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MAKLUMAT PRESTASI DAN STATISTIK
INDUSTRI PEMBEKALAN ELEKTRIK DI MALAYSIA
*PERFORMANCE AND STATISTICAL INFORMATION
ON ELECTRICITY SUPPLY INDUSTRY IN MALAYSIA*

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Segala data dan maklumat yang terkandung di dalam buku laporan ini memberi gambaran yang munasabah dan saksama bagi keseluruhan industri pembekalan elektrik di negara ini. Segala usaha telah diambil untuk memastikan semua maklumat yang terkandung di dalam laporan ini telah disahkan kesahihannya berdasarkan laporan harian, bulanan dan tahunan yang dihantar oleh pemegang-pemegang lesen sebagaimana termaktub di bawah syarat-syarat lesen. Manakala bagi negeri Sarawak, maklumat mengenai statistik dan prestasi utiliti di negeri tersebut dikemukakan oleh Sarawak Energy Berhad (SEB) mengikut permintaan Suruhanjaya Tenaga (ST).

ST dengan niat yang baik menerbitkan maklumat ini untuk kegunaan orang awam, sejajar dengan fungsi yang ditetapkan di bawah Akta. ST menafikan semua atau apa-apa jawatanggungjawab kepada sesiapa sahaja untuk maklumat yang terkandung di dalam laporan ini atau bagi apa-apa representasi atau kenyataan di sini, sama ada secara tersurat atau tersirat, atau untuk apa-apa jawapan yang diberikan sebagai maklumbalas kepada sebarang pertanyaan berhubung dengan laporan ini.

The data and information in this report represent a fair and reasonable overview of the whole electricity supply industry. Every effort has been made to verify, validate and accurately represent the information in this report, based on the daily, monthly and yearly reports which were submitted by licensees pursuant to their licence conditions. As for Sarawak, information on the performance and statistics of utility in the state were submitted by Sarawak Energy Berhad (SEB) as requested by the Energy Commission (EC).

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Ringkasan Eksekutif

SITUASI PEMBEKALAN DAN PERMINTAAN TENAGA ELEKTRIK DI SEMENANJUNG MALAYSIA

Kehendak maksimum sistem grid di Semenanjung meningkat 4.65% daripada tahun 2012 kepada 16,562 MW yang direkodkan pada 13 Mei 2013. Permintaan tenaga elektrik yang direkodkan pada hari tersebut ialah 337.20 GWj, peningkatan sebanyak 2.57% berbanding 328.72 GWj pada tahun 2012. Permintaan tenaga elektrik harian tertinggi adalah sebanyak 345.25 GWj pada 25 Jun 2013, iaitu peningkatan sebanyak 5.0% daripada tahun sebelumnya iaitu 328.72 GWj. Manakala permintaan tenaga elektrik tahunan meningkat 3.6% daripada 108,473 GWj pada 2012 kepada 112,358 GWj. Jualan tenaga elektrik turut meningkat kepada 100,999 GWj, peningkatan sebanyak 3.9% berbanding 97,243 GWj pada tahun 2012.

Kapasiti penjanaan terpasang sistem (kapasiti penjanaan yang bersambung dengan grid) berkurangan kepada 21,628 MW berikutan penamatan operasi Unit 1 Stesen Janakuasa Pasir Gudang yang berkapasiti 120 MW. Daripada jumlah kapasiti tersebut, 31.7% (6,851 MW) disumbangkan oleh Tenaga Nasional Berhad (TNB) di mana 1,911 MW hidro dan 4,940 MW *thermal*. Stesen-stesen penjana bebas (IPP) menyumbang 68.3% (14,777 MW) daripada keseluruhan kapasiti penjanaan terpasang sistem di Semenanjung (tidak termasuk Musteq Hydro Sdn. Bhd. dan Nur Generation Sdn. Bhd.).

SITUASI PEMBEKALAN DAN PERMINTAAN TENAGA ELEKTRIK DI SABAH

Seiring dengan perkembangan ekonomi, permintaan elektrik di Sabah terus meningkat. Kehendak maksimum sistem grid di Sabah meningkat sebanyak 5.3% kepada 874.4 MW, yang direkodkan pada 23 September 2013, berbanding kehendak maksimum 828.4 MW pada tahun 2012.

Sehingga Disember 2013, jumlah kapasiti penjanaan terpasang di Sabah adalah 1,303.0 MW. Bagaimanapun, mengambil kira pengurangan kapasiti (*deration*) dan kekangan pada sistem penjanaan, kapasiti boleh harap berada pada paras 1,172.3 MW. Daripada jumlah keseluruhan kapasiti boleh harap tersebut, 637.5 MW adalah kapasiti penjanaan oleh penjana bebas (IPP), 495.3 MW oleh Sabah Electricity Sdn. Bhd. (SESB) dan 40.0 MW daripada stesen-stesen tenaga boleh baharu yang tersambung ke sistem grid Sabah.

Terdapat peningkatan pada kapasiti penjanaan di Sabah. Projek Rehabilitasi Batu Sapi berkapasiti 20 MW telah mula beroperasi pada Mac 2013 dan stesen janakuasa Kubota yang dipindahkan dari Teluk Ewa, Pulau Langkawi ke Tawau berkapasiti 64.0 MW mula beroperasi pada bulan Julai 2013.

Beberapa stesen penjanaan yang dimiliki oleh SESB dan IPP di kawasan Pantai Timur Sabah masih lagi menunjukkan tahap kesediaan dan daya harap yang rendah. Ini kerana kebanyakan unit penjanaan yang menggunakan bahan api *distillate*/MFO telah berusia. Pada Oktober 2013, pemberhentian operasi stesen janakuasa Sutera Harbour telah menyebabkan kehilangan kapasiti penjanaan terpasang sebanyak 38.0 MW di Pantai Barat Sabah.

Executive Summary

SUPPLY AND DEMAND OF ELECTRICITY IN PENINSULAR MALAYSIA

Grid system maximum demand in Peninsular increased 4.65% from 2012 to 16,562 MW which was recorded on May 13, 2013. Electricity demand recorded on the day was 337.20 GWh, an increase of 2.57% compared to 328.72 GWh in 2012. The highest daily electricity demand of 345.25 GWh was recorded on June 25, 2013, an increase of 5.0% from the previous year of 328.72 GWh. Meanwhile, the annual electricity demand increased by 3.6% from 108,473 GWh in 2012 to 112,358 GWh. Electricity sales increased to 100,999 GWh, an increase of 3.9% compared to 97,243 GWh in 2012.

System installed generating capacity (generation capacity connected to the grid) reduced to 21,628 MW due to the decommissioning of 120 MW of Pasir Gudang Power Station Unit 1. Out of the total capacity, 31.7% (6,851 MW) was from Tenaga Nasional Berhad (TNB), where 1,911 MW from hydro and 4,940 MW from thermal. Another 68.3% (14,777 MW) from the total of system installed generating capacity (excluding Musteq Hydro Sdn. Bhd. and Nur Generation Sdn. Bhd.) was accounted from the Independent Power Producers (IPPs).

SUPPLY AND DEMAND OF ELECTRICITY IN SABAH

In tandem with economic growth, electricity demand in Sabah keeps increasing. The maximum demand of Sabah grid system increased by 5.3% to 874.4 MW, which was recorded on September 23, 2013, compared to 828.4 MW in 2012.

Up to December 2013, the total installed capacity in Sabah was 1,303.0 MW. However, with deration and constraints of the generation system, the dependable capacity stood at 1,172.3 MW. Out of the total dependable capacity, 637.5 MW was from the IPPs, 495.3 MW from Sabah Electricity Sdn. Bhd. (SESB) and 40.0 MW from the grid-connected renewable energy power stations.

There was an increase in Sabah's generation capacity. The 20 MW Batu Sapi Rehabilitation Project started its operation in March 2013 and 64.0 MW Kubota Power Station, which was transferred from Teluk Ewa Pulau Langkawi started its operation in July 2013.

Some of the power stations owned by SESB and IPP in the East Coast Sabah still showed low levels of availability and reliability. This is due to the usage of old distillate/MFO fuel generating units. In October 2013, decommissioning of Sutera Harbour Power Station caused 38.0 MW capacity loss from the West Coast Sabah.

SITUASI PEMBEKALAN DAN PERMINTAAN TENAGA ELEKTRIK DI SARAWAK

Pada tahun 2013, jumlah keseluruhan kapasiti penjanaan terpasang bagi negeri Sarawak ialah 3,132 MW, iaitu 1,332 MW daripada Sarawak Energy Berhad (SEB) dan 1,800 MW daripada Sarawak Hydro Sdn. Bhd. (Stesen Janakuasa Hidro Bakun). Jumlah unit penjanaan SEB ialah 6,572 GWj manakala Bakun menjana 5,467 GWj.

Kehendak maksimum sistem di Sarawak telah meningkat sebanyak 19.3% kepada 1,466 MW daripada 1,229 MW pada tahun sebelumnya. Jualan tenaga elektrik pada tahun 2013 juga meningkat sebanyak 37.34% kepada 10,420 GWj berbanding hanya 7,587 GWj pada tahun 2012. Daripada jumlah jualan tenaga elektrik ini, 6,457 GWj dijual kepada sektor industri. Dari segi peningkatan jualan tenaga elektrik mengikut sektor, sektor industri mencatatkan peningkatan tertinggi iaitu sebanyak 65.4% daripada 3,904 GWj kepada 6,457 GWj yang dibeli oleh sektor tersebut pada tahun 2013.

PRESTASI SISTEM PEMBEKALAN ELEKTRIK DI SEMENANJUNG MALAYSIA

Sistem Penjanaan

Sejak tahun 2012 hingga tahun 2013, stesen-stesen janakuasa di Semenanjung menunjukkan purata kecekapan *thermal* yang konsisten. Walau bagaimanapun, terdapat sedikit kemerosotan kecekapan *thermal* bagi stesen-stesen janakuasa kitar padu gas milik TNB ekoran peningkatan henti tugas tidak berjadual, faktor usia, degradasi serta terdapat stesen janakuasa yang beroperasi pada mod kitar terbuka. Untuk tahun 2013, jumlah penggunaan gas bagi stesen janakuasa berasaskan gas adalah sebanyak 440,163 mmscf berbanding 372,739 mmscf pada tahun 2012.

Dari segi Faktor Kesediaan Setara (EAF) pula, EAF bagi stesen-stesen janakuasa di Semenanjung merosot di antara 4% hingga 11%. Penurunan yang agak ketara dilihat pada stesen-stesen janakuasa kitar padu dan stesen-stesen janakuasa kitar terbuka. Manakala stesen janakuasa arang batu masih mencatatkan EAF terendah iaitu sekitar 80% sahaja. Penurunan kadar EAF berkait rapat dengan peningkatan aktiviti henti tugas sama ada berjadual atau pun tidak berjadual.

Untuk Faktor Henti Tugas Tidak Berjadual Setara (EUOF), terdapat peningkatan kadar EUOF yang ketara pada hampir semua stesen-stesen janakuasa. Walaupun terdapat peningkatan bekalan gas asli kepada sektor tenaga, namun masih terdapat stesen janakuasa kitar padu yang tidak dapat beroperasi kerana mengalami kerosakan terutama pada turbin stim yang memerlukan tempoh senggaraan yang lama. Kebocoran tiub masih menjadi penyebab utama henti tugas tidak berjadual bagi stesen janakuasa yang menggunakan arang batu.

Akibat daripada henti tugas stesen janakuasa arang batu dan kitar padu ini, operasi bagi stesen janakuasa kitar terbuka telah meningkat. Oleh kerana perlu beroperasi pada tahap beban yang tinggi dalam tempoh yang lama, stesen janakuasa kitar terbuka mengalami kegagalan peralatan janakuasanya oleh kerana faktor usia. Ini secara langsung menyebabkan daya harap stesen ini menurun.

SUPPLY AND DEMAND OF ELECTRICITY IN SARAWAK

In 2013, the total installed generating capacity of Sarawak Energy Berhad (SEB) was 3,132 MW, where 1,332 MW was from Sarawak Energy Berhad (SEB) and 1,800 MW from Sarawak Hydro Sdn. Bhd. (Bakun Hydroelectric Power Station). The total electricity generated by SEB was 6,572 GWh, while Bakun generated 5,467 GWh.

Maximum demand system in Sarawak has increased by 19.3% to 1,466 MW from 1,229 MW in the previous year. Electricity sales in 2013 also increased by 37.34% to 10,420 GWh compared to 7,587 GWh in 2012. Of these total electricity sales, 6,457 GWh was sold to the industrial sector. In terms of electricity sales by sector, the industrial sector recorded the highest increase of 65.4% from 3,904 GWh to 6,457 GWh of electricity purchased.

PERFORMANCE OF ELECTRICITY SUPPLY SYSTEM IN PENINSULAR MALAYSIA

Generation System

Since the year 2012 to the year 2013, the power stations in the Peninsular showed a consistent average thermal efficiency. However, there was a slight decrease in thermal efficiency of gas combined cycle power stations owned by TNB due to increase in unscheduled shut down, aging factors, degradation, and some of the power stations operated on open cycle mode. For the year 2013, the total consumption of gas for gas-based power stations was 440,163 mmscf compared to 372,739 mmscf in 2012.

In terms of Equivalent Availability Factor (EAF), the EAF for power stations in Peninsular decreased between 4% to 11%. Combined cycle power stations and open cycle power stations showed significant decrease, while coal power station recorded the lowest EAF around 80%. EAF reduction is highly correlated with increased activity of scheduled and unscheduled down time.

There was a significant increase in EUOF in nearly all power stations. Although there was an increase in supply of natural gas to the energy sector, a few combined cycle power plants which still failed to operate due to the damage to steam turbines that require longer down time for maintenance. Tube leak remains a leading cause of unscheduled downtime for power stations that use coal.

Due to downtime of those coal and combined cycle power plants, the operation of open-cycle power station has increased. Since the open cycle power stations had to operate at high load for a long time, some of the power stations experienced power equipment failure due to the age factor. This directly has reduced the reliability of these stations.

Sistem Penghantaran

Pada keseluruhannya, prestasi sistem penghantaran di Semenanjung semakin bertambah baik, di mana sistem minit yang diukur berdasarkan tahun kalendar telah berkurangan sebanyak 63.2%, kepada 0.35 minit berbanding 0.95 minit pada tahun 2012. Pada tahun 2013, terdapat hanya dua (2) insiden pelantikan dilaporkan dengan kehilangan beban 50 MW ke atas berbanding empat (4) insiden pada tahun 2012. Seperti tahun 2012, tiada insiden lucutan beban dilaporkan. Walau bagaimanapun, jumlah tenaga yang tidak dibekalkan didapati meningkat sebanyak 11.9% kepada 238.2 MWj berbanding 212.7 MWj pada 2012. Dalam tempoh 2011 hingga 2013, *Delivery Point Unreliability Index* (DePUI) atau sistem minit bagi grid nasional adalah dalam lingkungan tidak melebihi 1 minit, sebagaimana sasaran yang ditetapkan.

Sistem Pengagihan

Pada tahun 2013, secara puratanya prestasi SAIDI TNB adalah baik dan menunjukkan *trend* yang menurun berbanding SAIDI 2012. SAIDI keseluruhan adalah di paras 60.35 minit/pelanggan/tahun dan masih di bawah sasaran tahun 2013 iaitu 65 minit/pelanggan/tahun. SAIDI pada sistem voltan sederhana pada tahun 2013 telah menunjukkan peningkatan 14.0% kepada 56.20 minit/pelanggan/tahun berbanding 49.30 minit/pelanggan/tahun pada tahun 2012. Sistem voltan sederhana masih merupakan penyumbang terbesar kepada SAIDI keseluruhan berbanding dengan sistem voltan rendah dan voltan tinggi. Bagi meminimumkan impak oleh sistem voltan sederhana kepada prestasi SAIDI, TNB telah melaksanakan pelbagai inisiatif seperti program senggaraan preventif, penggantian sambungan-sambungan kabel yang bermasalah dan pelaksanaan *condition based monitoring*. Tumpuan utama ialah kabel bawah tanah di mana lebih daripada 70% punca gangguan bekalan voltan sederhana adalah akibat kerosakan pada sambungan dan terminasi kabel dan kerosakan kabel oleh pihak ketiga. Pelaksanaan tindakan jangka pendek dan jangka panjang untuk memperbaiki sistem voltan sederhana masih dibuat secara berterusan dalam tahun 2013. Kerosakan yang berpunca daripada *Insulation Piercing Connectors* (IPC) masih mencatatkan peratusan yang tertinggi berbanding dengan punca-punca lain.

Di Kulim Hi-Tech Park (KHTP), SAIDI keseluruhan yang dilaporkan oleh NUR Distribution Sdn. Bhd. berada pada paras 60.52 minit/pelanggan/tahun, iaitu meningkat dengan ketara berbanding 33.23 minit/pelanggan/tahun pada tahun 2012. SAIDI industri (untuk pelanggan voltan tinggi sahaja) juga telah meningkat kepada 1.70 minit/pelanggan/tahun berbanding sifar pada tahun 2012. Peningkatan ini berpunca daripada insiden pada bulan Januari 2013, di mana alat ubah voltan 11kV/110V dalam bilik pencawang 11kV milik NUR Distribution telah gagal beroperasi. Kegagalan ini telah menyebabkan perlindungan busbar beroperasi dan menyebabkan separuh daripada bekalan terputus kepada satu pelanggan voltan tinggi selama 51 minit.

Pada keseluruhannya, peningkatan SAIDI pada tahun 2013 adalah disebabkan oleh terdapat 4 kejadian tidak dirancang yang memberi kesan kepada pelanggan domestik/komersial voltan rendah (400/230V), di mana berlaku kehilangan melebihi 10,000 minit/pelanggan. Ekoran daripada 4 kejadian ini telah menyumbang sebanyak 55 minit/pelanggan/tahun atau 90.9% daripada SAIDI keseluruhan tahun 2013.

Kualiti Kuasa

Junaman voltan di kawasan-kawasan perindustrian di Semenanjung dipantau melalui 150 unit alat perakam kualiti kuasa TNB yang dipasang di pencawang-pencawang masuk

Transmission System

The overall performance of the transmission system in the Peninsular has increased, where the recorded system minute in the calendar year decreased by 63.2% to 0.35 minute compared to 0.95 minute in 2012. In 2013, there were only two (2) tripping incidents with load loss of above 50 MW, compared to four (4) incidents in 2012. As in 2012, there were no load shedding incidents reported. However, the amount of unsupplied energy increased by 11.9% to 238.2 MWh from 212.7 MWh in 2012. During the period of 2011 to 2013, the Delivery Point Unreliability Index (DePUI) or system minutes of the national grid system was within the range of not more than 1 minute, as targeted.

