2020 di bawah Hartanah, Kelengkapan dan Peralatan berjumlah RM530,811 adalah merupakan kos ubah suai ruang pejabat di dalam bangunan Ibu Pejabat dan Pejabat Suruhanjaya Tenaga Negeri Pulau Pinang, Kedah dan Perlis serta perolehan aset-aset lain termasuk kelengkapan perabot dan peralatan elektronik. Kos bagi mendapatkan perkhidmatan pakar runding dan konsultansi di bawah Perkhidmatan Ikhtisas adalah berjumlah RM6,421,373.

Komitmen untuk Penyenggaraan bagi menaik taraf sistem, menyenggara sistem rangkaian ICT, khidmat sokongan dan penyenggaraan bangunan adalah berjumlah RM1,984,179 manakala kos Bekalan Pejabat berjumlah RM502,049.

Jumlah Komitmen bagi tahun 2019 sebanyak RM6,794,191 meliputi kos berkaitan Hartanah, Kelengkapan dan Peralatan, Perkhidmatan Ikhtisas, Penyenggaraan dan Bekalan Pejabat, serta Emolumen.

Nota-nota kepada Penyata Kewangan...sambungan

20.LIABILITI LUAR JANGKA

Suatu tindakan sivil telah difailkan di Mahkamah Tinggi Shah Alam terhadap Suruhanjaya Tenaga ("ST") oleh syarikat NMH Engineering Services Sdn Bhd ("NMH") pada 26.12.2018 dan menuntut supaya ST menarik balik surat pembatalan perakuan-Perakuan pendaftaran yang dikeluarkan kepada 50 pemilik-pemilik pepasangan elektrik dan menuntut ganti rugi akibat kerugian pembatalan kontrak berjumlah sebanyak RM9,317,400.00 dan bayaran gaji pekerja yang ditanggung NMH selama 3 bulan berjumlah RM540,075.43. NMH juga menuntut ganti rugi am akibat kehilangan punca pendapatan akibat pembatalan perakuan-perakuan tersebut yang akan ditentukan oleh Mahkamah.

Pada tahun 2019, suatu tindakan sivil telah difailkan di Mahkamah Tinggi Shah Alam terhadap ST oleh syarikat NMH pada 16.10.2019 untuk deklarasi bahawa pembatalan perakuan-perakuan pendaftaran NMH oleh ST pada 18.01.2019 adalah tidak sah dan menuntut sebanyak RM1,290,000.00 bagi kerugian akibat pembatalan tersebut, ganti rugi am, faedah 5% setahun daripada jumlah gantirugi yang diperintahkan oleh Mahkamah dari tarikh penghakiman sehingga penyelesaian penuh dan kos atas dasar indemniti.

Sementara itu, pada tahun 2020 satu tindakan sivil difailkan di Mahkamah Tinggi Kuala Lumpur terhadap ST oleh Strong Elegance Sdn Bhd ("SE") pada 18.12.2020 untuk deklarasi bahawa penarikan balik surat Award bertarikh 02.05.2017 oleh ST adalah tidak sah dan menuntut ganti rugi bagi semua kos dan perbelanjaan yang ditanggung oleh SE akibat penarikan balik surat Award tersebut termasuk ganti rugi umum dan ganti rugi teladan untuk dinilai oleh Mahkamah.

FINANCIAL STATEMENTS

CERTIFICATE OF THE AUDITOR GENERAL
ON THE FINANCIAL STATEMENTS OF
ENERGY COMMISSION
FOR THE YEAR ENDED 31 DECEMBER 2020

Certificate on the Audit of the Financial Statements

Opinion

I have empowered a private audit firm to undertake an audit of the Financial Statements of Energy Commission. The financial statements comprise the Statement of Financial Position as at 31 December 2020 of the Energy Commission and the Statement of Financial Performance, Statement of Changes in Net Assets, Statement of Cash Flows and Statement of Budget Performance for the year then ended, and notes to the financial statements, including a summary of significant accounting policies, as set out on pages 1 to 31.

In my opinion, the accompanying financial statements give a true and fair view of the financial position of the Energy Commission as at 31 December 2020, and of its financial performance and its cash flows for the year then ended in accordance with the Malaysian Public Sector Accounting Standards (MPSAS, Energy Commission Act 2001 (Act 610) and Energy Commission (Amendment) Act 2010 (Act A1371) requirements.

Basis for Opinion

The audit was conducted in accordance with the Audit Act 1957 and the International Standards of Supreme Audit Institutions. My responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of my certificate. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Independence and Other Ethical Responsibilities

I am independent of the Energy Commission and I have fulfilled our other ethical responsibilities in accordance with the International Standards of Supreme Audit Institutions.

Information Other than the Financial Statements and Auditor's Certificate Thereon

The Members of the Energy Commission are responsible for the other information in the Annual Report. My opinion on the Financial Statements of the Energy Commission does not cover the other information than the Financial Statements and Auditor's Certificate thereon and I do not express any form of assurance conclusion thereon.

Responsibilities of the Members of the Energy Commission for the Financial Statements

The Members of the Energy Commission are responsible for the preparation of Financial Statements of the Energy Commission that give a true and fair view in accordance with Malaysian Public Sector Accounting Standards (MPSAS), Energy Commission Act 2001 (Act 610) and Energy Commission (Amendment) Act 2010 (Act A1371). The Members of the Energy Commission are also responsible for such internal control as it is necessary to enable the preparation of the Financial Statements of the Energy Commission that are free from material misstatement, whether due to fraud or error.

In preparing the Financial Statements of the Energy Commission, the Members of the Energy Commission are responsible for assessing the Energy Commission's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting.

Auditor's Responsibilities for the Audit of the Financial Statements

My objectives are to obtain reasonable assurance about whether the Financial Statements of the Energy Commission as a whole are free from material misstatement, whether due to fraud or error, and to issue an Auditor's Certificate that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the International Standards of Supreme Audit Institutions will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with the International Standards of Supreme Audit Institutions, I exercise professional judgement and maintain professional scepticism throughout the audit. I also:

a. Identify and assess the risks of material misstatement of the Financial Statements of the Energy Commission, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

b. Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Energy Commission's internal control.

c. Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Members of the Energy Commission.

d. Conclude on the appropriateness of the Members of the Energy Commission's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on of the Energy Commission's ability to continue as a going concern. If I conclude that a material uncertainty exists, I have to draw attention in my Auditor's Certificate to the related disclosures in the Financial Statements of the Energy Commission or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of Auditor's Certificate.

e. Evaluate the overall presentation of the Financial Statements of the Energy Commission, including the disclosures, and whether the Financial Statements of the Energy Commission represents the underlying transactions and events in a manner that achieves fair presentation.