Distribution System

On average, SAIDI performance of TNB in 2013 was good and showed a downward trend compared to SAIDI of 2012. The overall SAIDI was at 60.35 minutes/customer/year and still below the 2013 target which is 65 minutes/customer/year. SAIDI of the medium voltage system has shown an increase of 14.0% to 56.20 minutes/customer/year compared to 49.30 minutes/customer/year in 2012. The medium voltage system remained as the main contributor towards overall SAIDI compared to low and high voltage system. In order to minimize the impact of the medium voltage system to SAIDI performance, TNB has embarked on various initiatives such as preventive maintenance programs, replacement of the problematic cable connections and implementation of condition based monitoring. The main focus is on the underground cable in which more than 70% of the medium voltage outages are due to damage to the cable connection and termination and third party fault. Implementation of short-term and long-term actions in improving the medium voltage system continued in 2013. Causes of the interruption due to Insulation Piercing Connectors (IPC) still recorded the highest percentage compared with other causes.

In Kulim Hi-Tech Park (KHTP), overall SAIDI reported by NUR Distribution Sdn. Bhd. was at 60.52 minutes/customer/year, which is substantially higher compared to 33.23 minutes/customer/year in 2012. SAIDI for industry (high voltage customer only) also increased to 1.70 minutes/customer/year compared to zero in 2012. The increase was due to an incident in January 2013, where the 11kV/110V voltage transformers in the 11kV switch room owned by NUR Distribution had failed to operate. This resulted in the operation of busbar protection and caused half of the electricity supply cut off to a single high-voltage customer for 51 minutes.

Overall, the increase in SAIDI in 2013 is due to 4 unplanned incidents which affected low voltage domestic/commercial customers (400/230V), which caused loss of more than 10,000 minutes/customer. These 4 events contributed a total of 55 minutes/customer/year or 90.9% of the overall SAIDI in 2013.

Power Quality

Voltage dip incident in the industrial areas in Peninsular was monitored using 150 units of power quality recorder installed at the main intake substation. It records SARFI index used to measure the performance of voltage dip incidents and this index is monitored according to the voltage level of every state in the Peninsular. SARFI₉₀ means the average number of occurrences of a voltage dip below 90%. High value of SARFI indicates more occurrence of voltage dip in the electricity supply system. Based on the comparison

utama (PMU). Ia merekodkan indeks SARFI yang digunakan untuk mengukur prestasi kejadian junaman voltan dan indeks ini dipantau mengikut paras voltan bagi negeri-negeri di Semenanjung. SARFI₉₀ bermaksud bilangan purata kejadian junaman voltan yang mempunyai peratus (%) junaman voltan di bawah 90%. Nilai SARFI yang tinggi menunjukkan lebih banyak kejadian junaman voltan yang berlaku dalam sistem bekalan elektrik. Berdasarkan perbandingan SARFI_x mengikut tahap voltan bagi sistem 11kV, 22kV, 33kV dan sistem keseluruhan, sistem 22kV telah mencatatkan nilai SARFI₉₀ yang lebih tinggi berbanding dengan sistem 11kV dan 33kV. Sementara itu, bagi sistem keseluruhan pula, SARFI₉₀ telah mencatatkan purata kejadian yang tertinggi iaitu 5.91.

Bilangan aduan kualiti kuasa pada tahun 2013 adalah sebanyak 217 aduan yang melibatkan 93 pengguna industri, iaitu meningkat 95.5% berbanding 111 aduan tahun 2012. Dalam menangani isu kualiti kuasa 24 pengguna-pengguna kuasa besar di Semenanjung, TNB telah menyediakan perkhidmatan perundingan, iaitu masing-masing di Negeri Johor (4), Kelantan (1), Kuala Lumpur (1), Melaka (1), Negeri Sembilan (3), Pahang (1), Perak (2), Putrajaya/Cyberjaya (1) dan Selangor (10).

Kejadian junaman voltan yang direkod pada tahun 2013 telah menurun kepada 887 kejadian berbanding 1,040 kejadian dalam tahun 2012. Pelbagai punca telah menyumbang kepada kejadian-kejadian tersebut seperti cuaca, gangguan pihak ketiga ke atas talian grid, perlantikan talian-talian dan sebagainya. Bagaimanapun, punca yang tidak diketahui masih lagi tertinggi berbanding dengan punca-punca lain.

Di KHTP, sebanyak 22 insiden junaman voltan dilaporkan berbanding 20 insiden pada tahun 2012. Bilangan pengguna yang terlibat dalam insiden junaman voltan telah menurun sebanyak 74.1% kepada 14 pengguna daripada 54 pengguna tahun 2012. Bilangan pengguna yang paling banyak terlibat dilaporkan pada bulan Oktober 2013, di mana 6 pengguna industri utama yang berteknologi tinggi di KHTP telah terjejas operasinya. Insiden tersebut berpunca daripada pelantikan talian penghantaran 275kV milik TNB dari Junjong ke Gurun Timur yang disebabkan oleh kilat.

Gangguan Bekalan Elektrik

Jumlah gangguan keseluruhan pada sistem bekalan elektrik TNB bagi setiap 1,000 pengguna pada tahun 2013 telah meningkat sebanyak 4.7% daripada 9.56 gangguan bagi setiap 1,000 pengguna tahun 2012 kepada 10.01 gangguan bagi setiap 1,000 pengguna. Daripada jumlah ini, 99.1% adalah daripada gangguan tidak berjadual. Bilangan gangguan tidak berjadual meningkat sebanyak 5% iaitu 9.92 bagi setiap 1,000 pengguna berbanding 9.56 bagi setiap 1,000 pengguna bagi tahun 2012. Manakala gangguan berjadual pula berkurangan sedikit berbanding tahun sebelumnya.

Pada tahun 2013, bilangan gangguan bekalan elektrik keseluruhan bagi setiap 1,000 pengguna di Kulim Hi-Tech Park (KHTP) yang dilaporkan oleh NUR Distribution Sdn. Bhd. telah berkurangan sebanyak 28.9%, iaitu 35.78 gangguan bagi setiap 1,000 pengguna berbanding 50.37 gangguan bagi setiap 1,000 pengguna pada tahun 2012.

Gangguan berjadual mencatatkan peratusan yang tinggi 68.3%, berbanding gangguan tidak berjadual sebanyak 31.7% daripada jumlah keseluruhan gangguan tahun 2013. Gangguan tidak berjadual dan gangguan berjadual bagi setiap 1,000 pengguna telah berkurangan berbanding tahun 2012 iaitu masing-masing sebanyak 27.6% dan 26.6%.

of SARFI_x by system voltage of 11kV, 22kV, 33kV and the overall system, the 22kV system recorded higher SARFI₉₀ compared to 11kV and 33kV systems. Meanwhile, for the overall system, SARFI₉₀ recorded the highest average of incident of 5.91.

In 2013, there were 217 complaints on power quality involving 93 industrial users, an increase of 95.5% compared to 111 complaints in 2012. TNB has provided consultation services in addressing the power quality issues for 24 large power consumers in Peninsular respectively in the State of Johor (4), Kelantan (1), Kuala Lumpur (1), Malacca (1), Negeri Sembilan (3), Pahang (1), Perak (2), Putrajaya/Cyberjaya (1) and Selangor (10).

Voltage dip incidents recorded in 2013 has dropped to 887 incidents compared to 1,040 incidents in 2012. Various causes have contributed to the incidents such as weather, third party interference on the grid, tripping of the lines and others. However, the unknown causes were still the highest contributor compared to others.

In KHTP, 22 incidents of voltage dip were reported compared to 20 incidents in 2012. The number of consumers affected by voltage dip incidents has decreased by 74.1% to 14 users from 54 users in 2012. The highest number of affected consumers was reported in October 2013, involving six high technology customers in KHTP. The incident caused by the tripping of the 275kV TNB transmission line from Junjong to Gurun Timur due to lightning.

Electricity Supply Interruptions

Overall, the total number of interruptions in the electricity supply system of TNB for every 1,000 consumers in 2013 increased by 4.7% from 9.56 interruptions per 1,000 consumers in 2012 to 10.01 interruptions per 1,000 consumers. Of this, 99.1% was from the unscheduled interruption. Number of unscheduled interruptions increased by 5% to 9.92 per 1,000 consumers from 9.56 per 1,000 consumers in 2012. Meanwhile, the scheduled interruptions decreased slightly compared to previous year.

In 2013, the total number of power interruptions per 1,000 consumers in the Kulim Hi-Tech Park (KHTP) reported by NUR Distribution Sdn. Bhd. reduced by 28.9%, which is 35.78 interruptions per 1,000 consumers compared to 50.37 interruptions per 1,000 consumers in 2012.

Scheduled interruptions recorded a high percentage of 68.3%, compared to unscheduled interruption of 31.7% of the overall interruptions in 2013. The unscheduled and scheduled interruptions per 1,000 consumers have decreased compared to 2012, respectively by 27.6% and 26.6%.

PRESTASI SISTEM PEMBEKALAN ELEKTRIK DI SABAH

Sistem Penjanaan

Kecekapan *thermal* stesen-stesen janakuasa diesel telah menurun sekitar 3% hingga 7%. Di Sabah, kebanyakan stesen janakuasa diesel berusia melebihi 20 tahun dan secara purata, faktor degradasi stesen janakuasa akan menurun pada sekitar 3% setiap tahun. Sementara itu, stesen janakuasa gas kitar padu menunjukkan prestasi kecekapan *thermal* yang konsisten berbanding tahun 2012.

EAF di stesen janakuasa kitar padu dan diesel milik IPP di Sabah telah menurun sebanyak 3% berbanding tahun 2012. Sebab utama ialah peningkatan dalam faktor henti tugas tidak berjadual, di mana stesen-stesen tersebut tidak dapat beroperasi kerana perlu diperbaiki atau disenggara bagi mengelakkan kerosakan berlanjutan.

Kadar EUOF bagi stesen-stesen janakuasa diesel milik SESB dan IPP masing-masing mencatatkan peningkatan sebanyak 5% dan 7%. Ini disebabkan oleh kegagalan stesen janakuasa kitar padu semasa operasi *change over* daripada penggunaan gas asli kepada *distillate*. Pada suku kedua tahun 2013, Sabah mengalami gangguan bekalan gas kepada sektor tenaga dan keadaan ini telah memberi sedikit kesan kepada keupayaan stesen-stesen janakuasa kitar padu yang terpaksa menggunakan *distillate* untuk tempoh yang panjang.

Bagi stesen janakuasa hidro SESB, kadar EUOF telah menurun sekitar 9% disebabkan oleh kerja-kerja senggaraan pada peralatan *auto voltage regulator* yang telah dilaksanakan pada tahun 2012. Sehubungan itu, kadar EUOF terendah dicatatkan pada tahun 2013 iaitu sebanyak 1.71%.

Sistem Penghantaran

Negeri Sabah masih lagi menghadapi masalah kekurangan kapasiti penjanaan dan tahap daya harap yang rendah. Keupayaan stesen-stesen sedia ada bagi menampung bekalan elektrik masih rendah sekiranya terjadi henti tugas di stesen-stesen penjanaan yang berkapasiti tinggi. Apabila ini berlaku, pengoperasian sistem bekalan elektrik di Sabah akan terganggu dengan insiden pengurusan dan lucutan beban.

Sistem minit bagi sistem grid di Sabah telah menunjukkan penurunan yang ketara sebanyak 62.81% kepada 26.65 minit pada tahun 2013 berbanding 71.65 minit dalam tahun 2012 (tidak termasuk insiden besar). Penurunan ini memberi gambaran secara purata mengenai peningkatan prestasi sistem penghantaran Sabah Electricity Sdn. Bhd. (SESB) berbanding tahun 2012. Namun begitu, ia masih melebihi sasaran 25 minit.

Terdapat tiga (3) insiden pelantikan pada sistem grid di Sabah yang menyebabkan kehilangan beban melebihi 50 MW yang dilaporkan. Insiden yang terbesar telah berlaku pada 9 Ogos 2013 dengan kehilangan beban sebanyak 59.8 MW serta jumlah tenaga yang tidak dibekalkan sebanyak 3,758.06 MWmin dan menyumbang sebanyak 4.30 sistem minit negeri Sabah. Insiden tersebut disebabkan oleh talian 132kV Beaufort – Penampang terpelantik di kedua-dua penghujung akibat *distance relay* telah beroperasi yang menyebabkan bekalan elektrik ke Labuan, Beaufort, Keningau dan Tenom terputus daripada grid.

THE PERFORMANCE OF ELECTRICITY SUPPLY IN SABAH

Generation System

Thermal efficiency in diesel power stations has decreased around 3% to 7%. In Sabah, most of diesel power stations are over 20 years old and on average, every year the degradation factor of power stations will decrease at about 3%. Meanwhile, the gas-fired combined cycle power stations had shown consistent thermal efficiency compared to 2012.

The EAF in IPPs' combined cycle and diesel power plants in Sabah decreased by 3% compared to 2012. The main reason is the increase of unscheduled shut down where repair and maintenance need to be carried out to avoid further damage.

Diesel power stations owned by SESB and IPPs, recorded an increase in their EUOF by 5% and 7% respectively. This is due to the failure of the combined cycle power plant during the change over from natural gas to distillate. In the second quarter of 2013, Sabah experienced disruption in gas supplies to the power sector and this event has impacted power stations that were forced to use distillates for a long period.

For SESB's hydro power stations, EUOF rate has decreased by about 9% due to the maintenance on auto voltage regulator in 2012. Thus, the lowest EUOF rate was recorded in 2013 at 1.71%.

Transmission system

Sabah still faces a shortage of generating capacity and low level of reliability. Ability of existing stations to system demand is still low if unanticipated shut down at major power stations occur. When this happens, the operation of the electricity supply system in Sabah will be managed through the implementation of demand management and load shedding.

System minutes for the grid system in Sabah has shown a significant decrease of 62.81% to 26.65 minutes in 2013 compared to 71.65 minutes in 2012 (excluding major incidents). It reflects an improvement to Sabah Electricity Sdn. Bhd. (SESB) transmission system performance compared to 2012. However, it is still above the target of 25 minutes.

There were three (3) tripping incidents reported in Sabah grid system that caused load loss of more than 50 MW. The largest incident took place on August 9, 2013 with the load loss of 59.8 MW and the total unsupplied energy was 3,758.06 MWmin which accounted for 4.3 minutes of Sabah's system minutes. The incident was caused by the tripping of 132kV Beaufort-Penampang transmission line at both ends due to the operation of distance relay. The incident caused electricity supply to Labuan, Beaufort, Keningau and Tenom to be disconnected from the grid.

Sistem pengagihan

Pencapaian SAIDI keseluruhan di Sabah bagi tahun 2013 ialah 423.99 minit/pelanggan/tahun iaitu berkurang sebanyak 23.9% daripada 557 minit/pelanggan/tahun pada tahun 2012. Ini disebabkan penurunan SAIDI sistem penjaanaan dan penghantaran sebanyak 40.14% pada tahun 2013. SAIDI pada sistem pengagihan berkurangan sebanyak 6% iaitu daripada 267 minit/pelanggan/tahun pada 2012 kepada 251 minit/pelanggan/tahun pada 2013. Dengan pemantauan berterusan sepanjang 2013, masih terdapat beberapa isu yang menghalang kepada pencapaian SAIDI yang lebih baik. Antaranya ialah kekerapan kejadian kerosakan tidak berjadual pada set janakuasa berkapasiti tinggi, jaringan sistem pembekalan elektrik yang lemah, peralatan yang telah berusia (usang), kerosakan kabel voltan tinggi disebabkan oleh pihak ketiga, pelaksanaan senggaraan yang kurang berkesan dan pengalir voltan tinggi dan voltan rendah tidak bersalut yang masih banyak dalam sistem pembekalan elektrik.

Gangguan Bekalan Elektrik

Bilangan gangguan bekalan elektrik bagi setiap 1,000 pengguna yang berlaku pada sistem pembekalan SESB di Sabah pada tahun 2013 telah berkurang daripada 55.9 gangguan pada tahun 2012 kepada 49.6 gangguan. Bilangan gangguan berjadual turut berkurangan sebanyak 21.3% kepada 3.7 bagi setiap 1,000 pengguna berbanding 4.7 bagi setiap 1,000 pengguna pada tahun 2012. Bilangan gangguan tidak berjadual juga didapati telah berkurang sebanyak 10.2% kepada 45.9 gangguan bagi setiap 1,000 pengguna daripada 51.1 bagi setiap 1,000 pengguna dalam tahun 2012. Walau bagaimanapun, gangguan tidak berjadual masih mencatatkan peratusan yang tinggi iaitu 92.5% daripada jumlah keseluruhan gangguan tahun 2013.

Distribution System

Overall SAIDI in Sabah for 2013 was 423.99 minutes/customer/year, which was a decrease of 23.9% from 557 minutes/customer/year in 2012. This is due to 40.14% reduction in SAIDI of generation and transmission systems in 2013. SAIDI of the distribution system decreased by 6% from 267 minutes/customer/year in 2012 to 251 minutes/customer/year in 2013. With continuous monitoring in 2013, there are still some issues that hinder the achievement of better SAIDI. Among them is the frequent occurrence of unscheduled fault on major generator sets, weak electrical supply system network, old equipment (worn out), high voltage cable damage caused by third parties, less efficient maintenance and wide use of bare high voltage and low voltage conductor in electricity supply system.

Electricity Supply Interruptions

Number of power supply interruptions per 1,000 consumers on SESB supply systems in Sabah in 2013 has reduced from 55.9 interruptions in 2012 to 49.6. The number of scheduled interruptions has also reduced by 21.3% to 3.7 per 1,000 consumers compared to 4.7 per 1,000 consumers in 2012. The number of unscheduled interruptions has decreased by 10.2% to 45.9 interruptions per 1,000 consumers from 51.1 per 1,000 consumers in 2012. However, the unscheduled interruptions still recorded the highest percentage of 92.5% from the total interruptions in 2013.

Profil Negara, Data Utama Ekonomi & Elektrik

Country Profile, Key Economic & Electricity Data

Profil Negara • Country Profile

Keluasan Kawasan • Area	330,803 km ²
Iklim • Climate	Jenis Tropika • Tropical Type Purata Suhu di antara 21°C hingga 32°C Average temperature is between 21°C to 32°C Purata taburan hujan tahunan 3,540 mm Average annual rainfall is 3,540 mm
Populasi • Population	29.9 juta • million
Tenaga Kerja • Labour Force	13.6 juta • million

Data Ekonomi Utama • Key Economic Data

KDNK pada Harga Semasa • GDP at Current Prices	RM 986.7 bilion • billion
KDNK pada Harga Malar 2005 • GDP at Constant 2005 Prices	RM 787.6 bilion • billion
KDNK pada Harga Semasa per Kapita • GDP at Current Prices per Capita	RM 32,948 per Kapita • per Capita
KDNK pada Harga Malar 2005 per Kapita • GDP at Constant 2005 Prices per Capita	RM 26,299 per Kapita • per Capita
PNK pada Harga Semasa • GNI at Current Prices	RM 952.6 bilion • billion
PNK pada Harga Malar 2005 • GNI at Constant 2005 Prices	RM 730.5 bilion • billion
PNK pada Harga Semasa per Kapita • GNI at Current Prices per Capita	RM 31,809 per Kapita • per Capita
PNK pada Harga Malar 2005 per Kapita • GNI at Constant 2005 Prices per Capita	RM 24,431 per Kapita • per Capita
Imbangan Akaun Semasa • Current Account Balance	RM 39.9 bilion • billion
Tabungan Negara Kasar • Gross National Saving	31.2 % (daripada PNK • of GNI)

Data Elektrik Utama • Key Electricity Data

Jumlah Kapasiti Terpasang • Total Electricity Generation	29,728.57 MW
Jumlah Penjanaan Tenaga Elektrik • Total Electricity Generation	140,985.01 GWj • GWh
Jumlah Penggunaan Tenaga Elektrik • Total Electricity Consumption	116,087.51 GWj • GWh
Purata Harga Jualan Elektrik • Electricity Average Selling Price	
• Peninsular Malaysia • Semenanjung Malaysia	33.88 sen/kWj • sen/kWh
• Sabah	29.12 sen/kWj • sen/kWh
• Sarawak	29.87 sen/kWj • sen/kWh

Sumber: The Malaysian Economic in Figure, Bank Negara Malaysia, Jabatan Perangkaan Negara, Tenaga Nasional Berhad, Sabah Electricity Sdn. Bhd., Sarawak Energy Berhad
Source: The Malaysian Economic in Figure, Central Bank of Malaysia, Department of Statistics, Tenaga Nasional Berhad, Sabah Electricity Sdn. Bhd., Sarawak Energy Berhad

Peta Malaysia

Map of Malaysia

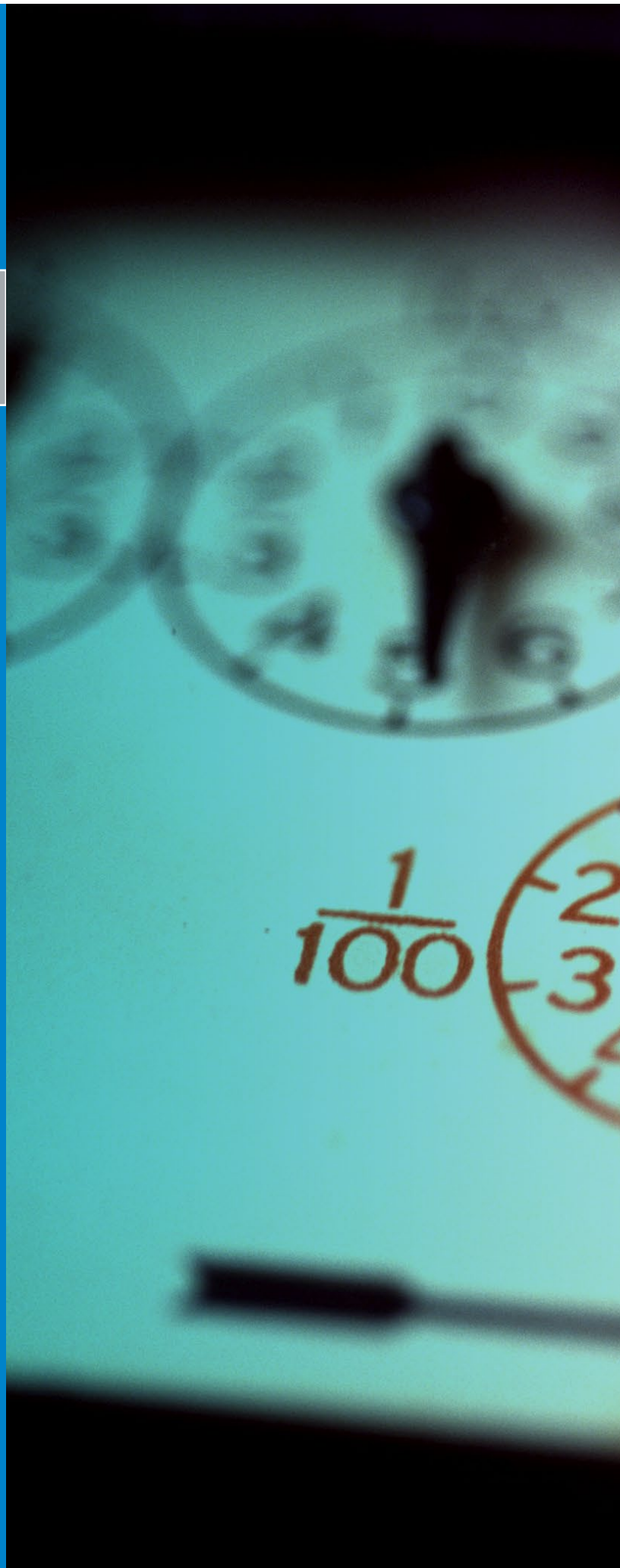


Prestasi Sistem Pembekalan & Perkhidmatan Elektrik

Performance of Electricity Supply System & Services

Prestasi Pembekalan dan Perkhidmatan Elektrik di Semenanjung Malaysia Performance of Electricity Supply and Services in Peninsular Malaysia

14. Sistem Penjana Tenaga Nasional Berhad (TNB) dan Penjana Kuasa Bebas (IPP) di Semenanjung Malaysia
Generation System of Tenaga Nasional Berhad (TNB) and IPPs in Peninsular Malaysia
15. Sistem Penghantaran TNB
Transmission System of TNB
17. Sistem Pengagihan TNB
Distribution System of TNB
19. System Average Interruption Duration Index (SAIDI), System Average Interruption Frequency Index (SAIFI), Customer Average Interruption Duration Index (CAIDI) TNB
21. Kualiti Pembekalan Elektrik TNB
Electricity Supply Quality of TNB
23. Sistem Pengagihan NUR Distribution Sdn. Bhd. (NUR Distribution)
Electricity Distribution System of NUR Distribution Sdn. Bhd. (NUR Distribution)
24. System Average Interruption Duration Index (SAIDI) NUR Distribution Sdn. Bhd.
25. Kualiti Pembekalan Elektrik NUR Distribution Sdn. Bhd.
Electricity Supply Quality of NUR Distribution Sdn. Bhd.
26. Laporan Prestasi Tenaga Nasional Berhad (TNB) – berdasarkan Laporan Guaranteed Service Level (GSL)
Performance Report of Tenaga Nasional Berhad (TNB) – based on Guaranteed Service Level (GSL)
29. Laporan Prestasi Tenaga Nasional Berhad (TNB) – berdasarkan Laporan Minimum Service Level (MSL)
Performance Report of Tenaga Nasional Berhad (TNB) - based on Minimum Service Level (MSL)
36. Laporan Prestasi NUR Distribution Sdn. Bhd.
Performance Report of NUR Distribution Sdn. Bhd.





Sistem Penjana TNB dan Penjana Kuasa Bebas (IPP) di Semenanjung Malaysia Generation System of TNB and IPPs in Peninsular Malaysia

Jadual 1: Purata Kecekapan Thermal (%)

Table 1: Average Thermal Efficiency (%)

Jenis Loji • Plant Type	2009		2010		2011		2012		2013	
	TNB	IPP	TNB	IPP	TNB	IPP	TNB	IPP	TNB	IPP
Kitar Padu Combined Cycle	41.00	44.30	41.20	41.90	40.84	43.98	44.34	43.96	43.30	43.97
Kitar Terbuka Open Cycle	17.40	27.40	22.60	27.30	22.30	27.09	26.29	26.77	26.70	27.38
Konvensional (Minyak/Gas) Conventional (Oil/Gas)	n/a	31.90	25.60	32.30	27.27	30.58	26.6	32.34	27.03	32.68
Konvensional (Arang Batu) Conventional (Coal)	-	34.70	-	33.10	-	35.11	-	35.53	-	35.21

Jadual 2: Purata Faktor Kesediaan Setara (%)

Table 2: Average Equivalent Availability Factor (%)

Jenis Loji • Plant Type	2009		2010		2011		2012		2013	
	TNB	IPP	TNB	IPP	TNB	IPP	TNB	IPP	TNB	IPP
Kitar Padu Combined Cycle	93.20	91.20	90.50	90.60	84.95	88.57	94.14	95.10	83.48	91.60
Kitar Terbuka Open Cycle	97.30	98.40	92.60	97.90	97.56	94.53	94.14	95.10	90.43	84.82
Konvensional (Minyak/Gas) Conventional (Oil/Gas)	99.30	83.20	98.10	88.20	82.46	87.43	88.53	85.42	94.45	82.38
Konvensional (Arang Batu) Conventional (Coal)	-	78.00	-	84.30	-	80.52	-	84.18	-	80.12
Hidro Hydro	95.30	-	86.00	-	92.34	-	90.77	-	90.63	-

Jadual 3: Purata Faktor Henti Tugas Tidak Berjadual Setara (EUOF)

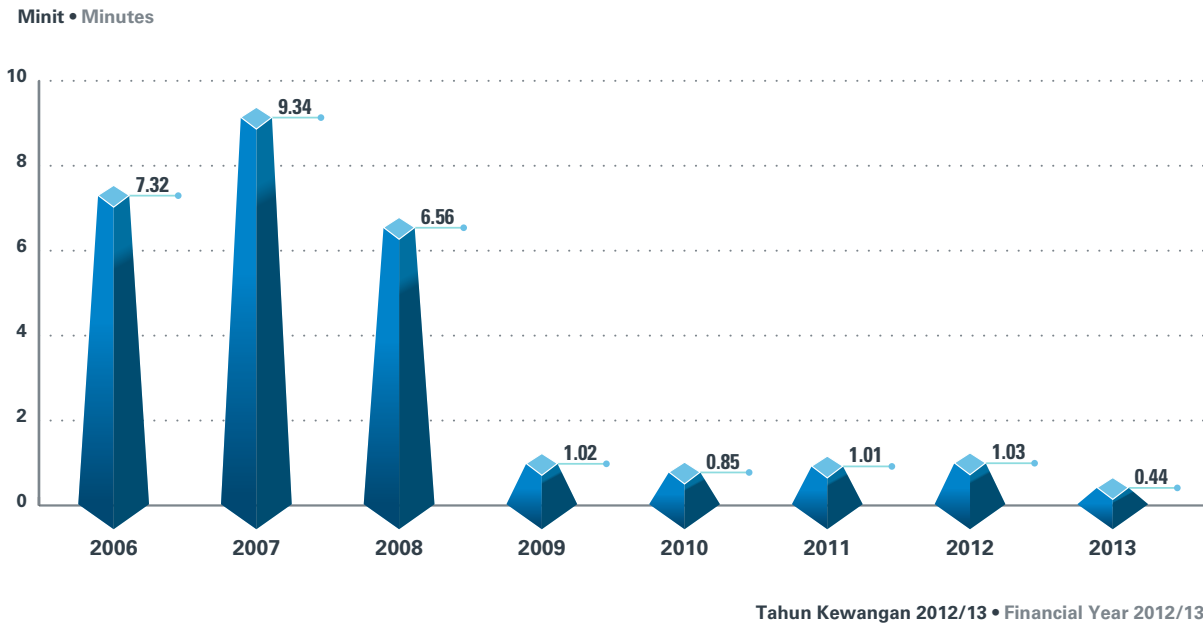
Table 3: Average Equivalent Unplanned Outage Factor (EUOF)

Jenis Loji • Plant Type	2009		2010		2011		2012		2013	
	TNB	IPP	TNB	IPP	TNB	IPP	TNB	IPP	TNB	IPP
Kitar Padu Combined Cycle	1.61	3.31	2.29	2.97	5.50	3.95	3.48	3.27	6.28	2.13
Kitar Terbuka Open Cycle	0.93	0.61	3.99	0.89	0.98	0.71	1.32	1.71	5.89	13.81
Konvensional (Minyak/Gas) Conventional (Oil/Gas)	n/a	11.85	0.33	4.38	17.53	5.62	0.46	2.96	5.55	6.57
Konvensional (Arang Batu) Conventional (Coal)	-	12.40	-	7.77	-	10.61	-	6.07	-	9.58
Hidro Hydro	1.35	-	0.37	-	0.93	-	1.90	-	3.94	-

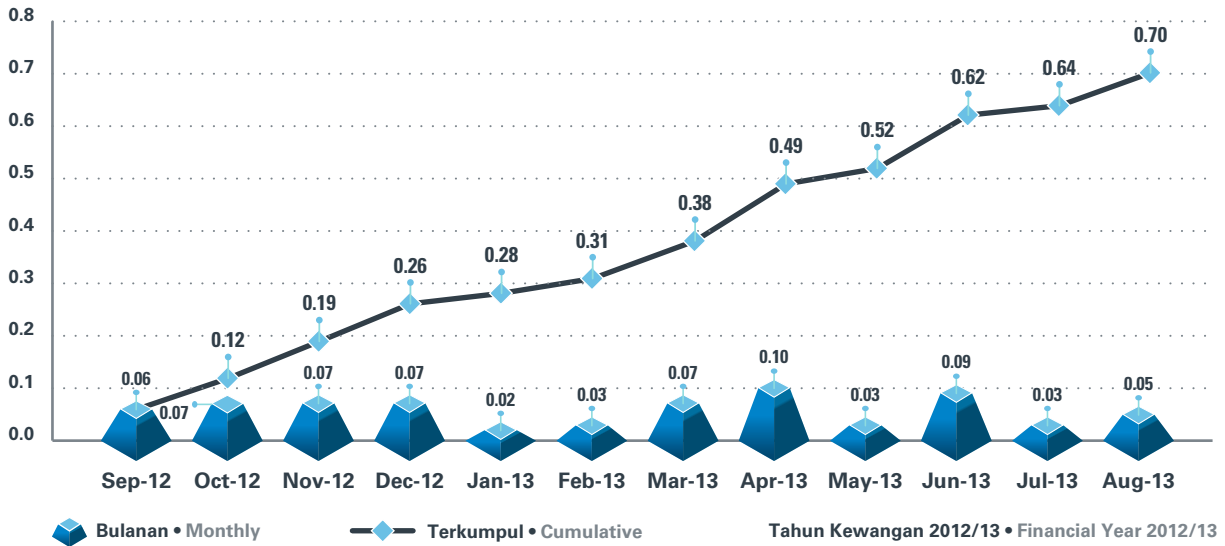
Nota • Note:

n/a – Tiada maklumat • Not available

Carta 1: Delivery Point Unreliability Index (DePUI) - Sistem Minit TNB
Chart 1: Delivery Point Unreliability Index (DePUI) - System Minutes TNB



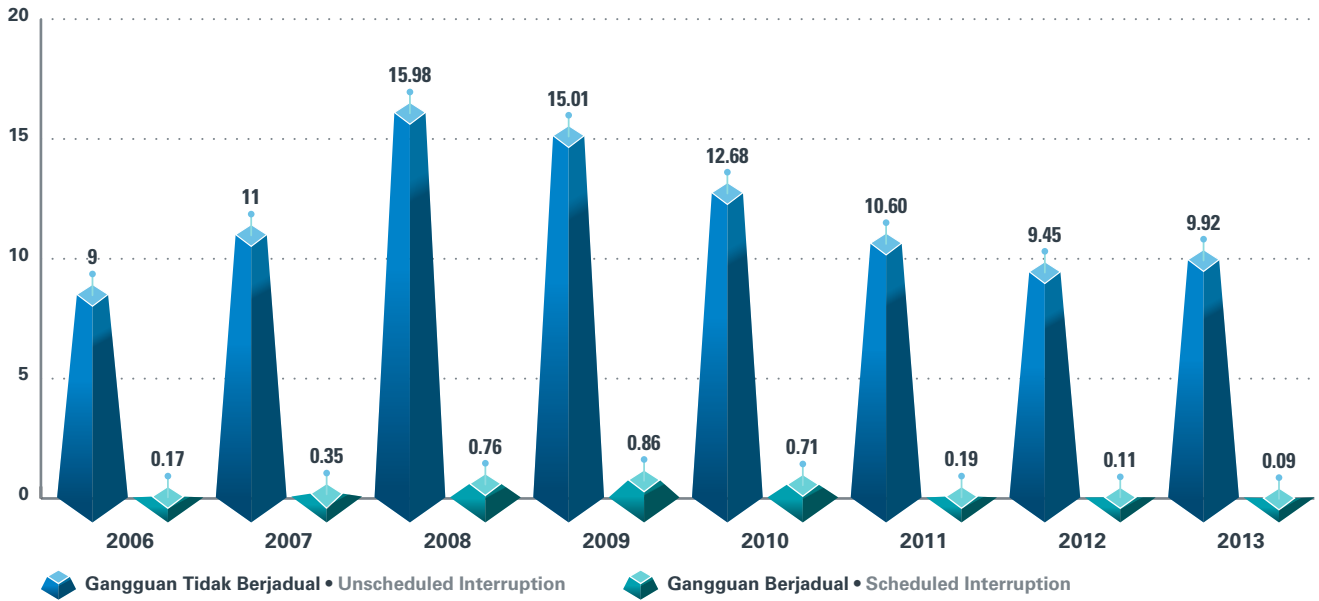
Carta 2: Insiden Pelantikan Bulanan bagi Talian/Kabel per 100 cct-km
Chart 2: Monthly Tripping Incidents for Lines/Cables per 100 cct-km