Other Matters

a. As stated in Note 2 to the financial statements, Energy Commission adopted Malaysian Public Sector Accounting Standards (MPSAS) on 1 January 2020 and 1 January 2019, with a transition date of 1 January 2019. These standards were applied retrospectively by the Members of the Energy Commission to the comparative information in these financial statements, including the Statement of Financial Position of the Energy Commission as at 31 December 2019 and the Statement of Financial Performance, Statement of Changes in Net Assets, Statement of Cash Flows and Statement of Budget Performance of the Energy Commission for the year then ended 31 December 2019 and related disclosures. I was not engaged to report on the restated comparative information and it is unaudited. My responsibilities as part of my audit of the Financial Statements of the Energy Commission for the year then ended 31 December 2020, in these circumstances, included obtaining sufficient appropriate audit evidence that the opening balances as at 1 January 2020 do not contain misstatements that materially affect the financial position as at 31 December 2020 and the financial performance and cash flows for the year then ended.

b. This Certificate is made solely to the Members of the Energy Commission in accordance with Energy Commission Act 2001 (Act 610) and Energy Commission (Amendment) Act 2010 (Act A1371) requirements and for no other purpose. I do not assume responsibility to any other person for the content of this Certificate.

(FARIZAH BINTI BERAM)
ON BEHALF OF AUDITOR GENERAL

PUTRAJAYA
27 AUGUST 2021

STATEMENT BY CHAIRMAN AND A MEMBER OF THE ENERGY COMMISSION

We Dato' Azian bin Osman and Dato' Ir. Dr. Shaik Hussein bin Mydin being the Chairman and one of the Members of the Energy Commission hereby declare, that in the opinion of the Energy Commission Members, the Financial Statements comprising the Statement of Financial Position, Statement of Financial Performance, Statement of Changes in Net Assets, Statement of Cash Flows, Statement of Budget Performance of the Energy Commission and the notes on the Financial Statements have been prepared so as to give a true and fair view of the state of affairs of the Energy Commission as at 31 December 2020 and of its results and changes in the financial position for the year ended on that date.

On behalf of the Commission Members,

.....

Dato' Azian bin Osman
Chairman

Date: 26 August 2021

Place: Energy Commission
Precinct 2, Putrajaya

On behalf of the Commission Members,

.....

Dato' Ir. Dr. Shaik Hussein bin Mydin
Member

Date: 26 August 2021

Place: Energy Commission
Precinct 2, Putrajaya

DECLARATION OF OFFICER PRIMARILY RESPONSIBLE FOR THE FINANCIAL MANAGEMENT OF THE ENERGY COMMISSION

I, Abdul Razib bin Dawood, Chief Executive Officer responsible for the financial management and accounting records of the Energy Commission, solemnly declare that the Statement of Financial Position, Statement of Financial Performance, Statement of Changes in Net Assets, Statement of Cash Flows and the Statement of Budget Performance of the Energy Commission in the following financial position and the notes on the Financial Statements, are, to the best of my knowledge and belief, correct, and that I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of the Statutory Declaration Act 1960.

Subscribed and solemnly declared)
by the above-named)
at ..... BANDAR BARU BANGI)
SELANGOR
on .....)
26 AUG 2021

.....

Before me,

PESURUHJAYA SUMPAH
NO. B509
HAJI KASSIM BIN LEMAN
1.1.2021-31.12.2022
MALAYSIA

C-1-2, Bangi Gateway,
Persiaran Peluliing,
43650 Bandar Baru Bangi,
Selangor.

.....

COMMISSIONER OF OATH

STATEMENT OF FINANCIAL POSITION
As At 31 December 2020

	Note	2020 RM	2019 RM
ASSETS			
Current Assets			
Cash and Cash Equivalents	4	103,237,329	117,935,916
Short Term Investment		398,228,632	340,196,087
Other Receivables, Deposit and Advance	5	677,286	682,542
Accrued Interest Income	6	2,142,746	5,425,199
Total Current Assets		504,285,993	464,239,744
Non-Current Assets			
Property, Fittings and Equipment	7	78,835,634	80,788,479
Total Assets		**583,121,627**	**545,028,223**
LIABILITIES			
Current Liabilities			
Other Payables and Accrued Expenses	8	15,507,437	11,726,594
Provision for Short Term Employee Benefits	9	3,040,732	2,917,578
Special Funds	10	5,747,479	6,357,303
Tax Provisions		4,105,545	4,341,377
Total Current Liabilities		28,401,192	25,342,852
Non-Current Liabilities			
Provision for Long Term Employee Benefits	9	14,041,195	13,048,058
Total Liabilities		**42,442,387**	**38,390,910**
Net Assets		**540,679,240**	**506,637,313**
NET ASSETS/EQUITIES			
Retained Profits		**540,679,240**	**506,637,313**

The attached notes from pages 6 to 31 are an integral part of this Financial Statement.

STATEMENT OF FINANCIAL PERFORMANCE
For The Year Ended 31 December 2020

	Note	2020 RM	2019 RM
INCOME			
Income from Non-Exchangeable Transactions			
Fees and Charges	11	107,080,874	109,519,354
Income from Exchangeable Transactions			
Interests		13,947,835	15,613,506
Other Income		1,032,506	1,511,741
		122,061,215	126,644,601
EXPENSES			
Wages, Allowances and Employee Benefits	12	59,441,002	58,080,610
Travelling and Subsistence Allowances		795,472	2,399,320
Communications and Utilities		2,395,658	2,425,461
Rental		2,578,870	2,579,010
Hospitalities		385,673	383,140
Office Supplies		847,502	1,230,752
Maintenance	13	6,235,067	6,498,890
Professional Services	14	8,216,185	6,234,559
Depreciation of Property, Fittings and Equipment		2,967,062	3,288,370
Other Expenses		440,856	858,142
		(84,303,347)	(83,978,254)
Profit Before Tax		37,757,868	42,666,347
Taxation Expense	15	(4,105,545)	(4,341,377)
Profit for The Year		33,652,323	38,324,970

The attached notes from pages 6 to 31 are an integral part of this Financial Statement.

STATEMENT OF CHANGES IN NET ASSETS
For The Year Ended 31 December 2020

	Note	Total RM
2019		
Balance as at 1 January		468,269,548
Prior year adjustment	16	42,795
Surplus for the year		38,324,970
Balance as at 31 December		506,637,313
2020		
Balance as at 1 January		506,637,313
Prior year adjustment	16	389,604
Surplus for the year		33,652,323
Balance as at 31 December		540,679,240

The attached notes from pages 6 to 31 are an integral part of this Financial Statement.