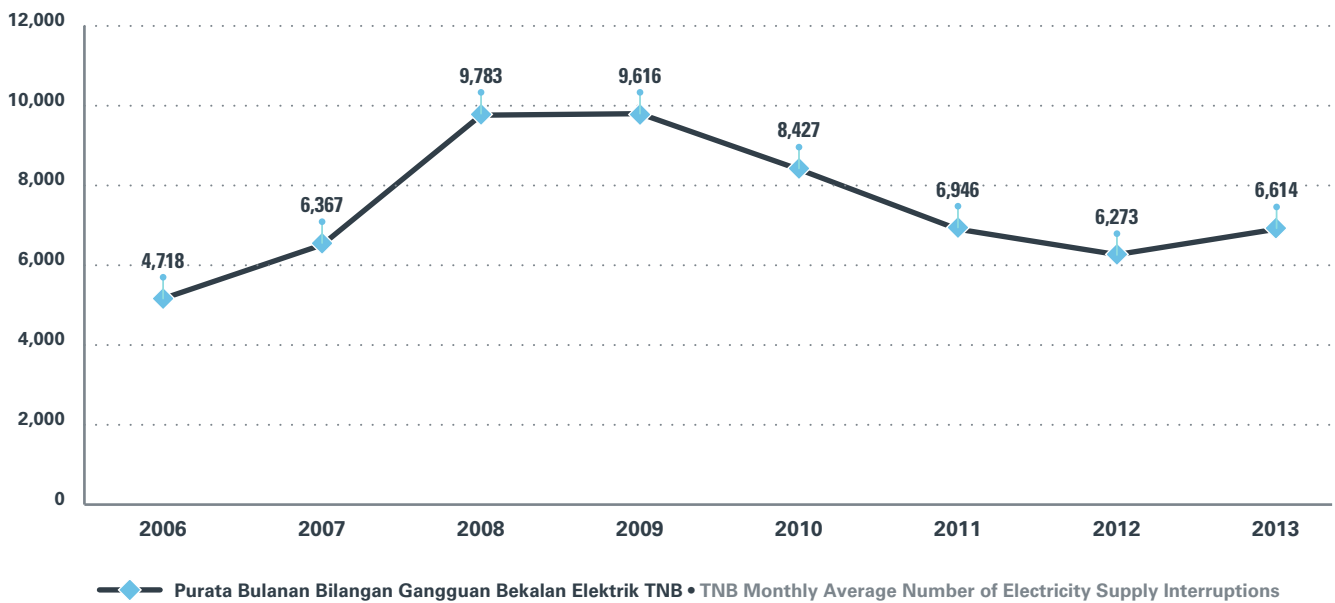
Sistem Pengagihan TNB
Distribution System of TNB

Carta 3: Gangguan Bekalan Elektrik per 1,000 Pengguna
Chart 3: Electricity Supply Interruptions per 1,000 Consumers

Bilangan/1,000 Pengguna • Number/1,000 consumers



Carta 4: Purata Gangguan Bekalan Elektrik Bulanan
Chart 4: Monthly Average Electricity Supply Interruptions



Jadual 6: Gangguan Bekalan Elektrik mengikut Negeri
Table 6: Electricity Supply Interruptions by State

Negeri • State	2008	2009	2010	2011	2012	2013
Perak	11,308	11,673	10,835	8,930	7,598	8,029
Kedah	9,448	9,604	7,901	7,635	6,590	6,642
Johor	19,960	18,873	16,590	12,540	11,935	11,554
Pulau Pinang	10,711	8,610	7,376	5,662	6,269	6,678
Kelantan	12,499	13,615	10,151	8,211	7,843	7,469
Selangor	16,176	16,015	14,569	11,885	9,745	10,968
Pahang	5,760	6,538	5,621	4,226	4,039	4,460
Perlis	1,900	2,029	772	1,240	420	422
Kuala Lumpur	13,962	12,901	11,970	9,620	10,481	9,861
Putrajaya/Cyberjaya	28	8	13	8	7	9
Negeri Sembilan	6,148	6,397	6,461	5,248	4,876	6,264
Melaka	4,529	4,973	4,131	4,772	2,318	3,307
Terengganu	4,965	3,735	3,866	3,370	3,150	3,709
Jumlah • Total	117,394	114,971	100,256	83,347	75,271	79,372

Jadual 7: Gangguan Bekalan Elektrik mengikut Tahap Voltan
Table 7: Electricity Supply Interruptions by Voltage Level

Tahap Voltan • Voltage Level	2008	2009	2010	2011	2012	2013
Voltan Tinggi (66kV dan ke atas) High Voltage (66kV and above)	35	30	24	26	17	14
Voltan Sederhana (6.6kV – 33kV) Medium Voltage (6.6kV – 33kV)	12,671	13,438	12,170	9,681	8,376	9,295
Voltan Rendah (1kV dan ke bawah) Low Voltage (1kV and below)	104,688	101,924	88,932	73,640	66,878	70,063
Jumlah • Total	117,394	115,392	101,126	83,347	75,271	79,372

Jadual 8: Bilangan Gangguan Bekalan Elektrik
Table 8: Number of Electricity Supply Interruptions

Bilangan • Number	2008	2009	2010	2011	2012	2013
Gangguan Tidak Berjadual Unscheduled Interruptions	112,064	108,708	94,940	81,860	74,436	78,647
Gangguan Berjadual Scheduled Interruptions	5,330	6,263	6,011	1,487	835	725
Jumlah Gangguan • Total Interruptions	117,394	115,392	101,126	83,347	75,271	79,372

Nota: Gangguan tidak berjadual meliputi gangguan pada Voltan Rendah, Voltan Sederhana dan Voltan Tinggi
 Note: Unscheduled Interruptions include interruptions at Low Voltage, Medium Voltage and High Voltage

Jadual 9: Peratus Gangguan Bekalan Elektrik Tidak Berjadual mengikut Jenis Gangguan (Tidak Termasuk Gangguan Voltan Tinggi)
Table 9: Percentage of Unscheduled Supply Interruptions by Type of Interruptions (Excluding High Voltage Interruptions)

Kategori • Category	Voltan Rendah Low Voltage	Voltan Sederhana Medium Voltage	Jumlah Total	Peratus Percent
Haiwan • Animal	599	270	869	1%
Auto Reclose		2	2	0%
Kabel • Cable	1,897	2,418	4,315	5%
Konduktor • Conductor	10,973	289	11,262	14%
Feeder Pillar	1,842		1,842	2%
Banjir • Flood	1	2	3	0%
Fius • Fuse	3,836	13	3,849	5%
Kotak Fius • Fuse Box	9,336	24	9,360	12%
Insulated Piercing Connector (IPC)	24,155		24,155	31%
Penebat • Insulator		7	7	0%
Sambungan • Joint	12	4,508	4,520	6%
Jumper		10	10	0%
Pautan • Link	34	5	39	0%
Null		0	0	0%
Lain-lain • Others	22	30	52	0%
Pokok • Tree	10,500	81	10,581	13%
Tiang • Pole	2,618	43	2,661	3%
Relay		25	25	0%
Ribut • Storm	173	28	201	0%
Peralatan Suis • Switchgear		162	162	0%
Penamatan • Termination	215	77	292	0%
Pihak Ketiga • Third party	2,830	1,000	3,830	5%
Alat ubah • Transformer		87	87	0%
Ubah tika • Transient		142	142	0%
Vandalisme	295	72	367	0%
Jumlah • Total	69,338	9,295	78,633	100%

System Average Interruption Duration Index (SAIDI), System Average Interruption Frequency Index (SAIFI), Customer Average Interruption Duration Index (CAIDI) TNB

Jadual 10: SAIDI (Minit/Pelanggan/Tahun) mengikut Tahap Voltan
Table 10: SAIDI (Minutes/Customer/Year) by Voltage Level

Tahap Voltan • Voltage Level	2008	2009	2010	2011	2012	2013
Voltan Tinggi (66kV dan ke atas) High Voltage (66kV and above)	3.21	1.05	1.17	0.94	6.87	0.11
Voltan Sederhana (6.6kV – 33kV) Medium Voltage (6.6kV – 33kV)	68.31	56.72	88.1	63.25	49.3	56.20
Voltan Rendah (1kV dan ke bawah) Low Voltage (1kV and below)	15.79	8.30	6.98	4.93	4.29	4.04
Jumlah • Total	87.3	66.1	96.25	69.11	60.46	60.35

Nota:
 2008 – 2009 : pengukuran SAIDI menggunakan TOMS
 2010 – 2013: pengukuran SAIDI menggunakan Enhanced TOMS

Note:
 2008 – 2009 : SAIDI measured by TOMS
 2010 – 2013: SAIDI measured by Enhanced TOMS

Jadual 11: SAIDI (Minit/Pelanggan/Tahun) mengikut Negeri
Table 11: SAIDI (Minutes/Customer/Year) by State

Negeri • State	2008	2009	2010	2011	2012	2013
Perak	61.26	67.51	194.71	119.74	83.61	78.95
Kedah	116.55	77.21	127.66	87.18	81.36	74.38
Johor	120.47	79.88	119.95	78.03	61.77	70.84
Pulau Pinang	104.43	111.28	109.62	76.56	73.29	68.89
Kelantan	99.21	81.86	85.01	72.78	72.35	69.61
Selangor	69.97	48.86	79.73	61.34	56.69	54.42
Pahang	102.76	61.76	74.35	88.95	62.15	63.70
Perlis	56.83	53.25	64.64	37.80	35.24	36.79
Kuala Lumpur	67.92	47.24	41.94	33.45	33.69	35.85
Putrajaya/Cyberjaya	6.57	0.23	9.08	0.22	8.48	0.99
Negeri Sembilan	79.36	53.32	81.38	55.94	54.60	69.96
Melaka	98.80	60.69	60.47	43.52	45.64	38.11
Terengganu	72.94	49.08	55.57	54.26	50.29	44.64
Semenanjung Malaysia • Peninsular Malaysia	87.31	66.07	96.25	69.11	60.46	60.35

Jadual 12: SAIFI (Bilangan Gangguan/Pelanggan/Year) mengikut Tahap Voltan
Table 12: SAIFI (Number of Interruptions/Customer/Year) by Voltage Level

Tahap Voltan • Voltage Level	2008	2009	2010	2011	2012	2013
Voltan Tinggi (66kV dan ke atas) High Voltage (66kV and above)	0.02	0.02	0.01	0.01	0.01	0.00
Voltan Sederhana (6.6kV – 33kV) Medium Voltage (6.6kV – 33kV)	0.76	0.67	1.17	0.93	0.80	0.87
Voltan Rendah (1kV dan ke bawah) Low Voltage (1kV and below)	0.09	0.06	0.05	0.02	0.00	0.00
Jumlah • Total	0.87	0.76	1.23	0.97	0.81	0.87

Jadual 13: SAIFI (Bilangan Gangguan/Pelanggan/Year) mengikut Negeri
Table 13: SAIFI (Number of Interruptions/Customers/Year) by State

Negeri • State	2008	2009	2010	2011	2012	2013
Perak	0.93	0.86	2.35	1.81	0.21	1.10
Kedah	1.09	0.87	1.76	1.32	0.29	1.11
Johor	0.87	0.67	1.57	0.95	0.12	0.94
Pulau Pinang	1.41	1.50	1.46	1.06	0.16	1.00
Kelantan	1.16	1.25	1.75	1.48	0.24	1.26
Selangor	0.65	0.50	0.95	0.86	0.12	0.76
Pahang	0.96	0.73	0.90	1.24	0.19	1.42
Perlis	0.73	0.68	0.86	0.48	0.05	0.47
Kuala Lumpur	0.52	0.52	0.48	0.44	0.03	0.37
Putrajaya/Cyberjaya	0.03	0.00	0.04	0.00	0.00	0.01
Negeri Sembilan	0.64	0.57	0.87	0.64	0.10	0.73
Melaka	1.03	0.86	0.71	0.60	0.15	0.56
Terengganu	1.22	0.96	1.22	1.29	0.16	1.03
Semenanjung Malaysia • Peninsular Malaysia	0.87	0.76	1.23	0.97	0.81	0.87

Jadual 14: CAIDI (Customer Average Interruption Duration Index) mengikut Tahap Voltan
Table 14: CAIDI (Customer Average Interruption Duration Index) by Voltage Level

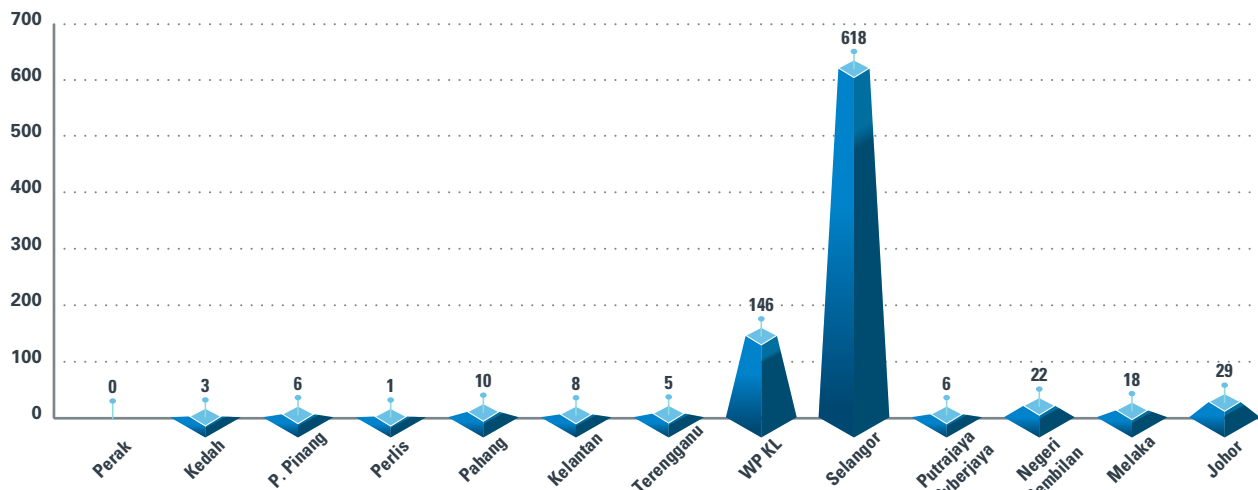
Tahap Voltan • Voltage Level	2008	2009	2010	2011	2012	2013
Voltan Tinggi (66kV dan ke atas) High Voltage (66kV and above)	189.00	47.47	114.6	92.00	687.00	0.00
Voltan Sederhana (6.6kV – 33kV) Medium Voltage (6.6kV – 33kV)	90.00	84.05	75.5	68.04	61.63	64.60
Voltan Rendah (1kV dan ke bawah) Low Voltage (1kV and below)	173.46	133.14	136.9	245.60	429.00	403.00
Jumlah • Total	100.7	87.01	78.3	71.62	74.64	69.37

Jadual 15: CAIDI (Customer Average Interruption Duration Index) mengikut Negeri
Table 15: CAIDI (Customer Average Interruption Duration Index) by State

Negeri • State	2008	2009	2010	2011	2012	2013
Perak	65.57	78.22	82.93	65.39	66.52	71.77
Kedah	106.73	89.14	72.50	55.55	47.45	67.01
Johor	137.88	119.02	76.19	77.25	73.07	75.36
Pulau Pinang	74.06	74.25	75.09	64.43	67.06	68.89
Kelantan	85.70	65.34	48.53	89.94	54.80	55.25
Selangor	108.29	96.95	83.77	63.07	66.77	71.61
Pahang	107.40	84.86	82.16	42.69	57.46	44.86
Perlis	77.76	78.09	75.49	95.73	72.67	78.28
Kuala Lumpur	130.37	91.56	87.30	62.88	98.59	96.89
Putrajaya/Cyberjaya	225.55	98.92	211.99	52.00	35.78	99.00
Negeri Sembilan	123.22	112.06	93.59	79.68	82.21	95.84
Melaka	96.39	70.55	85.14	89.32	73.74	68.05
Terengganu	59.97	50.99	45.72	83.62	49.12	43.34
Semenanjung Malaysia • Peninsular Malaysia	100.70	87.01	78.25	71.62	74.64	69.37

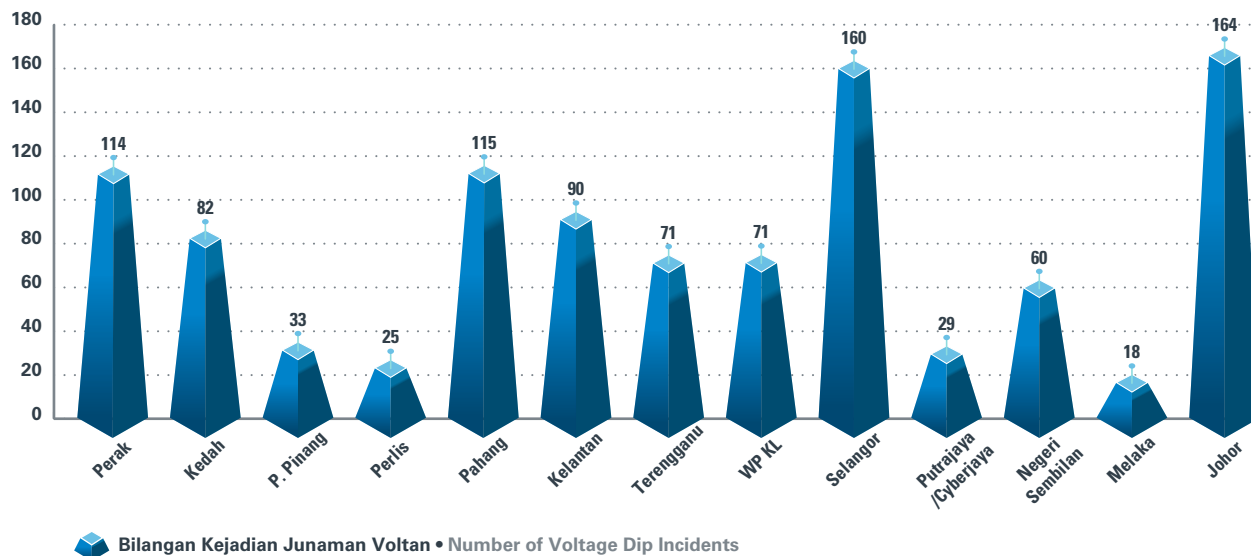
Kualiti Pembekalan Elektrik TNB
Electricity Supply Quality of TNB

Carta 5: Kejadian Voltan Luar Biasa yang Dilaporkan Mengikut Negeri
Chart 5: Reported Overvoltage Incidents by State



 **Bilangan Kejadian Voltan Luar Biasa • Number of Overvoltage Incidents**

Carta 6: Kejadian Junaman Voltan yang dilaporkan di Kawasan Perindustrian Utama mengikut Negeri
Chart 6: Reported Voltage Dip Incidents in Major Industrial Areas by State



Jadual 16: Bilangan Pengguna Terlibat dalam Insiden Junaman Voltan mengikut Negeri
Table 16: Number of Consumers Involved in Voltage Dip Incidents by State

Negeri • State	2008	2009	2010	2011	2012	2013
Perak	5	33	22	13	5	3
Kedah	1	0	2	2	0	2
Johor	9	7	6	7	7	4
Pulau Pinang	17	12	3	6	7	27
Kelantan	0	0	9	1	0	1
Selangor	90	14	91	12	16	28
Pahang	10	2	4	3	1	7
Perlis	0	0	0	0	0	0
Kuala Lumpur	34	32	18	1	6	8
Putrajaya/Cyberjaya	0	0	0	0	0	2
Negeri Sembilan	45	7	18	3	3	6
Melaka	0	0	2	3	2	3
Terengganu	1	0	0	0	1	2
Semenanjung Malaysia • Peninsular Malaysia	212	107	175	51	48	93

Jadual • Table 17: SARFI (System Average RMS Frequency Index)

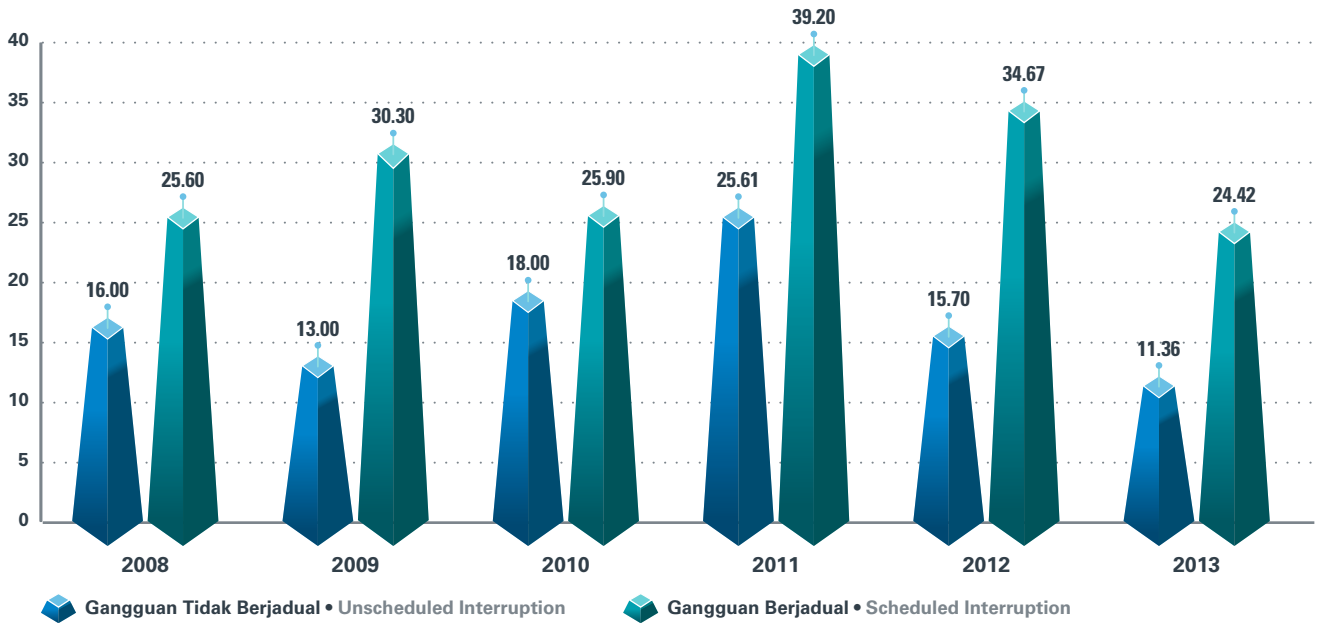
Sistem TNB • TNB System	SARFI ₉₀	SARFI ₈₀	SARFI ₇₀
11kV	6.3	3.7	2.1
22kV	7.8	5.6	3.9
33kV	8.1	4.1	2.9
Sistem keseluruhan • Overall system	6.8	3.9	2.6

Jadual 18: SARFI (System Average RMS Frequency Index): Perbandingan dengan Syarikat Utiliti yang Terpilih
Table 18: SARFI (System Average RMS Frequency Index): Comparison with Selected Power Utility Companies

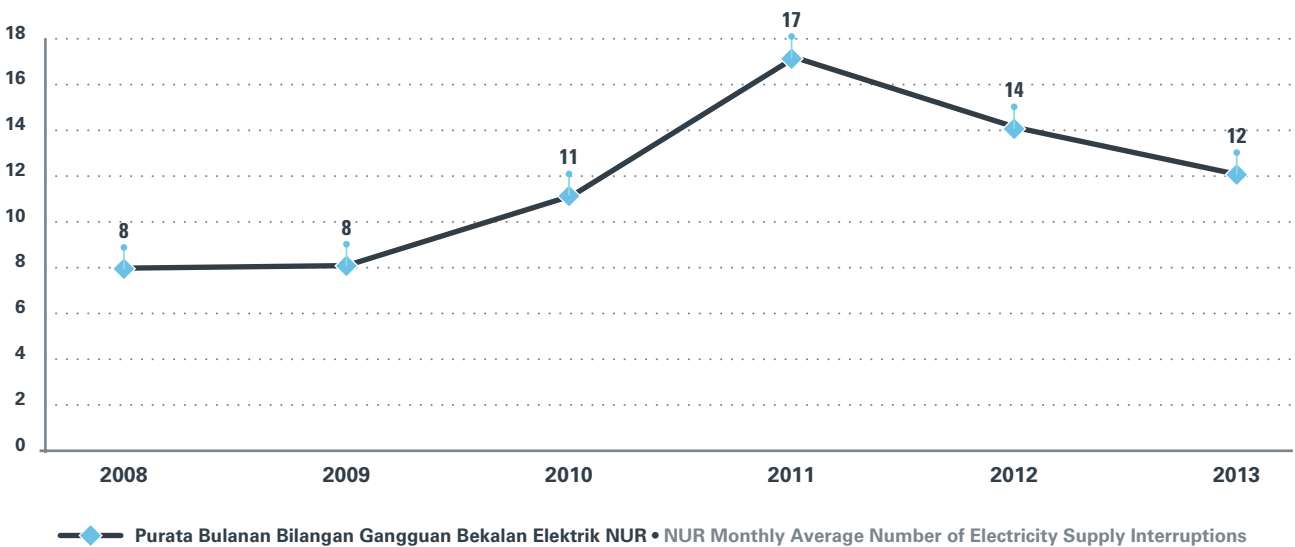
Utiliti Elektrik • Electricity Utility	SARFI ₉₀	SARFI ₈₀	SARFI ₇₀
Singapore Power Grid	3.5	1.1	0.7
Tenaga Nasional Berhad	5.9	3.1	1.9

Sistem Pengagihan NUR Distribution Sdn. Bhd. (NUR Distribution)
Electricity Distribution System of NUR Distribution Sdn. Bhd. (NUR Distribution)

Carta 7: Gangguan Bekalan Elektrik per 1,000 Pengguna
Chart 7: Electricity Supply Interruptions per 1,000 Consumers



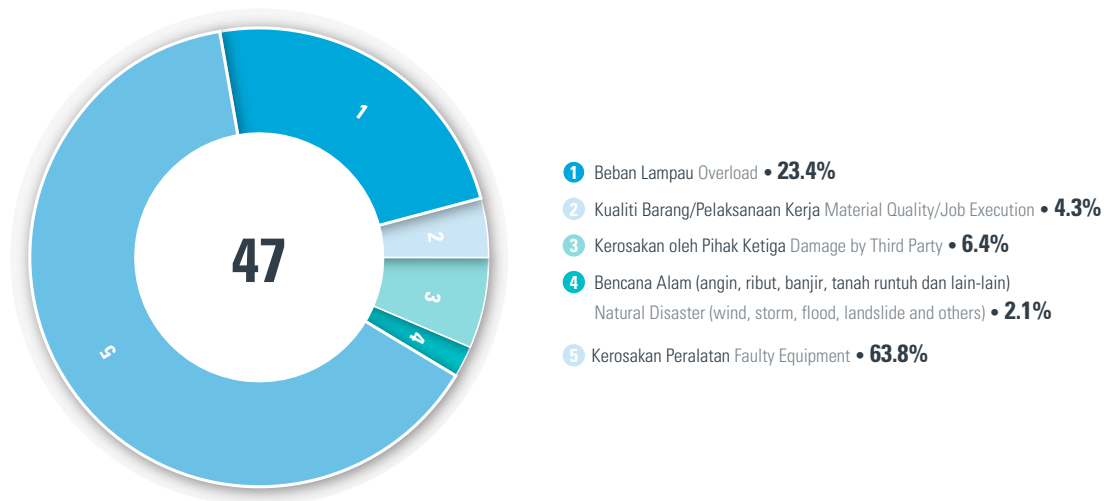
Carta 8: Purata Gangguan Bekalan Elektrik Bulanan
Chart 8: Monthly Average Electricity Supply Interruptions



Jadual 19: Bilangan Gangguan Bekalan Elektrik
Table 19: Number of Electricity Supply Interruptions

Bilangan • Number	2008	2009	2010	2011	2012	2013
Gangguan Tidak Berjadual Unscheduled Interruptions	35	30	53	81	53	47
Gangguan Berjadual Scheduled Interruptions	56	70	76	124	117	101
Jumlah Gangguan • Total Interruptions	91	100	129	205	170	148

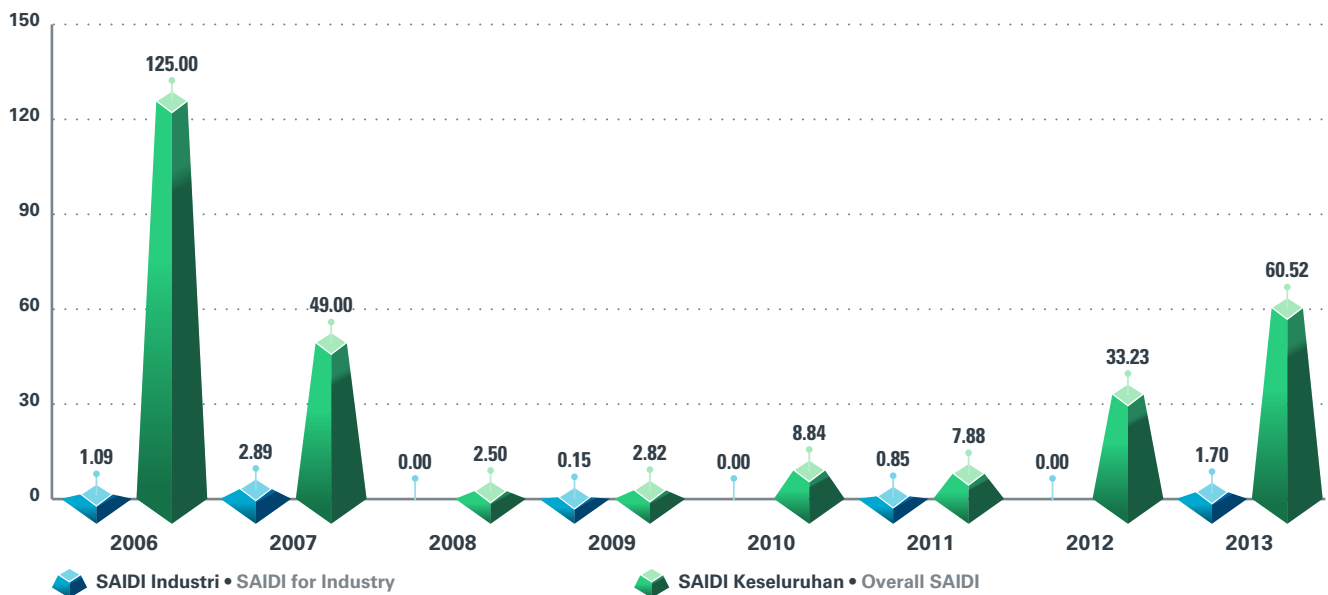
Carta 9: Peratus Gangguan Bekalan Elektrik Tidak Berjadual mengikut Jenis Gangguan
Chart 9: Percentage of Unscheduled Supply Interruption by Type of Interruptions



Bilangan Keseluruhan Gangguan Bekalan Elektrik Tidak Berjadual • Total Number of Unscheduled Interruptions = 47

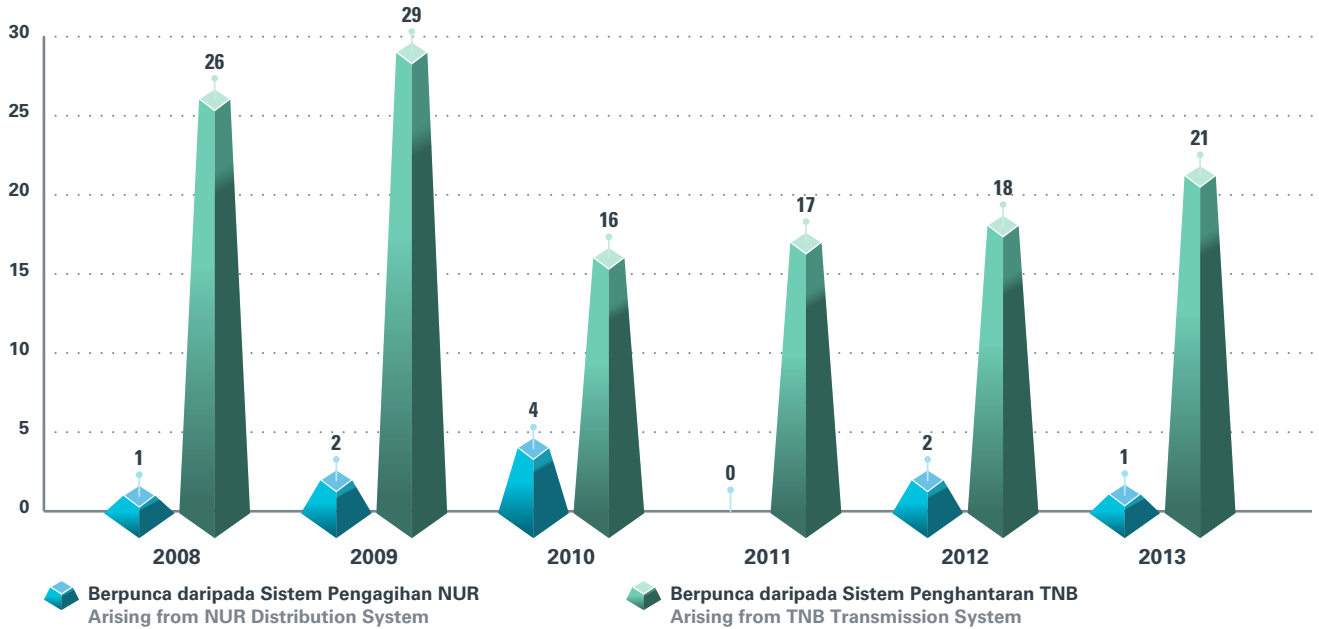
SAIDI NUR Distribution
SAIDI of NUR Distribution

Carta 10: SAIDI (Minit/Pelanggan/ Tahun)
Chart 10: SAIDI (Minutes/Customer/Year)

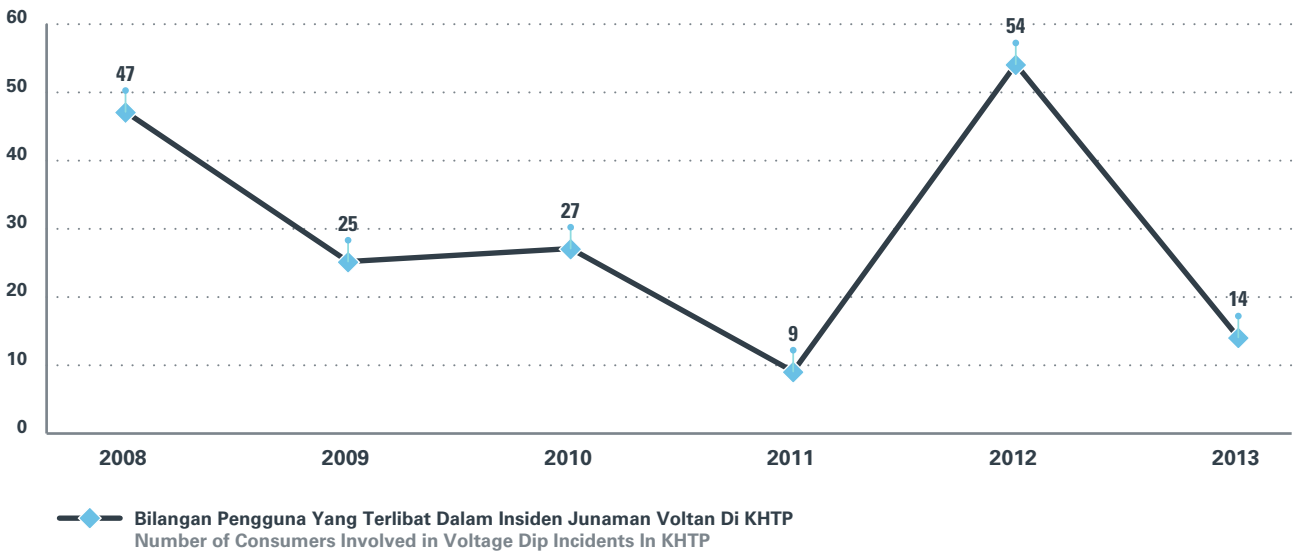


Kualiti pembekalan Elektrik NUR Distribution Sdn. Bhd.
Electricity Supply Quality of NUR Distribution Sdn. Bhd.