STATEMENT OF CASH FLOWS
For The Year Ended 31 December 2020

	Note	2020 RM	2019 RM
CASH FLOWS FROM OPERATING ACTIVITIES			
Surplus of Income Before Tax		37,757,868	42,666,347
Adjustments for Non-Cash Items:			
Income from Interest Received		(13,947,835)	(15,613,506)
Depreciation of Property, Fittings and Equipment		2,967,062	3,288,370
Disposal of Property, Fittings and Equipment		540	577
Provisions for Employee Benefits		3,481,646	8,080,860
Operating Surplus Before Changes in Working Capital		30,259,281	38,422,648
Changes in Working Capital and Special Funds:			
Increase/(Decrease) in Other Receivables and Accrued Interest Income		3,287,709	(1,603,826)
Increase in Other Payables and Accrued Liabilities		4,170,447	1,580,255
Bank Interest from Special Funds		64,814	64,148
Transfer of Special Funds		(595,276)	(152,030)
Expenditure of Special Funds		(79,362)	(39,251)
Cash Flows from Operating Activities		37,107,613	38,271,944
Tax Paid		(4,341,377)	(3,877,390)
Payment for Employee Benefits		(2,365,356)	(2,229,504)
Net Cash Generated from Operating Activities		**30,400,880**	**32,165,050**
CASH FLOWS FROM INVESTING ACTIVITIES			
Short Term Investment		(58,032,545)	(50,441,868)
Purchase of Property, Fittings and Equipment		(1,014,757)	(1,774,262)
Interest Income Received		13,947,835	15,613,506
Net Cash (Used In) Investing Activities		**(45,099,467)**	**(36,602,624)**
Net Decrease in Cash and Cash Equivalents		(14,698,587)	(4,437,574)
Cash and Cash Equivalents at The Beginning of The Year		**117,935,916**	**122,373,490**
Cash and Cash Equivalents at The End of The Year	4	**103,237,329**	**117,935,916**

The attached notes from pages 6 to 31 are an integral part of this Financial Statement.

STATEMENT OF BUDGET PERFORMANCE
For The Year Ended 31 December 2020

Actual 2019	DETAILS	Actual 2020	Final Budget	Original Budget	Differences between Final Budget and Actual
RM		RM	RM	RM	RM
	INCOME				
109,519,354	Income from Operation	107,080,874	112,596,800	112,596,800	(5,515,926)
17,125,247	Interests Income, Profits from *Hibah* and other Income	14,980,341	14,236,900	14,236,900	743,441
126,644,601	**Total Income**	**122,061,215**	**126,833,700**	**126,833,700**	**(4,772,485)**

Actual 2019	DETAILS	Actual 2020	Final Budget	Original Budget	Differences between Final Budget and Actual
RM		RM	RM	RM	RM
	EXPENDITURE				
52,758,014	Emolument	59,441,002	60,930,104	60,930,104	1,489,102
2,399,320	Travelling and Subsistence Allowances	795,472	4,000,000	4,000,000	3,204,528
2,425,461	Communications and Utilities	2,395,658	2,672,379	2,662,379	276,721
2,579,010	Rental	2,578,870	3,205,353	3,205,353	626,483
383,139	Hospitality	385,673	676,178	676,178	290,505
1,138,884	Office Supplies	847,502	1,700,231	1,650,531	852,729
6,133,654	Maintenance	5,876,226	9,354,897	9,364,897	3,478,671
9,891,072	Professional Services	9,312,526	22,505,462	22,555,162	13,192,936
358,142	Other Expenses	440,856	900,000	900,000	459,144
1,274,415	Assets	915,156	1,935,000	1,935,000	1,019,844
79,341,111	**Total Expenses**	**82,988,941**	**107,879,604**	**107,879,604**	**24,890,663**
47,303,490	**Surplus**	**39,072,274**	**18,954,096**	**18,954,096**	**(29,663,148)**

The attached notes from pages 6 to 31 are an integral part of this Financial Statement.

Notes on the Financial Statements

1. PRINCIPAL ACTIVITIES

The Energy Commission is a statutory body operating at No. 12, Jalan Tun Hussein, Presint 2, 62100 Putrajaya.

The Energy Commission is the sole regulatory agency for the energy sector's regulation and development. Under the Energy Commission Act 2001 (Act 610) and Energy Commission (Amendment) Act 2010 (Act A1371), the Energy Commission is directly responsible to supervise and monitor the energy generation activities, including regulating each licensed individuals.

The Financial Statements were approved and certified for signature by the Energy Commission on 26 August 2021.

2. BASIS OF PREPARATION OF FINANCIAL STATEMENTS

The Energy Commission's Financial Statements were prepared in compliance with the Malaysian Public Sector Accounting Standards (MPSAS), which was previously prepared based on the Malaysian Private Entities Reporting Standards (MPERS). The Financial Statements were prepared based on the historical cost convention and generally accepted accounting practices in Malaysia. MPSAS 33 allows first-time adopters to recognize and measure certain Assets and Liabilities within the period of one (1) to three (3) years.

Early Adoption of MPSAS:
The Energy Commission adopted the following MPSAS beginning 1 January 2020 with a transition date of 1 January 2019:

MPSAS 1: Presentation of Financial Statements
MPSAS 2: Cash Flow Statements
MPSAS 3: Accounting Policies, Changes in Accounting Estimates and Errors
MPSAS 4: The Effect of Changes in Foreign Exchange Rates
MPSAS 9: Revenue From Exchange Transactions
MPSAS 14: Events After The Reporting Date
MPSAS 17: Property, Plant and Equipment
MPSAS 19: Provisions, Contingent Liabilities and Contingent Assets
MPSAS 20: Related Party Disclosure
MPSAS 21: Impairment of Non-Cash-Generating Assets
MPSAS 22: Disclosure of Financial Information
MPSAS 23: Revenue From Non-Exchange Transactions (Taxes & Transfers)

2. BASIS OF PREPARATION OF FINANCIAL STATEMENTS...CONTINUED

MPSAS 24: Presentation of Budget Information in Financial Statements
MPSAS 25: Employee Benefits
MPSAS 26: Impairment of Cash - Generating Assets
MPSAS 28: Financial Instruments - Presentation
MPSAS 29: Financial Instruments - Recognition and Measurement
MPSAS 30: Financial Instruments - Disclosure
MPSAS 33: First-Time Adoption of Accrual Basis MPSAS

The preparation of the Financial Statements requires management to make judgments, estimates and assumptions that affect the application of accounting policies and to report the amounts of assets, liabilities, income and expenses. Although judgments, estimates and assumptions are based on the best current knowledge and actions of the management, actual results may vary. Estimates and assumptions are reviewed on a continuous basis. A revised accounting estimates is recognized in the period in which the estimates is revised, and in any relevant future period.