Carta 11: Kejadian Junaman Voltan yang Dilaporkan di KHTP
Chart 11: Reported Voltage Dip Incidents in KHTP



Carta 12: Bilangan Pengguna yang Terlibat dengan Insiden Junaman Voltan
Chart 12: Number of Consumers Involved in Voltage Dip Incidents



Jadual 20: SARFI (System Average RMS Frequency Index)
Table 20: SARFI (System Average RMS Frequency Index)

Kategori • Category	2008	2009	2010	2011	2012	2013
Berpunca daripada Sistem Pengagihan NUR Caused by NUR Distribution System	0	1	1	0	1	1
Berpunca daripada Sistem Penghantaran TNB Caused by TNB Transmission System	2	1	1	0	2	5

Item	Service Dimension	Service Indicator	Target	Penalty	Putrajaya/ Cyberjaya	Perlis	Kedah	Pulau Pinang	Perak	Selangor	Malaka	Pahang	Terengganu	Kuala Lumpur	Negeri Sembilan	Johor	Kelantan	Total
		Total service connection			0	1,252	7,796	4,054	8,350	4,298	2,813	6,031	7,752	2,812	2,707	5,886	9,405	63,156
		Total service connection not completed in 7 working days			0	0	108	79	548	386	20	100	19	292	54	97	697	2,400
		Total penalty (RM)			0	0	5,400	3,950	27,400	19,300	1,000	5,000	950	14,600	2,700	4,850	34,850	120,000
		Time taken to implement service connection (underground cable) requiring low voltage cable installation work																
		Total service connection	21 working days	RM50	130	60	259	263	271	1,768	315	266	358	1,552	430	720	367	6,759
		Total service connection not completed in 21 working days			0	0	24	32	26	145	4	16	0	68	8	39	27	389
		Total penalty (RM)			0	0	1,200	1,600	1,300	7,250	200	800	0	3,400	400	1,950	1,350	19,450

Item	Service Dimension	Service Indicator	Target	Penalty	Putrajaya/ Cyberjaya	Perlis	Kedah	Pulau Pinang	Perak	Selangor	Malaka	Pahang	Terengganu	Kuala Lumpur	Negeri Sembilan	Johor	Kelantan	Total	
GSL 4	Providing Supply	Time taken to connect new electricity supply for individual domestic low voltage consumer	5 working days	RM50	454	1,666	14,357	11,386	14,618	22,226	6,240	8,173	8,476	12,235	7,961	19,124	9,546	136,462	
		Total supply connection			0	0	71	54	178	489	5	65	1	172	25	64	41	1,165	
		Total supply connection not completed in 5 working days			0	0	3,550	2,700	8,900	24,450	250	3,250	50	8,600	1,250	3,200	2,050	58,250	
GSL 5	Customer Contact	Disconnection of supply according to the applicable legislation or disconnection procedures	0	RM100	9,543	4,224	138,358	76,713	133,053	184,874	51,291	32,725	38,656	79,771	56,796	76,543	68,615	951,162	
		Total disconnection			0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
		Total disconnection not done with procedures			0	0	0	0	0	100	0	0	0	0	0	0	0	0	0
Total Penalty in RM for GSL 1, 2, 3, 4, 5 according to states					0	2,270	1,534,870	229,740	688,290	2,732,680	5,950	493,050	7,920	1,396,600	125,590	1,633,590	93,900	8,944,450	
Total Penalty in RM - Nationwide (GSL 1, 2, 3, 4, 5)					8,944,450														

Nota: GSL 1 & 2 hanya akan berkuatkuasa selepas Sistem Maklumat Korporat Geospasial (CGIS) disiapkan
 Note: GSL 1 & 2 will only take effect after the Corporate Geospatial Information System (CGIS) is completed.

Sumber • Source: Tenaga Nasional Berhad

Item	Service Indicator	Service Standard	Putrajaya/ Cyberjaya	Perlis	Kedah	Pulau Pinang	Perak	Selangor	Melaka	Pahang	Terengganu	Kuala Lumpur	Negeri Sembilan	Johor	Kelantan	Total/ Average %
2	Quality of Supply															
	2a. Time taken to rectify voltage complaint or limit violation															
	Total complaints received	< 2 days	2	0	19	5	40	9	0	3	51	33	6	15	8	191
	Total complaints solved less than 2 days		1	0	18	4	37	2	0	3	48	25	5	8	3	154
	% Compliance		50.00%	None	94.74%	80.00%	92.50%	22.22%	None	100.00%	94.12%	75.76%	83.33%	53.33%	37.50%	80.63%
2	2b. Time taken to correct voltage complaint which requires network reinforcement															
	Total complaints received	< 180 days	0	1	0	1	2	2	0	2	3	0	1	2	2	16
	Total complaints solved less than 180 days		0	1	0	2	2	2	0	2	3	0	1	2	2	16
	% Compliance		None	100.00%	None	100.00%	100.00%	100.00%	None	100.00%	100.00%	None	100.00%	100.00%	100.00%	100.00%
	2c. Time taken to complete investigation of over voltage and under voltage complaints from complaint received date	< 30 working days														
	Total complaints received		0	4	16	18	3	52	7	2	88	20	9	14	16	249

Item	Service Indicator	Service Standard	Putrajaya/ Cyberjaya	Perlis	Kedah	Pulau Pinang	Perak	Selangor	Melaka	Pahang	Terengganu	Kuala Lumpur	Negeri Sembilan	Johor	Kelantan	Total/ Average %
	Total complaints solved less than 30 working days		0	4	16	18	3	52	7	2	88	18	9	14	16	247
	% Compliance		None	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	90.00%	100.00%	100.00%	100.00%	99.20%
	Providing Supply															
	3a. Time taken to process electricity supply application and to reply to applicant															
3	Total no. of contribution charge letters issued	< 14 days	459	1,456	12,403	10,946	13,455	21,612	5,546	6,967	6,464	11,574	7,377	17,230	7,406	122,895
	Total no. of contribution charge letters issued less than 14 days		459	1,456	12,251	10,915	13,414	21,243	5,533	6,931	6,454	11,527	7,368	17,090	7,068	121,709
	% Compliance		100.00%	100.00%	98.77%	99.72%	99.70%	98.29%	99.77%	99.48%	99.85%	99.59%	99.88%	99.19%	95.44%	99.03%
	3b. Time taken to implement electrification scheme requiring new substations after handing over of substation building (up to 33kV) by TNB	< 120 days														
3	Total no. of projects given supply		14	8	91	122	72	425	44	81	40	136	84	256	17	1,390

Item	Service Indicator	Service Standard	Putrajaya/ Cyberjaya	Perlis	Kedah	Pulau Pinang	Perak	Selangor	Melaka	Pahang	Terengganu	Kuala Lumpur	Negeri Sembilan	Johor	Kelantan	Total/ Average %
	No. of contribution charge letters issued		32	15	44	226	163	775	42	101	66	153	157	454	78	2,306
	No. of contribution charge letters issued less than 60 days		30	15	23	214	152	741	42	95	58	145	150	429	62	2,156
	% Compliance		93.75%	100.00%	52.27%	94.69%	93.25%	95.61%	100.00%	94.06%	87.88%	94.77%	95.54%	94.49%	79.49%	93.50%
	Customer Contact															
	4a. Time taken to reply to written enquiry or complaint															
	Total written enquiries/complaints received	< 7 working days	4	0	148	201	158	871	124	110	220	584	116	415	88	3,039
	Total written enquiries/complaints replied less than 7 working days		4	0	147	199	157	867	124	109	220	582	116	415	87	3,027
4	% Compliance		100.00%	None	99.32%	99.00%	99.37%	99.54%	100.00%	99.09%	100.00%	99.66%	100.00%	100.00%	98.86%	99.61%
	4b. Average queuing time at customer service counter															
	Total customers served	< 20 minutes	30,838	67,968	560,118	563,506	625,024	918,440	314,758	293,678	191,090	630,281	298,781	721,704	176,947	5,393,133
	Total customers served less than 20 minutes		30,680	66,078	503,143	531,805	538,238	812,046	300,884	279,641	184,605	568,207	290,536	668,107	165,782	4,939,752
	% Compliance		99.49%	97.22%	89.83%	94.37%	86.11%	88.42%	95.59%	95.22%	96.61%	90.15%	97.24%	92.57%	93.69%	91.59%

Item	Service Indicator	Service Standard	Putrajaya/ Cyberjaya	Perlis	Kedah	Pulau Pinang	Perak	Selangor	Melaka	Pahang	Terengganu	Kuala Lumpur	Negeri Sembilan	Johor	Kelantan	Total/ Average %
	4c. Average time taken by customer service officer at CMC 15454 to pick up ringing telephone															
	Total incoming calls received	< 30 seconds	2,429,138	2,429,138	2,429,138	2,429,138	2,429,138	2,429,138	2,429,138	2,429,138	2,429,138	2,429,138	2,429,138	2,429,138	2,429,138	31,578,794
	Total incoming calls answered less than 30 seconds		2,310,402	2,310,402	2,310,402	2,310,402	2,310,402	2,310,402	2,310,402	2,310,402	2,310,402	2,310,402	2,310,402	2,310,402	2,310,402	30,035,226
	% Compliance		95.11%	95.11%	95.11%	95.11%	95.11%	95.11%	95.11%	95.11%	95.11%	95.11%	95.11%	95.11%	95.11%	95.11%
	Metering Services															
	5a. Time taken to attend to meter problem upon official notification/request by the consumer (appointment, visit, testing, etc)															
	No. of appointments, visit, testing completed	< 2 working days	254	233	437	980	3,564	2,033	1,109	374	870	1,872	1,244	7,719	1,096	21,785
	No. of appointments, visit, testing completed less than 2 working days		251	233	424	980	3,364	2,007	1,042	340	868	1,813	1,228	7,627	912	21,089
	% Compliance		98.82%	100.00%	97.03%	100.00%	94.39%	98.72%	93.96%	90.91%	99.77%	96.85%	98.71%	98.81%	83.21%	96.81%

Item	Service Indicator	Service Standard	Putrajaya/ Cyberjaya	Perlis	Kedah	Pulau Pinang	Perak	Selangor	Melaka	Pahang	Terengganu	Kuala Lumpur	Negeri Sembilan	Johor	Kelantan	Total/ Average %
	5b. Time taken to respond to metering problem or dispute upon official notification/request by the consumer (replace, relocate, etc)															
	No. of meter replacement/relocation completed	< 3 working days	21	44	321	427	3,082	947	322	235	841	1,717	1,066	6,369	829	16,221
	No. of meter replacement/relocation completed less than 3 working days		21	44	314	424	2,809	874	321	233	718	1,699	1,051	6,282	791	15,581
	% Compliance		100.00%	100.00%	97.82%	99.30%	91.14%	92.29%	99.69%	99.15%	85.37%	99.95%	98.59%	98.63%	95.42%	96.05%
	5c. Time interval between successive rendering of bill(s)															
	Total no. of customers (OPC)	1 month	413,124	910,932	7,367,654	7,066,975	9,801,401	19,404,633	3,571,349	5,377,056	3,776,687	12,673,806	4,789,736	13,794,118	4,992,587	93,940,058
	Total no. of billed customers		413,111	910,932	7,367,514	7,066,941	9,801,338	19,403,613	3,571,334	5,376,755	3,776,676	12,673,619	4,789,697	13,793,647	4,992,520	93,937,697
	% Compliance		100.00%	100.00%	100.00%	100.00%	100.00%	99.99%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	Average 12-mth % Compliance		93.98%	99.33%	93.18%	97.05%	96.54%	92.37%	98.22%	97.86%	96.58%	95.29%	97.50%	95.24%	89.31%	96.33%

Laporan Prestasi NUR Distribution Sdn. Bhd.
Performance Report of NUR Distribution Sdn. Bhd.

Details	2009	2010	2011	2012	2013
1. Connection of Electricity Supply					
A. Change of Consumers					
• No. of applications	6	13	63	47	55
• Percentage of connection within 1 working day after an appointment for connection	100%	100%	100%	100%	100%
B. New Supply (Low Voltage)					
i. Individual Applications Under Normal Conditions					
• No. of applications	120	594	207	162	756
• Percentage of connection within 1 working day after an appointment for connection	100%	100%	100%	100%	100%
ii. Bulk Supply Application And Housing Schemes					
• No. of applications	0	0	0	0	0
• Percentage of connection within 1 week after an appointment for connection	n/a	n/a	n/a	n/a	n/a
2. Supply Restoration After Breakdowns					
i. Reports					
• No. of reports	0	0	0	0	0
• Percentage of consumers being given report numbers	n/a	n/a	n/a	n/a	n/a
ii. Minor Breakdowns					
• No. of minor breakdowns	13	33	40	11	14
• Percentage of breakdown rectified within 2 hours	86.7%	93.9%	80.0%	72.7%	85.7%
iii. Major/Extra Ordinary Breakdowns					
• No. of major breakdowns	15	20	41	42	33
• Percentage of restoration within 24 hours	100%	85%	95.1%	97.6%	93.9%
3. Supply Reconnection After Disconnection					
• No. of supply disconnections	85	33	122	181	455
• No. of consumer bills paid before 1:00 p.m. on disconnection day	85	33	122	181	455
• Percentage of supply reconnection on the same day or bills paid before 1:00 p.m.	100%	100%	100%	100%	100%
4. Supply Interruptions Which Are Planned/ Scheduled					
• No. of scheduled interruptions	40	46	79	77	72
• Percentage of consumers given 7 days notice before scheduled interruptions	95%	91.3%	91.1%	98.7%	95.8%
5. Meter Reading					
• No. of consumers with estimated readings exceeding 2 consecutive months	32	73	23	46	59
• Notice given to customers with estimated readings exceeding 2 consecutive months (%)	100%	100%	100%	100%	100%

Details	2009	2010	2011	2012	2013
6. Enquiries/Written Complaints From Consumers					
i. Written enquiries including question regarding accounts/bills					
• No. of written complaints received	115	93	84	82	76
• Percentage of reply within 5 working days	100%	100%	100%	100%	100%
7. Service Counter					
• Percentage of consumers that the waiting time should not exceed 20 minutes	n/a	n/a	n/a	n/a	n/a
8. Appointment for Meter Accuracy Check					
• No. of appointments for meter accuracy check	5	8	6	1	2
• Percentage of meter accuracy check carried out within 1 working day	100%	100%	100%	100%	100%
9. Meter Replacement					
• No. of meter replacement	5	3	6	12	12
• Percentage of meter replacement within 2 working days	100%	100%	100%	100%	100%
10. Appointment With Consumers					
i. For appointments Outside NUR Premises					
• No. of appointments where NUR officers arrived not later than 15 minutes from the agreed time	184	648	276	265	912
ii. Postponement by NUR					
• Percentage of subsequent appointment made within 1 working day	100%	100%	100%	100%	100%
11. Deposits					
• No. of consumers found after 6 months that their deposits exceed average consumption of 2 months	0	0	0	0	0
• Percentage of consumers who have the excess deposits returned	n/a	n/a	n/a	n/a	n/a
12. Refund of Consumer Deposits					
• No. of consumers who have forwarded all required documents for refund of deposits	124	102	111	121	161
• Percentage of consumers who have their deposits refunded within 15 working days	100%	100%	100%	100%	100%
13. Collection					
• Percentage of proof of payment sent to payment via mail within 5 working days	100%	100%	100%	100%	100%

Details	2009	2010	2011	2012	2013
14. Supply Disconnection					
i. With 24 hours Notice					
• No. of disconnections due to dangerous consumer installations	0	0	0	0	0
• No. of disconnections due to suspicion of theft of electricity	0	0	0	0	0
• No. of disconnections due to electricity meter being damaged	0	0	0	0	0
ii. Without Any Notice					
• No. of disconnections due to failure to pay bills within 15 days after issuance of bill	0	0	0	0	0
• No. of disconnections due to failure to pay additional deposits within 7 days from the date of notice	86	45	142	145	358
• No. of disconnections of installations which are dangerous	0	0	0	0	0
15. Special Consumers Who Face Problems in Paying Electric Bills					
• No. of handicapped and senior consumers who face problems in paying electric bills, Special arrangement by NUR to collect from handicapped and senior consumers	0	0	0	0	0
16. Voltage Outside Standard					
i. No enhancement Work on Network is Required					
• No. of complaints	6	3	10	5	1
• Percentage of complaints settled within 2 days from the date of complaint	100%	100%	100%	100%	100%
ii. Network Enhancement Work is Required					
• No. of complaints	0	0	0	0	0
• Percentage of complaints settled within 6 months from the date of complaint	n/a	n/a	n/a	n/a	n/a
17. New/Increase of Supply Application Reply					
i. No New Substation Required					
• No. of applications	3	7	12	12	7
• Percentage of applications being replied within 1 weeks from the date of application	100%	100%	100%	100%	100%
ii. New Substation Required					
• No. of applications	2	0	4	0	0
• Percentage of applications being replied within 2 weeks from the date of application	100%	n/a	100%	n/a	n/a

Details	2009	2010	2011	2012	2013
18. Transferring of Meter Location Upon Consumer Request					
<ul style="list-style-type: none"> No. of applications for transferring of meter location upon consumer which was felt as necessary and applicable 	2	7	8	14	28
<ul style="list-style-type: none"> Percentage of an applications which was necessary and being felt as applicable was settled within 7 working days 	100%	100%	100%	100%	100%
19. Education of Energy Efficiency					
<ul style="list-style-type: none"> No. of consumers education programmes on energy efficiency and electricity accident, including the activities near installation and electricity lines 	4	4	4	4	4
20. Power Quality Improvement					
<ul style="list-style-type: none"> No. of activities to improve power quality 	66	49	61	56	52

Nota • Note:

n/a – Tiada maklumat • Not available

Sumber • Source: NUR Distribution Sdn. Bhd.

Prestasi Pembekalan dan Perkhidmatan Elektrik di Sabah

Performance of Electricity Supply and Services in Sabah

- 42.** Sistem Penjanaan Sabah Electricity Sdn. Bhd. (SESB) dan Penjana Kuasa Bebas (IPP) di Sabah
Generation System of Sabah Electricity Sdn. Bhd. (SESB) and Independent Power Producers (IPPs) in Sabah
- 42.** Sistem Penghantaran SESB
Transmission System of SESB
- 43.** Sistem Pengagihan SESB
Distribution System of SESB
- 44.** SESB System Average Interruption Duration Index (SAIDI), System Average Interruption Frequency Index (SAIFI), Customer Average Interruption Duration Index (CAIDI)
- 46.** Prestasi Perkhidmatan SESB
Service Performance of SESB





Sistem Penjana Sabah Electricity Sdn. Bhd. (SESB) dan Penjana Kuasa Bebas (IPP) di Sabah
Generation System of Sabah Electricity Sdn. Bhd. (SESB) and Independent Power Producers (IPPs) in Sabah

Jadual 1: Purata Kecekapan Thermal (%), Faktor Kesediaan Setara (EAF) (%) dan Faktor Henti Tugas Tidak Berjadual Setara (EUOF) (%)

Table 1: Average Thermal Efficiency (%), Equivalent Availability Factor (EAF) (%) and Equivalent Unplanned Outage Factor (EUOF) (%)

Jenis Loji • Plant Type	Purata Kecekapan Thermal (%) Average Thermal Efficiency (%)				EAF (%)				EUOF (%)			
	2012		2013		2012		2013		2012		2013	
	SESB	IPP	SESB	IPP	SESB	IPP	SESB	IPP	SESB	IPP	SESB	IPP
Kitar Padu Combined cycle	26.73	38.72	25.07	39.25	73.43	93.92	76.96	91.95	6.59	1.88	6.11	4.24
Diesel Diesel	27.72	38.20	20.72	35.06	60.76	74.57	63.43	71.21	20.77	28.81	27.91	23.66
Hidro Hydro	-	-	-	-	86.23	-	89.24	-	10.34	-	1.71	-

Sistem Penghantaran Sabah Electricity Sdn. Bhd. (SESB)
Transmission System of Sabah Electricity Sdn. Bhd. (SESB)

Jadual 2: Pelantikan Bulanan bagi Sistem Penghantaran dengan Kehilangan Beban sebanyak 50 MW dan ke Atas
Table 2: Monthly Trippings of Transmission System with Load Loss of 50 MW and Above

Petunjuk • Indicator	Jan Jan	Feb Feb	Mac Mar	Apr Apr	Mei May	Jun Jun	Jul Jul	Ogos Aug	Sep Sept	Okt Oct	Nov Nov	Dis Dec
Bilangan Pelantikan Tanpa Lucutan Beban Number of Trippings Without Load Shedding	-	-	-	-	-	-	-	1	-	-	-	1
Bilangan Pelantikan Dengan Lucutan Beban Number of Trippings With Load Shedding	-	-	-	-	-	-	-	-	1	-	-	-
Kehilangan Beban Maksimum (MW) Maximum Load Losses (MW)	-	-	-	-	-	-	-	59.79	59.05	-	-	53.95
Tenaga Yang Tidak Dibekalkan Semasa Pelantikan (MWj) Unsupplied Energy During Trippings (MWh)	-	-	-	-	-	-	-	62.63	-	-	-	30.31
Purata Tenaga Tidak Dibekalkan Setiap Pelantikan (MWj) Average Unsupplied Energy During Trippings (MWh)	-	-	-	-	-	-	-	62.63	-	-	-	30.31
Purata Tempoh Setiap Pelantikan (Jam: Minit) Average Duration Per Tripping (Hour: Minutes)	-	-	-	-	-	-	-	2:10	-	-	-	1:05
Tenaga Tidak Dibekalkan Semasa Lucutan Beban (MWj) Unsupplied Energy During Load Shedding (MWh)	-	-	-	-	-	-	-	-	-	-	-	-

Jadual • Table 3: Delivery Point Unreliability Index (DePUI) - System Minutes SESB

Tahun • Year	2008	2009	2010	2011	2012	2013
Termasuk Bekalan Elektrik Terputus Including Blackout	154.38	-	-	-	263.91*	-
Tidak Termasuk Bekalan Elektrik Terputus Excluding Blackout	11.89	31.58	20.21	40.13	67.12	26.53

Nota: *Termasuk 5 insiden besar
 Note: *Includes 5 major incidents

Tahun Kewangan 2012/2013 • Financial Year 2012/2013

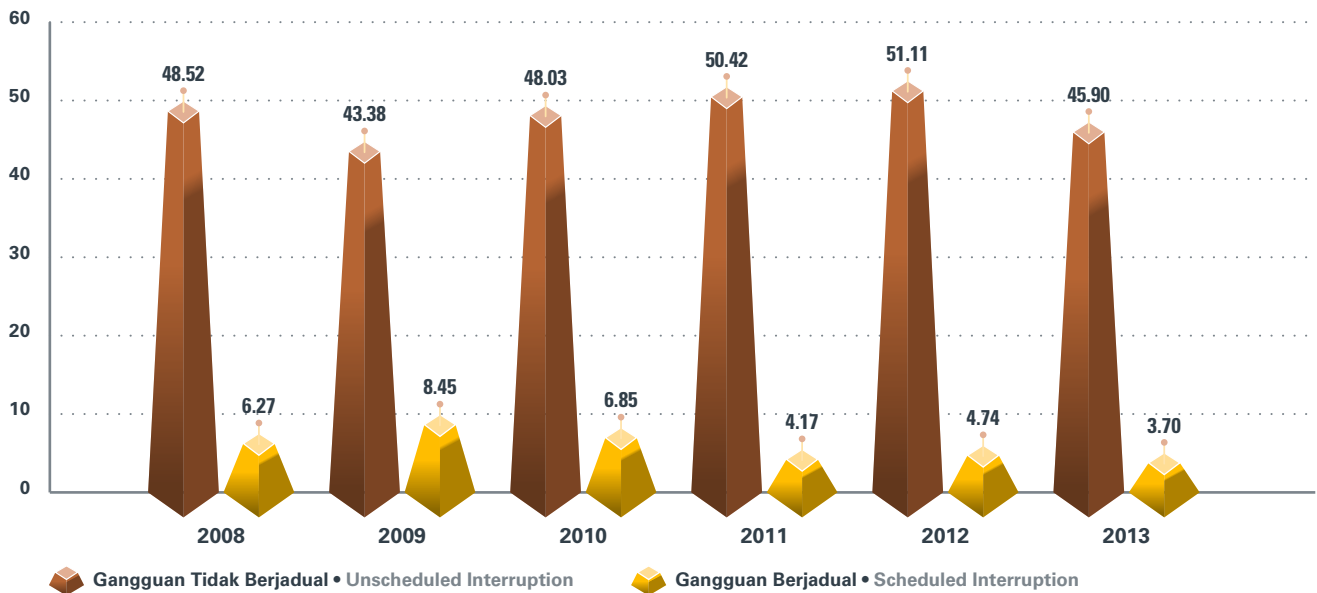
Jadual 4: Insiden Pelantikan bagi Talian/Kabel per 100 cct-km mengikut Tahap Voltan
Table 4: Lines/Cables Tripping Incidents per 100 cct-km by Voltage Level

Tahap Voltan • Voltage Level	2008	2009	2010	2011	2012	2013
275kV	-	0.20	0.20	0.20	0	0
132kV	0.28	0.44	0.12	0.42	1.08	0.42
66kV	5.51	4.34	16.34	6.68	5.56	4.46

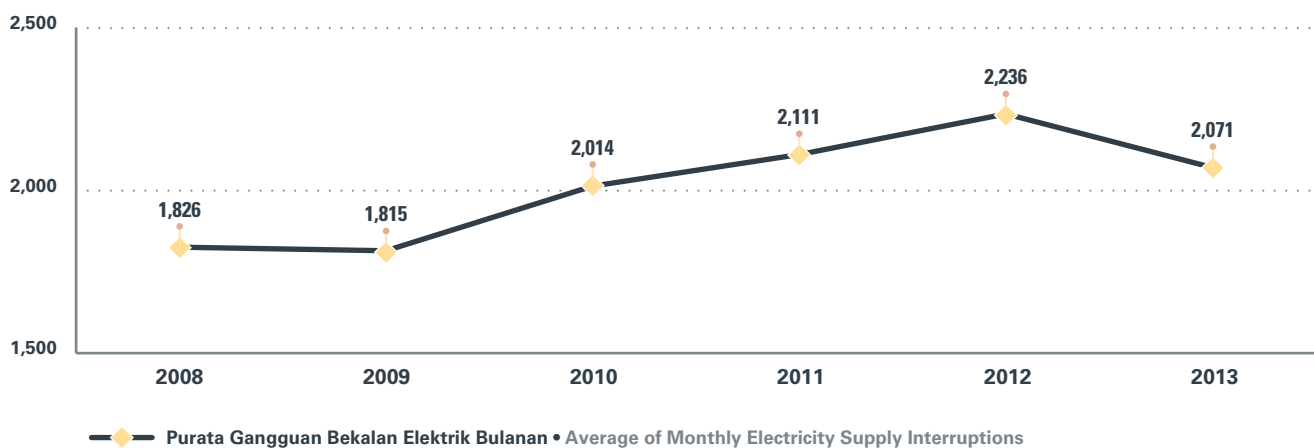
Tahun Kewangan 2012/13 • Financial Year 2012/13

Sistem Pengagihan Sabah Electricity Sdn. Bhd. (SESB)
Distribution System of Sabah Electricity Sdn. Bhd. (SESB)

Carta 1: Gangguan Bekalan Elektrik per 1,000 Pengguna
Chart 1: Electricity Supply Interruptions per 1,000 Consumers



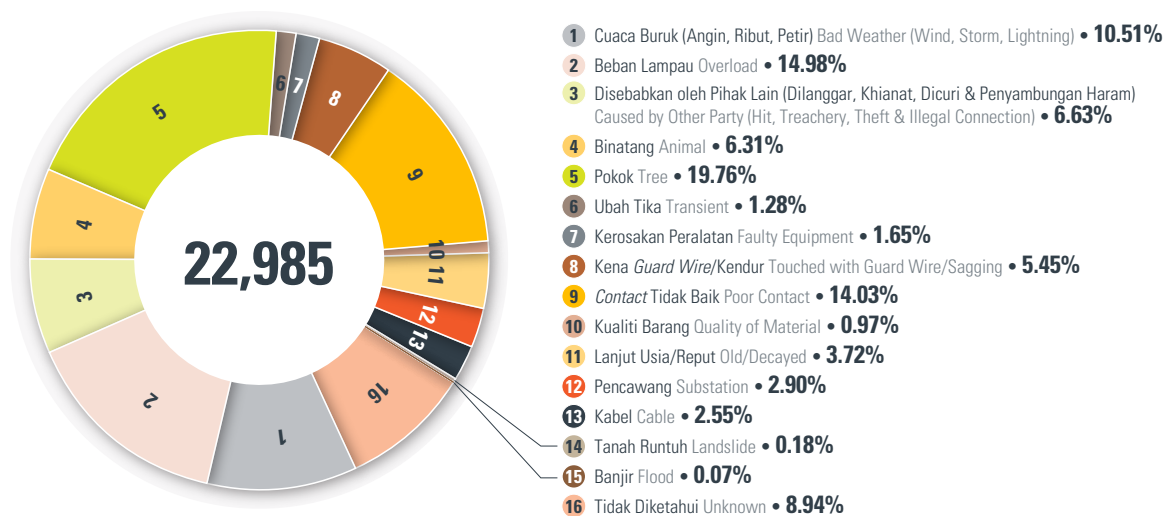
Carta 2: Purata Gangguan Bekalan Elektrik Bulanan
Chart 2: Average of Monthly Electricity Supply Interruptions



Jadual 5: Bilangan Gangguan Bekalan Elektrik
Table 5: Number of Electricity Supply Interruptions

Bilangan • Number	2008	2009	2010	2011	2012	2013
Gangguan Tidak Berjadual Unscheduled Interruptions	19,484	18,228	21,157	23,397	24,561	22,985
Gangguan Berjadual Scheduled Interruptions	2,427	3,550	3,016	1,937	2,280	1,864
Jumlah Gangguan • Total Interruptions	21,911	21,778	24,173	25,334	26,841	24,849

Carta 3: Peratus Gangguan Bekalan Elektrik Tidak Berjadual mengikut Jenis Gangguan
Chart 3: Percentage of Unscheduled Supply Interruption by Type of Interruptions

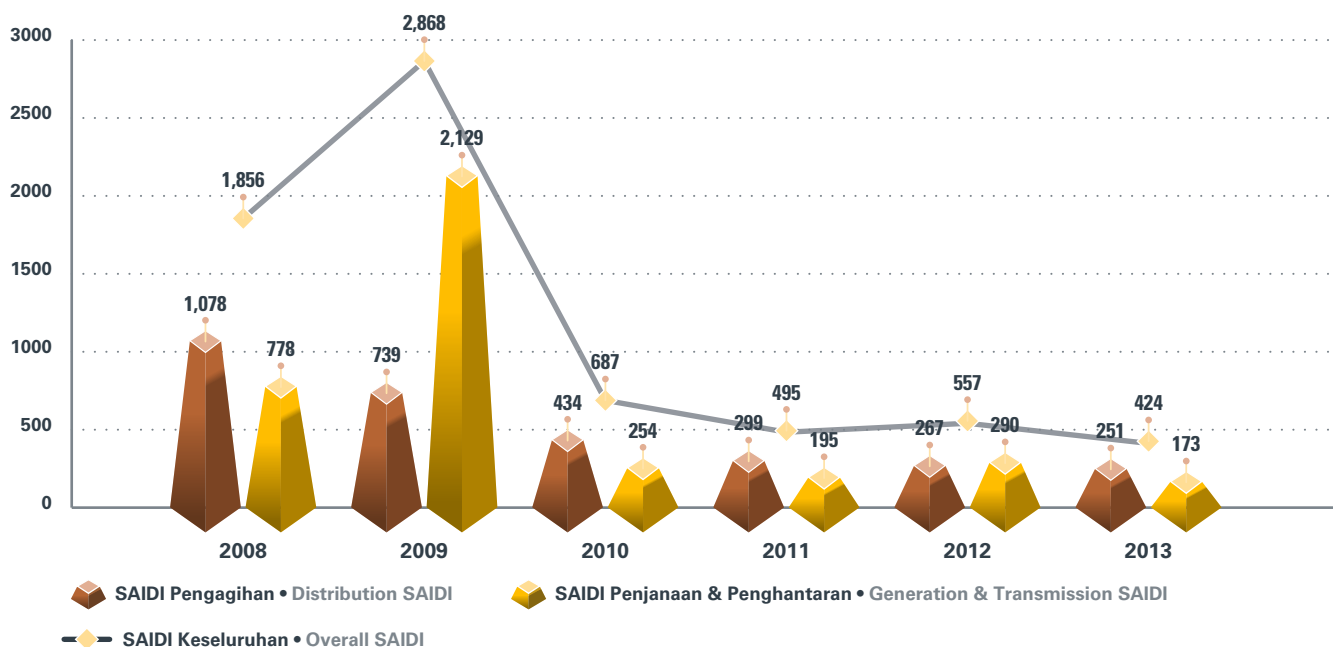


Bilangan Keseluruhan Gangguan Bekalan Elektrik Tidak Berjadual • Total Number of Unscheduled Interruptions = 22,985

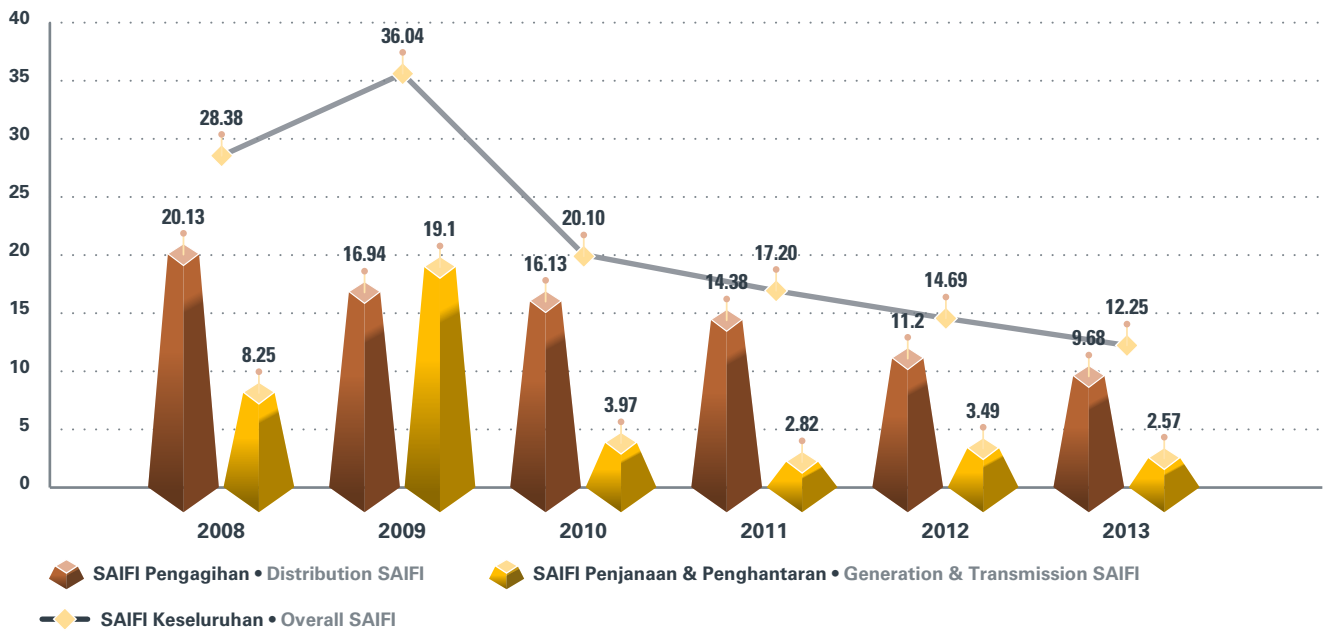
Nota: Bencana Alam disebabkan angin, ribut, banjir, tanah runtuh dan lain-lain.
 Note: Natural disaster caused by wind, storm, flood, landslides and others.