3. ACCOUNTING POLICIES

(I). Property, Fittings and Equipment

Property, Fittings and Equipment are stated at cost less accumulated depreciation and impairment, if any.

Depreciation for property, fittings and equipment are calculated based on the straight line method over the estimated useful life span of the assets.

The annual depreciation rates are as follows:

Buildings	2%
Motor vehicles	20%
Furniture, equipment, renovations and enforcement instrumentation	20%
Office equipment (electronics)	15%
Application systems and computers	33 1/3%
Fixtures and equipment	20%

Freehold land is measured at cost and not depreciated.

Notes on the Financial Statements...continued

3. ACCOUNTING POLICIES...CONTINUED

(I). Property, Fittings and Equipment...continued

The residual value, useful lives and rate of depreciation are reviewed at the end of each financial year to ensure that the amounts, methods and year of depreciation are in line with previous estimates and expected economic benefits of utilising the property and equipment.

(II). Financial Asset

Financial Asset is recognised in Statement of Financial Position when the Commission become a party to the contractual provisions of the instrument.

On initial recognition, financial assets are measured at fair value, plus transaction costs for financial assets not at 'fair value through profit or loss'.

After initial recognition, financial assets are classified into one of four categories: financial assets at 'fair value through profit or loss', 'held-to-maturity' investments, loans and receivables and 'available-for-sale' financial assets. The Commission did not have any financial assets other than loans and receivables.

Regular purchases and sales of financial assets are recognised on the trade-date, the date on which Commission commits to purchase or sell the asset.

Financial Asset Categories by the Commission are as below:

(a). Loans and Receivables

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market.

After initial recognition, loans and receivables are measured at amortised cost using the effective interest method less any accumulated impairment losses. Gains or losses are recognised in profit or loss when loans and receivables are derecognised or impaired.

Loans and Receivables are classified as current assets except Loans and Receivables which the maturity date is more than 12 months after the reporting date which are classified as non-current assets.

3. ACCOUNTING POLICIES...CONTINUED

(II). Financial Asset...continued

(b). Financial Asset on Fair Value Through Surplus or Deficit

For any embedded derivatives that cannot be valued reliably separately either on the acquisition date or at the end date of the next reporting period, the entire instrument is designated at Fair Value Through Surplus or Deficit. However, if the entire instrument cannot be measured reliably, the instrument is stated at cost less impairment.

Investments in equity instruments which fair value cannot be measured reliably are stated at cost less impairment losses.

(c). Investment Held Until Maturity

Non-derivative Financial Assets with a fixed or determinable payment maturity period and remain classified as held to maturity when the Commission has the positive intent and ability to hold until maturity. After initial measurement, held-to-maturity investments are measured at amortized cost using the effective interest method and less impairment. Amortization cost is calculated by taking into account any discounts or premiums on acquisition and fees or costs that form part of the effective interest rate. Losses arising from impairment are recognized in the Statement of Financial Performance.

The Commission will derecognise a Financial Asset or, if applicable, part of a Financial Asset or part of a group of Financial Assets when:

(i). The right to receive cash flows from assets has expired or is excluded;

(ii). The Commission has transferred its right to receive cash flows from assets or has accepted an obligation to pay the cash flows received in full without material delay to a third party; and whether: (i) the Commission has transferred substantially all the risks and rewards of the assets; or (ii) the Commission has not transferred or retained substantially all the risks and rewards of the asset, but has transferred control of the asset.

Notes on the Financial Statements...continued

3. ACCOUNTING POLICIES...CONTINUED

(II). Financial Asset...continued

(c). Investment Held Until Maturity...continued

Any difference between the carrying amount of the derecognised Financial Asset and the consideration received is recognized in the Statement of Financial Performance in the period of derecognition. For Financial Assets available for sale, all gains or losses previously recognized in the Statement of Changes in Net Assets will be recognized in the Statement of Financial Performance.

(d). Available-for-Sale Financial Asset

Available-for-Sale Financial Asset is a Financial Asset that is designated as available for sale or is not classified in any other Financial Asset category. Subsequent to original recognition, available -for -sale Financial Assets are stated at fair value. Gains or losses on changes in the fair value of such Financial Assets are recognized through the Statement of Changes in Net Assets, except for impairment losses, gains and losses on foreign exchange upon financial instruments and interest calculated under the effective interest method.

Investments in equity instruments where fair value cannot be measured reliably are stated at cost less impairment losses.

(III). Financial Liabilities

Financial Liabilities are recognized in the Statement of Financial Position when the Commission becomes a party to the contractual provisions of the instrument.

On initial recognition, financial liabilities are measured at fair value, less transaction costs for financial liabilities not at 'fair value through profit or loss'.

Subsequent to initial recognition, Financial Liabilities are classified into one of two categories of Financial Liabilities which are Financial Liabilities measured at fair value through surplus or deficit, Loans and Receivables.

3. ACCOUNTING POLICIES...CONTINUED

(III). Financial Liabilities...continued

The Commission has the following Financial Liability categories:

Loans and Receivables

Subsequent to initial recognition, Loans and Receivables are measured at amortized cost using the effective interest method. Gains or losses are recognized in surplus or deficit when the Financial Liability is derecognised or impaired.

Financial Liabilities are derecognised when the obligations specified in the contract are discharged, cancelled or expired.

Any difference between the carrying amount of the derecognised Financial Liability and the consideration paid is recognized in surplus or deficit in the period of derecognition.

(IV). Critical Accounting Judgements and Uncertainty in the Primary Sources of Estimates

There are no critical accounting judgments and uncertainties in the primary sources of estimates used in preparing the Commission's Financial Statements that have a material effect on reported amounts other than those set out below:

(a). Impairment Receivables Allowances

The Commission assesses at each reporting date whether there is any objective evidence that Financial Assets are impaired. To determine whether there is objective evidence of impairment, the Commission considers factors such as insolvency of the debtor and default or significant late payment. If there is evidence of potential insolvency debt, the amount and timing of future cash flows are estimated based on historical loss experience for assets with similar credit risk characteristics.

(b). Changes in Estimated Lifespan of Property, Fittings and Equipment

All Property, Plant and Equipment are depreciated on a straight -line basis over the life span of the asset. Changes in estimated patterns of asset utilization and technological development can affect the useful life and residual value of those assets. This will cause the depreciation of assets in the future to be reviewed.

Notes on the Financial Statements...continued

3. ACCOUNTING POLICIES...CONTINUED

(IV). Critical Accounting Judgements and Uncertainty in the Primary Sources of Estimates ...continued

(c). Allocation Measurement

The Commission always uses the best estimate as the basis for measuring a provision. The estimate is made based on past experience, other indications or assumptions, recent developments and reasonable future events in determining a provision.

(V). Impairment of Non-Financial Asset

(a). Impairment of Cash Generating Asset Value

At each date of Statement of Financial Position, the Commission reviews the carrying amounts of its assets to determine whether there is any indication of impairment. If any indication exists, impairment is calculated by comparing the asset's carrying amount with its recoverable amount. Recoverable amount is the highest of fair value less costs to sell and value in use.

In determining value in use future cash flows will be discounted to their present value using a pre -tax discount rate that reflects the current market value of the time value of money and the risks specific to the asset. In determining fair value less costs to sell, the latest market transactions will be taken into account, if any. If no recent market transactions occur, an appropriate valuation model should be used.

An impairment loss is recognized as an expense in the Statement of Financial Performance immediately when the carrying amount of the asset exceeds its recoverable amount.

Impairment losses recognized in prior periods for an asset are reversed if, and only if, there is a change in the estimates used to determine the recoverable amount. The reversal is recognized in the Statement of Financial Performance.

3. ACCOUNTING POLICIES...CONTINUED

(V). Impairment of Non-Financial Asset...continued

(b). Impairment of non-cash-generating assets

The Commission will assess at each reporting date, whether there is any indication that Non-Cash Generating Assets may be impared. If any indication exists, then the Commission will make an estimate of the amount of the asset's recoverable service. The asset's recoverable service amount is the highest amount of fair value less selling costs and value in use.

An impairment loss is recognized as an expense in the Statement of Financial Performance, immediately when the value of the asset exceeds its recoverable amount.

In determining value in use, the Commission has adopted the depreciated replacement cost approach. In this approach, the present value of the asset's remaining service potential is determined as the replacement cost of the depreciated asset. Depreciated replacement cost is measured by taking into account the asset's replacement cost less accumulated depreciation calculated on that cost to reflect the service potential of the asset that has been used or has expired.

In determining the fair value less costs to sell, the price of the asset in the binding agreement is adjusted to determine the disposal price of the asset. If there is no binding agreement, but the asset is actively traded in the market, then the fair value less costs to sell is determined by reference to current market value less costs to dispose of. In the absence of a binding sale agreement or active market for the asset, the Board determines the fair value less costs to sell based on the best available information.

For each asset, an assessment is made at each reporting date as to whether there is any indication that a previously recognized impairment loss may no longer exist or has decreased. If such an indication exists, the Commission estimates the amount of the asset's recoverable service. A previously recognized impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount of service since the last impairment loss was recognized. Reversals are limited to the extent that the carrying amount of the asset does not exceed the recoverable amount of service or does not exceed the carrying amount that would have been possible after accumulated depreciation as no impairment loss was recognized for the asset in the previous year. The reversal is recognized in the Statement of Financial Performance.

Notes on the Financial Statements...continued

3. ACCOUNTING POLICIES...CONTINUED

(VI). Cash and Cash Equivalents

Cash and Cash Equivalents consists of cash in hand and bank balances, deposits in banks and other financial institutions, and also high liquidity short term investments with a maturity period of three (3) months or less from the date of purchase and can be readily redeemed in the form of cash and with low risks of value flunctuations.

The Cash Flow Statements are prepared using the indirect method.

(VII). Short Term Investments

Short Term Investments are deposits in bank and other financial institutions, and also short term investments with high liquidity with maturity periods of three (3) months or up to a year from the date of purchase and which can be readily redeemed in the form of cash with low risks of value fluctuation.

(VIII). Special Funds

Special Funds are provisions received from the Electricity Supply Industry Trust Fund (AAIBE) under the Ministry of Energy, Green Technology and Water (KeTTHA), which is currently administered by the Ministry of Energy and Natural Resources (KeTSA), and Government agencies for specific purposes.

(IX). Impairment

The carrying value of the Commission's assets and financial assets are reviewed at each date of the balance sheet to determine whether there have been indications of impairment. If any such indication exists, the recoverable amount will be estimated. An impairment loss will be recognised in the income statement except when the carrying value of the asset has been re-valued and charged to reserves. An impairment loss is recognised whenever the value in use for the asset or assets owned by the income generating unit exceeds its recoverable amount.

3. ACCOUNTING POLICIES...CONTINUED

(IX). Impairment...continued

Recoverable amount is the higher difference between the asset's net selling price and value in use. In assessing value in use, which is measured by reference to the discounted future cash flow using pre-tax discount rate that reflects the current market assessment of the cash value and risks on the asset. For an asset that does not generate large cash flows by itself, the recoverable amout is determined by the cash-generating unit to which it belongs.

For other assets, an impairment loss is reversed when there has been a change in the estimates used to determine recoverable amount.

The impairment loss is reversed to the extent of the carrying amount of the asset that would have been determined (net of depreciation) had no impairment loss been recognised. A reversal of an impairment loss is credited to the income statement but in the case of reversal on a revalued asset, it is credited to equity.

(X). Taxation

Current tax is the taxation charged on the income surplus or deficit for the year. Current tax is the expected amount payable on taxable income for the year and is measured using rates applicable on the date of the Balance Sheet.

Current tax expenses are the expected tax payable on the taxable income for the year, using tax rates gazetted or substantially gazetted at the balance sheet date, and any adjustments to tax payable in respect of the previous year.

Provisions for deferred tax is made, by the liability method, for all timing differences between tax rates of assets and liabilities and their carrying amount in the financial statements. Temporary differences are not recognised for goodwill, is not deductible for taxation purposes, and the initial recognition of an asset or liability at the time of the transaction does not affect the statutory income surplus and taxable income surplus. The total provision for deferred tax is based on the expected manner of realisation or settlement of the carrying amount of the assets and liabilities, using tax rates gazetted or substantially gazetted on the date of the balance sheet.

Notes on the Financial Statements...continued

3. ACCOUNTING POLICIES...CONTINUED

(X). Taxation...continued

Deferred tax assets are recognised only when it is probable that taxable income surplus can be derived in the future from the assets used.

(XI). Employee Benefits

(a). Short Term Employee Benefits

Wages, salaries and bonuses are recognised as expenses in the current year services performed by employees of the Energy Commission. Short term accumulated compensations such as paid annual leave are recognised when employees render services that increase their entitlement for paid leave in the future, and short term non-accumulative compensations such as paid sick leave are only recognised when such leave of absence occur. Medical facilities such as outpatient treatment facilities, hospitalisation scheme and group surgery facilities and maternity facilities are provided to all permanent and contract personnel based on the provisions set out in the terms and conditions of the Energy Commission's service in force.

Meanwhile, employee benefits such as gratuity and subsidised pension benefits for mortgages, vehicles and personal loans payable in the next financial year will be recognised on an accrual basis in the current Statement of Income as an expense and in the Balance Sheet as Current Liabilities.

(b). Compulsory Contribution Plan

The law requires qualified Malaysian employers to make compulsory contributions to the Employees Provident Fund and Social Security Organisation (SOCSO). The contributions are recognised as expenses in the income statement. Liabilities for the compulsory contribution plans are recognised as current expenses in the income statement.

3. ACCOUNTING POLICIES...CONTINUED

(XI). Employee Benefits...continued

(c). Long-Term Employee Benefits

Long-Term Employee Benefits are the provision of retirement benefits in the form of gratuities to the permanent staff serving for a minimum of ten years with the gratuity calculation rate as per approved by the YB Minister. It is considered as an employee's benefit payment; paid upon retirement and is recognised as expenses and is stipulated as Non-Current Liabilities in the Balance Sheet. Recognition is by the use of actuarial valuation methods.

(XII). Recognition of Income and Expenditure

Income from fees and charges are accounted for on a cash basis as the annual payment obligation is on the licensees. In addition, interest income from fixed deposits and short-term investments as well as all expenses are accounted for on an accrual basis. Other income consists of sales of tender documents, sales of industry-related books, fixed asset sales and charges/penalties imposed on failure to execute projects. Other operating costs include entertainment expenses in relation to the Energy Commission's official affairs by authorised officers as well as contributions or sponsorships made for researches and developments.

(XIII). Related Party Disclosures

The parties deemed to be related if one party has the ability to control the other party or exercise influence over another party, to the extent that it prevents others from pursuing separate personal interests in making financial and operating decisions.

(XIV). Provisions

Provisions are recognized when the Energy Commission has a legal current and constructive obligation, the effects of past events and a possible outflow of resources involving economic benefits is required to settle the obligation, and the amount of the obligation can be estimated with certainty.

Notes on the Financial Statements...continued

3. ACCOUNTING POLICIES...CONTINUED

(XIV). Provisions...continued

Provisions are reviewed at each reporting date and adjusted to reflect the best current estimate. If there is no possibility that an outflow of economic resources will be required to settle the obligation, the provision will be reversed. If the effect of time value of money is significant, the provision will be discounted using the current pre-tax rate which reflects, where appropriate, the risks specific to the liability. Whenever discounting is used, the increase in provisions caused by time-pass is recognized as a finance cost.

(XV). Foreign Exchange

Transactions made in foreign currencies are converted into Ringgit Malaysia based on the rate prescribed at the time of the transactions were executed.

4. CASH AND CASH EQUIVALENTS

	2020	2019
	RM	RM
Cash and Bank Balances	35,840,473	38,226,099
Deposits in Licensed Banks	67,396,856	79,709,817
TOTAL	**103,237,329**	**117,935,916**

Cash and Bank Balance includes the Special Fund of RM5,747,480 (2019: RM6,357,303).

5. OTHER RECEIVABLES, DEPOSIT AND ADVANCE

	2020	2019
	RM	RM
Staff Advance	–	6,620
Club Membership Deposits	92,000	92,000
Other Deposits and Receivables	585,286	583,922
TOTAL	**677,286**	**682,542**

Other Receivables, Deposit and Advance includes rental deposit for regional offices, stores, and parking, and other facilities used such as deposits for medical services (Third Party Administrator), advertisements spaces for regional office, electricity, and others.

6. ACCRUED INTEREST INCOME

	2020	2019
	RM	RM
Accrued Interest Income	2,142,746	5,425,199
TOTAL	**2,142,746**	**5,425,199**

Accrued Interest Income is the immature benefit of fixed deposits which is accounted for as at 31 December each year.

7. PROPERTY, FITTINGS AND EQUIPMENT

2020

	Land	Building	Motor Vehicle	Furniture, Fittings, Renovations and Enforcement Equipment	Office Equipment (Electronic)	Application Systems and Computer	Fixtures and Equipment	Total
	RM	RM	RM	RM	RM	RM	RM	RM
Cost								
At 1 January	8,299,405	79,205,160	4,347,898	6,938,122	5,248,782	5,414,159	1,580,140	111,033,666
Addition	–	–	341,516	114,164	109,239	449,838	–	1,014,757
Disposal/Transfer	–	–	(544,975)	–	–	(696,349)	–	(1,241,324)
At 31 December	8,299,405	79,205,160	4,144,439	7,052,286	5,358,021	5,167,648	1,580,140	110,807,099
Accumulated Depreciation								
At 1 January	–	10,296,670	3,689,144	5,624,827	4,597,545	4,505,377	1,531,624	30,245,187
Current Year Depreciation	–	1,584,103	197,901	400,139	239,836	535,082	10,001	2,967,062
Disposal/Transfer	–	–	(544,972)	–	–	(695,812)	–	(1,240,784)
At 31 December	–	11,880,773	3,342,073	6,024,966	4,837,381	4,344,647	1,541,625	31,971,465
Net Book Value								
At 31 December	**8,299,405**	**67,324,387**	**802,366**	**1,027,319**	**520,640**	**823,002**	**38,515**	**78,835,634**

Notes on the Financial Statements...continued

7. PROPERTY, FITTINGS AND EQUIPMENT...CONTINUED

2019

	Land	Building	Motor Vehicle	Furniture, Fittings, Renovations and Enforcement Equipment	Office Equipment (Electronic)	Application Systems and Computer	Fixtures and Equipment	Total
	RM	RM	RM	RM	RM	RM	RM	RM
Cost								
At 1 January	8,299,405	79,205,160	3,967,265	6,192,721	5,155,761	5,135,488	1,530,134	109,485,934
Addition	–	-	534,237	763,004	143,779	283,236	50,006	1,774,262
Disposal/Transfer	–	-	(153,604)	(17,603)	(50,758)	(4,565)	-	(226,530)
At 31 December	8,299,405	79,205,160	4,347,898	6,938,122	5,248,782	5,414,159	1,580,140	111,033,666
Accumulated Depreciation								
At 1 January	–	8,712,567	3,627,962	5,336,796	4,028,008	3,947,363	1,530,074	27,182,770
Current Year Depreciation	–	1,584,103	214,785	305,634	619,720	562,578	1,550	3,288,370
Disposal/Transfer	–	-	(153,603)	(17,603)	(50,183)	(4,564)	-	(225,953)
At 31 December	–	10,296,670	3,689,144	5,624,827	4,597,545	4,505,377	1,531,624	30,245,187
Net Book Value								
At 31 December	**8,299,405**	**68,908,490**	**658,754**	**1,313,295**	**651,237**	**908,782**	**48,516**	**80,788,479**

Notes on the Financial Statements...continued

8. OTHER PAYABLES AND ACCRUED EXPENSES

	2020	2019
	RM	RM
Payables	55,084	-
Accrued Payables	13,257,096	9,893,566
Provisions of Staff Leave (GCR)	2,145,269	1,785,540
Compounds for Consolidated Fund under KeTSA	2,500	-
Audit Fees	47,488	47,488
TOTAL	**15,507,437**	**11,726,594**

9. PROVISION FOR EMPLOYEE BENEFITS

	2020	2019
	RM	RM
At 1 January	15,965,636	10,114,280
Current Year Provision	3,481,646	8,080,860
Current Year Payments	(2,365,356)	(2,229,504)
At 31 December	**17,081,926**	**15,965,636**

The maturity structure for Provisions for Employess Benefits are as follows:

	2020	2019
	RM	RM
Maturity within 12 months	3,040,731	2,917,578
Maturity exceeding 12 months	14,041,195	13,048,058
TOTAL	**17,081,926**	**15,965,636**

Increase in Provision for Employee Benefits for the year 2020 is in line with the increase in number of personnel and implementation of amendments to the Energy Commission's Terms and Conditions of Service effective 1 March 2019.

10. SPECIAL FUNDS

2020

	PPKTL Special Funds Account	MyPower Special Funds Account	PR&PLL Special Funds Account	SAIDI 100 Special Funds Account	Total
	RM	RM	RM	RM	RM
Balance as at 1 January 2020	**729,167**	**1,979**	**5,611,865**	**14,292**	**6,357,303**
Income:					
Bank Interest	8,656	6	56,042	122	**64,826**
	8,656	6	56,042	122	64,826
(-) Expenditure					
Bank Charges	(1)	(10)	(1)	-	**(12)**
Expenses/Repayment for The Year	-	-	(79,362)	-	**(79,362)**
Transfer of Provisions/Funds	(580,862)	-	-	(14,414)	**(595,276)**
	(580,863)	(10)	(79,363)	(14,414)	**(674,650)**
Deficit	(572,207)	(4)	(23,321)	(14,292)	**(609,824)**
Balance as at 31 December 2020	**156,960**	**1,975**	**5,588,544**	**-**	**5,747,479**

2019

	PPKTL Special Funds Account	MyPower Special Funds Account	PR&PLL Special Funds Account	SAIDI 100 Special Funds Account	Total
	RM	RM	RM	RM	RM
Balance as at 1 January 2019	**721,891**	**1,817**	**5,595,228**	**165,500**	**6,484,436**
Income:					
Bank Interest	7,276	163	55,888	822	**64,149**
	7,276	163	55,888	822	64,149
(-) Expenditure					
Bank Charges	-	(1)	-	-	**(1)**
Expenses/Repayment for The Year	-	-	(39,251)	-	**(39,251)**
Transfer of Provisions/Funds	-	-	-	(152,030)	**(152,030)**
	-	(1)	(39,251)	(152,030)	**(191,282)**
Surplus/(Deficit)	7,276	162	16,637	(151,208)	**(127,133)**
Balance as at 31 December 2019	**729,167**	**1,979**	**5,611,865**	**14,292**	**6,357,303**

Notes on the Financial Statements...continued

10. SPECIAL FUNDS...CONTINUED

Special Funds are special allocations received from the Electricity Supply Industry Trust Fund (ESITF) under the Ministry of Energy, Green Technology and Water (KeTTHA), which is currently administered by the Ministry of Energy and Natural Resources (KeTSA) and government agencies for specific purposes. Details of each account under the Special Funds are as follows:-

(i). **PPKTL Special Funds Account:** to finance Sustainable Energy Communications Plan Project that aims to promote the use of sustainable energy encompassing the field of energy efficiency and renewable energy, and to foster greater awareness and enhance the public's knowledge on the legal framework and regulations related to sustainable energy. A transfer of fund was made to AAIBE under the Ministry of Energy and Natural Resources (KeTSA) with an amount of RM528,056.61 on 20 October 2020 as instructed through a letter dated 15 September 2020. Additionally, ST has also made a transfer amounting RM52,805.66 to the Sustainable Energy Development Authority Malaysia (SEDA) as instructed through a letter dated 2 Oktober 2020.

(ii). **MyPower Special Funds Account:** to finance the implementation of project initiatives under the 10th Malaysia Plan namely the Stabilisation Mechanism, Ring Fencing Single Buyer, Fuel Supply and Security and Industry Structure.

(iii). **PR & PLL Special Funds Account:** to finance retrofitting projects and installation of LED lighting in selected ministry buildings beginning in early 2015.

(iv). **SAIDI 100 Special Funds Account:** to review and identify on eletrical issues in Sabah in reaching the target to lower the System Average Interruption Duration Index (SAIDI) of the electrical power utilities towards 2020. On 15 July 2020, ST has made a transfer of *hibah* balances amounting RM14,414 to AAIBE.

11. FEES AND CHARGES

	2020	2019
	RM	RM
Public and Private Licences	76,157,449	76,946,220
Registration/Operations Renewal Fees	30,296,645	31,504,080
Other Operating Fees	626,780	1,069,054
TOTAL	**107,080,874**	**109,519,354**

12. WAGES, ALLOWANCES AND EMPLOYEE BENEFITS

	2020	2019
	RM	RM
Wages and Allowances	36,034,247	33,550,221
Energy Commission Members' Allowances	662,634	517,363
Statutory Contributions	7,416,200	6,446,482
Other Financial Benefits	15,327,921	17,566,544
TOTAL	**59,441,002**	**58,080,610**

The total number of Energy Commission's employees as at 31 December 2020 stands at 357 personnel. Meanwhile, the total number of employees in 2019 was 340 personnel. Included in the Statutory Contributions is the contribution made to the Employees Provident Fund (EPF) amounting to RM7,134,237 (2019: RM6,176,464) and contributions to SOCSO amounting RM281,963 (2019: RM270,017).

13. MAINTENANCE

	2020	2019
	RM	RM
Application System Maintenance	4,299,846	4,761,715
Equipment, Vehicle and Office Building Maintenance	1,935,221	1,737,175
TOTAL	**6,235,067**	**6,498,890**

14. PROFESSIONAL SERVICES

	2020	2019
	RM	RM
Audit Fees	47,488	53,820
Professional and Consultancy Fees	7,051,820	4,284,167
Development Cost of Competency and Management Performance	678,682	816,191
Other Professional Services Expenses	438,195	1,080,381
TOTAL	**8,216,185**	**6,234,559**

Notes on the Financial Statements...continued

15. TAXATION EXPENSE

	2020	2019
	RM	RM
Tax Expenses		
Current Year	4,105,545	4,341,377
Surplus/Deficit of Provision from Previous Year	-	-
Total	**4,105,545**	**4,341,377**
Reconciliation of Effective Tax Rate		
Surplus Income Before Tax	37,757,868	42,666,347
Tax at 30%	11,327,360	11,946,577
Tax-Exempted Income	(7,221,815)	(7,605,200)
Tax Expense	**4,105,545**	**4,341,377**

The Energy Commission is tax-exempted under Section 127(3)b Income Tax Act 1967 which was conferred by the Ministry of Finance on 19 October 2004. The tax exemption is applicable only to statutory income as follows:

(i). Income received from the Federal or State Govenment in the form of grants or subsidies;

(ii). Income received in connection with any amount chargeable or collectible from any person according to the provisions of the Act which regulates statutory authorities; and

(iii). Contributions and donations received.

16. ADJUSTMENT FROM PREVIOUS YEAR

Adjustment for the year 2020 were adjustments on accrued payables for creditors due to differences in transactions recorded in previous year.

17. THE EFFECT OF ADOPTING MPSAS

	MPERS	Effect of MPSAS	Reclassification	MPSAS
	RM	RM	RM	RM
The effect on Statement of Financial Position as at 31 December 2019				
Current Assets				
Other Receivables	682,542	–	(682,542)	–
Other Receivables, Deposits and Advance	–	–	682,542	682,542
Current Liabilities				
Other Payables and Accruals	11,726,594	–	(11,726,594)	–
Other Payables and Accrued Expenses	–	–	11,726,594	11,726,594
The effect on Statement of Financial Performance for The Year Ended 31 December 2019				
Income				
Fees and Charges	109,519,354	–	(109,519,354)	–
Interests	15,613,506	–	(15,613,506)	–
Other Income	1,511,741	–	(1,511,741)	–
Income				
Income from Non-Exchangeable Transactions				
Fees and Charges	–	–	109,519,354	109,519,354
Income from Exchangeable Transactions				
Interests	–	–	15,613,506	15,613,506
Other Income	–	–	1,511,741	1,511,741
Expenses				
Staff Costs	60,479,930	–	(60,479,930)	–
Administrative Costs	19,351,812	–	(19,351,812)	–

Notes on the Financial Statements...continued

17. THE EFFECT OF ADOPTING MPSAS...CONTINUED

	MPERS	Effect of MPSAS	Reclassification	MPSAS
	RM	RM	RM	RM
The effect on Statement of Financial Performance for The Year Ended 31 December 2019...continued				
Expenses				
Wages, Allowances and Employee Benefits	–	–	58,080,610	58,080,610
Travelling and Subsistence Allowances	–	–	2,399,320	2,399,320
Communications and Utilities	–	–	2,425,461	2,425,461
Rental	–	–	2,579,010	2,579,010
Hospitalitites	–	–	383,140	383,140
Office Supplies	–	–	1,230,752	1,230,752
Maintenance	–	–	6,498,890	6,498,890
Professional Services	–	–	6,234,559	6,234,559
The effect on Statement of Cash Flow for The Year Ended 31 December 2019				
Adjustment from previous year income	42,795	–	(42,795)	–
Increase in Other Payables and Accrued Expenses	–	–	42,795	1,580,255

18. BUDGET INFORMATION

The Energy Commission's budget is approved by the Ministry of Energy and Natural Resources (KeTSA), encompassing fiscal period of 1 January 2020 to 31 December 2020.

The following are the material differences between the the amount of Final Budget and Actual for the year 2020:

DETAILS	Actual 2020	Final Budget	Difference
	RM	RM	RM
INCOME			
Income from Operation	107,080,874	112,596,800	(5,515,926)
EXPENSES			
Travelling and Subsistence Allowances	795,472	4,000,000	3,204,528
Maintenance	5,876,226	9,354,897	3,478,671
Professional Services	9,312,526	22,505,462	13,192,936

The COVID-19 that surge across the country in 2020 had indirectly affected revenue collection and expenses in 2020.

The Movement Control Order has restricted regulatory work, especially enforcement activities at the premisses of the licensees and affects the performance of revenue collection and Travelling and Subsistence Allowance expenses.

Maintenance works such as heat exchanger system, parking lot flooring repair, facade cleaning, and granite tiles repair at the headquarters' building had been posponed, which resulted to lower spending in maintenance expenses for the year 2020.

Material difference for Professional Services is because many large scale events such as *hari raya* event, family day, seminars, dialogues, workshops and other programs cannot be carried out due to the COVID-19 Pandemic. In addition, there are some development projects that are still in progress, being recorded as a Commitment for consultants who have been appointed in year 2020.

Notes on the Financial Statements...continued

19. COMMITMENTS

	2020	2019
	RM	RM
Property, Fittings and Equipments	530,811	99,601
Professional Services	6,421,373	5,595,795
Maintenance and Office Supplies	2,486,228	1,008,712
Emolument	-	90,083
TOTAL	**9,438,412**	**6,794,191**

Included in the Commitments for the year ended 31 December 2020 under Property, Fittings and Equipments amounting to RM530,811 are the renovation costs for Energy Commissions' head office and offices in Pulau Pinang, Kedah and Perlis, and assets procured including fittings and electronic equipments. The cost in acquiring professional services and consultancy under Professional Services are amounting to RM6,421,373.

Commitments for system upgrade maintenance cost, ICT network maintenance, operational support and building maintenances, and utilities are amounting to RM1,984,179, while cost for Office Supplies are amounting to RM502,049.

The Commitment costs for the year 2019 amounting to RM6,794,191 consists of costs related to Property, Fittings and Equipments, Professional Services, Maintenance and Office Supplies, and Emolument.

20.CONTINGENT LIABILITY

A civil action was filed by NMH Engineering Services Sdn. Bhd. ("NMH") on 26.12.2017 at the Shah Alam High Court to Energy Commission ("ST") to withdraw the cancellation of Certificates of Registration which was issued to 50 electrical installation owners to claim RM9,327,400.00 for losses arising from contract cancellation and 3 months of workers' wages incurred by NMH amounting to RM540,075.43. NMH has also made a claim on general damages for losing source of income due to the cancellation of certificates which will be determined by the Court.

In 2019, a civil action was filed by NMH at the Shah Alam High Court against ST on 16.10.2018 for a declaration that ST's decision on cancellation of NMH's Certificates of Registration on 18.01.2019 was null and void and to claim RM1,290,000.00 for losses arising from the cancellation, general damages, 5% interest per year from the total damages determined by the court from the date of judgement until full settlement, and costs based on indemnity.

Meanwhile, in 2020, a civil action was filed by Strong Elegance Sdn. Bhd. ("SE") on 18.12.2020 at the Kuala Lumpur High Court against ST for a declaration that the withdrawal of the Letter of Award dated 02.05.2017 by ST was null and void and has made a claim for all costs and expenses incurred by SE due to the withdrawal including general damages and punitive damages to be determined by the Court.

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