System Average Interruption Duration Index (SAIDI), System Average Interruption Frequency Index (SAIFI), Customer Average Interruption Duration Index (CAIDI)

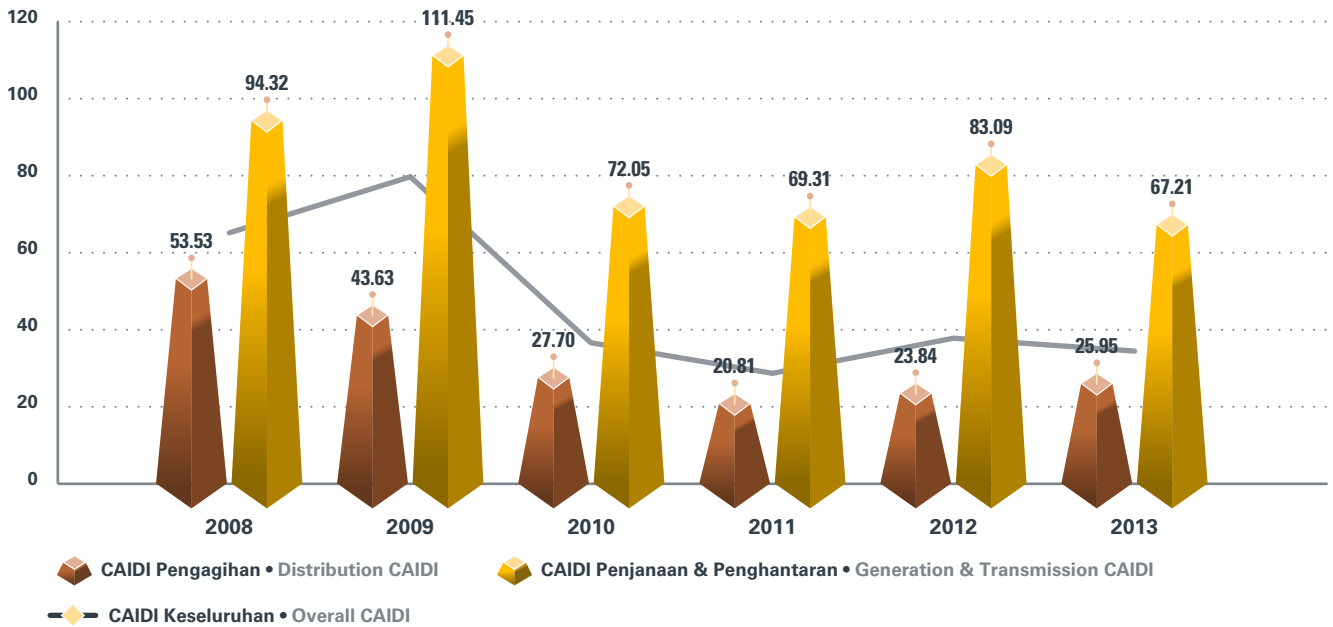
Carta 4: SAIDI (Minit/Pelanggan/Tahun)
Chart 4: SAIDI (Minutes/Customer/Year)



Carta 5: SAIFI (Bilangan Gangguan/Pelanggan/Year)
Chart 5: SAIFI (Number of Interruptions/Customer/Year)



Carta 6: CAIDI (Minit/Pelanggan Terlibat/Tahun)
Chart 6: CAIDI (Minutes/Involved Customer/Year)



Prestasi Perkhidmatan Sabah Electricity Sdn. Bhd. (SESB)
Service Performance of Sabah Electricity Sdn. Bhd. (SESB)

Details	2009	2010	2011	2012	2013
1. Connection of Electricity Supply					
A. Change of Consumers					
• No. of applications	6,893	7,600	12,209	8,725	10,687
• Percentage of connection within 1 working day after an appointment for connection	79.0%	80.9%	92.0%	95.8%	97.2%
B. New Supply (Low Voltage)					
i. Individual Applications Under Normal Conditions					
• No. of applications	12,491	15,742	17,000	19,385	18,058
• Percentage of connection within 2 working days after an appointment for connection	62.4%	67.6%	70.0%	89.6%	96.1%
ii. Bulk Supply Application And Housing Schemes					
• No. of applications	6,340	6,645	5,493	4,850	8,105
• Percentage of connection within 2 weeks after an appointment for connection	96.7%	91.6%	94.6%	97.0%	95.1%
2. Supply Restoration After Breakdowns					
i. Complaints					
• No. of complaints	190,251	209,508	55,638	76,664	71,983
• No. of consumers where the information not available at that time was contacted again within 15 minutes	3,775	5,897	52,856	66,455	66,034
• Percentage of consumers being given complaint numbers	95.0%	95.5%	37.85%	98.0%	96.2%
• Percentage of consumers where the information not available at that time was contacted again within 15 minutes	1.9%	2.8%	95.0%	86.7%	91.7%
ii. Minor Breakdowns					
• No. of minor breakdowns	17,981	19,513	19,547	22,415	18,437
• Percentage of breakdown rectified within 2 hours	93.0%	99.0%	95.0%	91.3%	89.7%
iii. Major/Extra Ordinary Breakdowns					
• No. of major breakdowns	618	452	2,743	3,406	3,472
• Percentage of restoration within 12 hours	95.9%	97.1%	97.01 %	85.5%	93.9%
3. Supply Reconnection After Disconnection					
• No. of supply disconnections	80,142	89,166	127,786	124,745	139,238
• Bills paid before 1:00 p.m. on disconnection day	48,330	52,393	70,865	115,770	119,850
• Percentage of supply reconnection on the same day for bills paid before 1:00 p.m.	60.3%	58.8%	55.46%	92.8%	100.0%
4. Supply Interruptions Which Are Planned/ Scheduled					
i. Scheduled Interruptions					
• No. of scheduled interruptions	4,980	5,020	504	601	970
• Percentage of consumers being given notice within 7 days before interruptions	71.0%	81.8%	80.0%	92.3%	100.0%

Details	2009	2010	2011	2012	2013
ii. Planning of Scheduled Interruptions					
• No. of yearly and monthly planning of scheduled interruptions	337	339	231	157	468
• No. of affected consumers	6,579	73,901	3,421	3,462	22,772
• Percentage of affected consumers informed about the planning of scheduled interruptions	99.7%	99.9%	94.01%	97.0%	100.0%
5. Meter Reading					
• No. of consumers with estimated readings exceeding 3 consecutive months	5,177	6,843	33,335	14,211	52,280
• Percentage of notice given to consumers with estimated readings exceeding 3 consecutive months	50.9%	58.4%	55.0%	95.9%	99.7%
6. Enquiries/Written Complaints From Consumers					
i. Written Enquiries					
• No. of written enquiries received	598	708	432	485	910
• Percentage of reply within 5 working days	71.7%	83.3%	81.94%	96.9%	96.8%
ii. Enquiries Through Telephone					
• No. of unresolved complaints made through telephone	27,296	19,936	24,488	26,522	39,034
• No. of consumers with unresolved complaints recontacted within 24 hours	2,297	2,744	3,791	25,545	38,959
• Percentage of consumers with unresolved complaints recontacted within 24 hours	8.4%	13.8%	15.48%	96.3%	99.8%
iii. Enquiries in Counter					
• No. of unresolved complaints made at counter	59,538	41,769	52,324	51,209	101,223
• No. of consumers with unresolved complaints recontacted within 24 hours	3,565	2,821	7,220	38,123	101,123
• Percentage of consumers with unresolved complaints recontacted within 24 hours	5.9%	6.8%	13.8%	74.5%	99.9%
7. Service Counter					
• No. of consumers who were getting services at the counter	246,343	200,888	278,940	313,942	498,484
• Percentage of consumers with waiting time not exceeding 15 minutes	60.4%	53.5%	52.76%	95.9%	98.3%
8. Appointment for Meter Accuracy Check					
• No. of appointments for meter accuracy check	1,388	1,726	1,502	1,344	1,283
• Percentage of meter accuracy check carried out within 2 working day	44.8%	45.0%	78.03%	92.3%	94.8%
9. Meter Replacement					
• No. of meter replacements	7,006	8,731	8,997	11,266	16,034
• Percentage of meter replacements within 2 working days from the date of application made	52.0%	56.1%	61.35%	93.6%	99.3%

Details	2009	2010	2011	2012	2013
10. Appointment With Consumers					
i. For Appointments Outside SESB Premises					
• Appointments where SESB officers arrived not later than the agreed time	88.8%	84.1%	89.73%	93.1%	98.4%
ii. Postponement by SESB					
• Percentage of subsequent appointment made within 1 working day	67.6%	78.3%	71.15%	93.2%	100.0%
11. Deposits					
• No. of consumers found after 6 months that their deposits exceed average consumption of 2 months	18,529	20,206	12,269	2,790	41,620
• Percentage of consumers who have the excess deposits returned	2.6%	10.5%	10.9%	82.7%	99.4%
12. Refund of Consumer Deposits					
• No. of consumers who have forwarded all required documents for refund of deposits	5,246	7,738	8,258	9,685	7,273
• Percentage of consumers who have their deposits refunded within 1 month	96.5%	84.5%	85.0%	91.9%	94.1%
13. Collection					
• Percentage of proof of payment sent via mail within 2 working days	93.6%	93.9%	95.0%	99.2%	100.0%
14. Supply Disconnection					
i. With 24 Hours Notice					
• No. of disconnections due to unsafe consumer installations	38	30	32	102	992
• No. of disconnections due to suspicion of electricity theft	54	22	102	138	796
• No. of disconnections due to electricity meter being tampered	32	15	1	16	1
ii. With More Than 24 Hours Notice					
• No. of disconnections due to failure to pay the bills within 30 days after issuance of bill and 7 days from the notice of disconnections	40,189	58,915	50,028	51,535	64,559
• Notice of disconnections due to failure to pay additional deposits within 7 days from notice date	254	134	86	0	795
iii. Without Any Notice					
• No. of disconnections due to unsafe installations	1,003	1,353	258	930	10,317
15. Special Group of Consumers Facing Difficulties In Order To Pay Electric Bills					
• No. of handicapped consumers who appealed to avoid disconnections	0	7	1	6	0
• No. of senior consumers who appealed to avoid disconnections	41	34	10	24	11

Details	2009	2010	2011	2012	2013
• No. of handicapped consumers who were assisted in the payment of bills	30	23	5	21	43
• No. of senior consumers who were assisted in the payment of bills	16	20	20	47	233
16. Voltage Incompliant With The Standards					
i. Not Requiring Enhancement Work on Network					
• No. of complaints	1,130	78	33	35	279
• Percentage of complaints settled within 2 days from the date of complaints	38.9%	43.6%	100.0%	94.3%	98.2%
ii. Requiring Enhancement Work on Network					
• No. of complaints	118	70	48	157	100
• Percentage of complaints settled within 3 months from the date of complaints	68.6%	75.7%	97.92%	94.9%	97.0%
17. Reply To New/Increase Of Supply Application					
i. No New Substation Required					
• No. of applications	2,087	2,274	3,248	3,084	2,988
• Percentage of applications replied within 1 week from the date of application	64.9%	76.2%	79.99%	94.2%	92.4%
ii. New Substation Required					
• No. of applications	61	237	242	465	372
• Percentage of applications replied within 2 week from the date of application	90.2%	73.4%	96.69%	99.8%	100.0%
18. Transferring of Meter Location Upon Consumer Request					
• No. of applications for meter relocation	88	16	33	61	87
• Percentage of applications settled within 3 working days	62.5%	68.8%	72.73%	98.0%	80.5%
19. Education of Energy Efficiency					
• No. of education programmes on energy efficiency and safety, including activities near installations and electricity lines	19	23	6	56	15
20. Power Quality Improvement					
• No. of activities to improve power quality	446	454	269	184	83

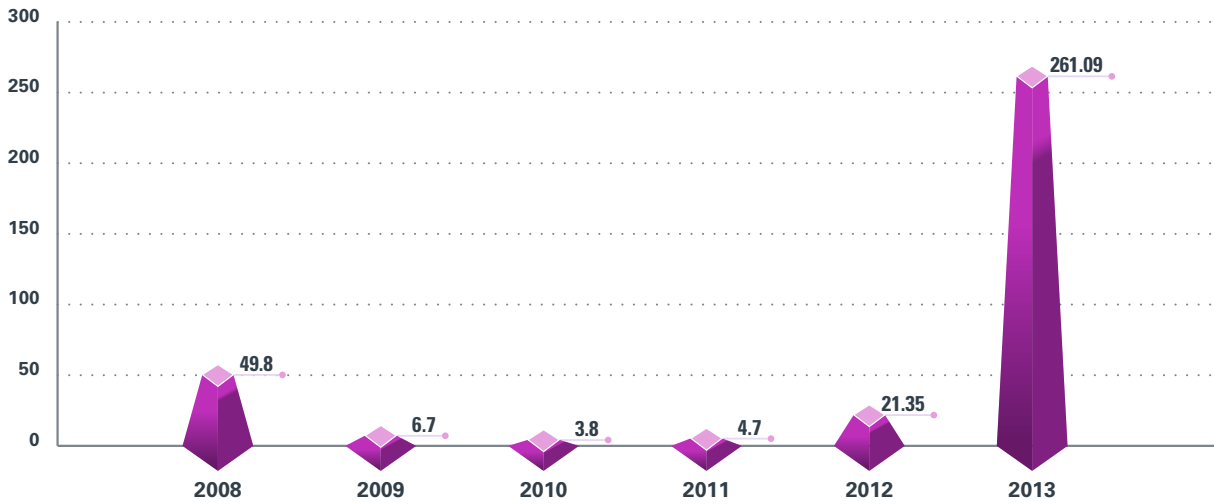
Prestasi Pembekalan dan Perkhidmatan Elektrik di Sarawak Performance of Electricity Supply and Services in Sarawak

- 52. Sistem Penjanaan Sarawak Energy Berhad (SEB) dan Penjana Kuasa Bebas (IPP) di Sarawak
Generation System of Sarawak Energy Berhad (SEB) and Independent Power Producers (IPPs) in Sarawak
- 52. Sistem Penghantaran Sarawak Energy Berhad (SEB)
Transmission System of Sarawak Energy Berhad (SEB)
- 53. Sistem Pengagihan Sarawak Energy Berhad (SEB)
Distribution System of Sarawak Energy Berhad (SEB)
- 55. SEB System Average Interruption Duration Index (SAIDI), System Average Interruption Frequency Index (SAIFI), Customer Average Interruption Duration Index (CAIDI)





Carta • Chart 1: Delivery Point Unreliability Index (DePUI) - System Minutes SEB

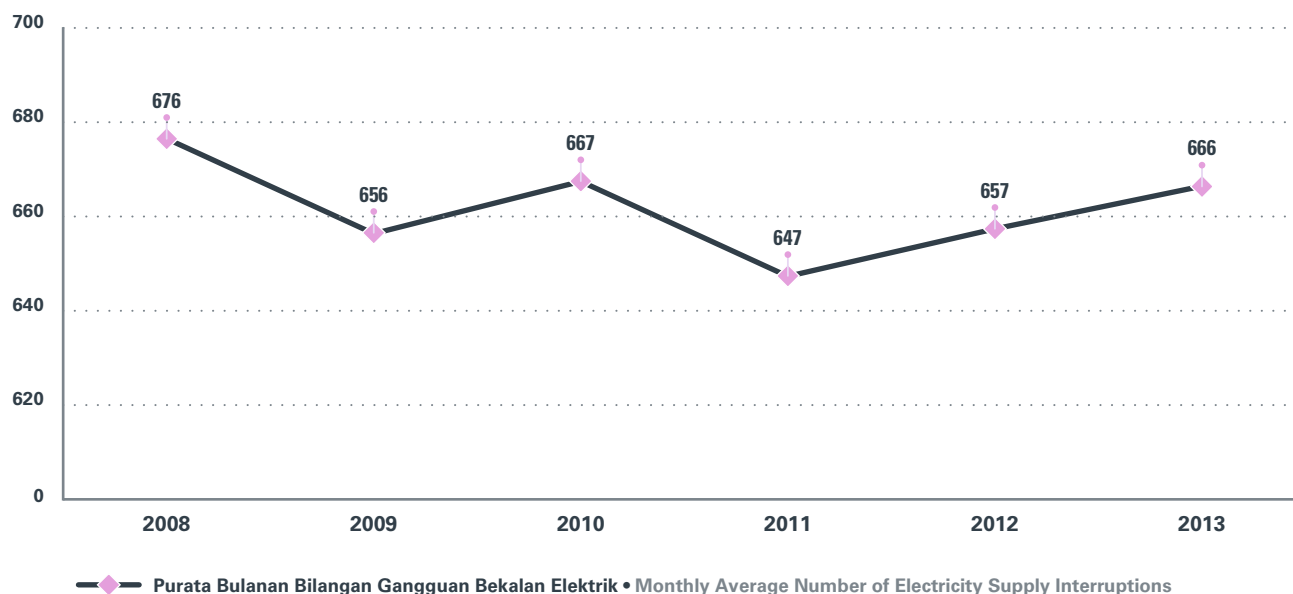


Sistem Pengagihan Sarawak Energy Berhad (SEB)
Distribution System of Sarawak Energy Berhad (SEB)

Carta 2: Gangguan Bekalan Elektrik per 1,000 Pengguna
Chart 2: Electricity Supply Interruptions per 1,000 Consumers



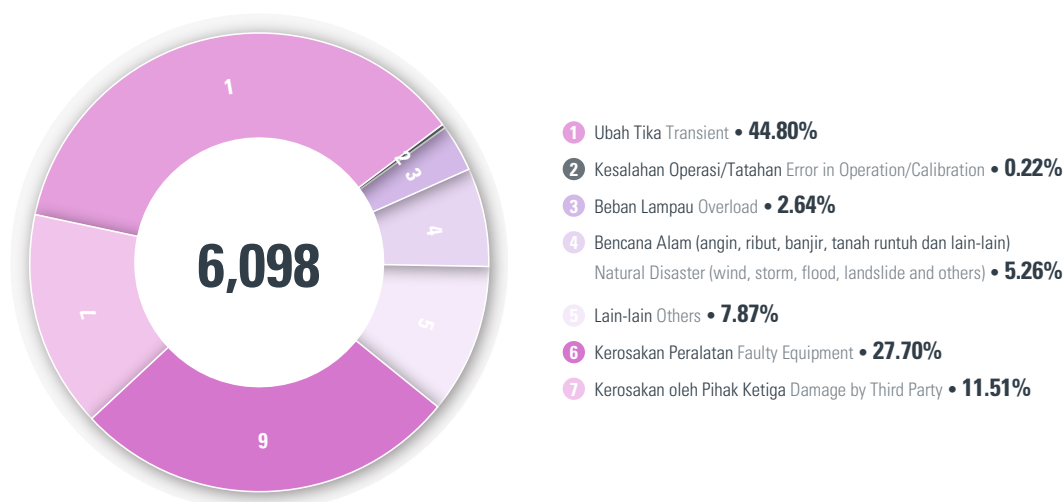
Carta 3: Purata Gangguan Bekalan Elektrik Bulanan
Chart 3: Monthly Average Electricity Supply Interruptions



Jadual 3: Bilangan Gangguan Bekalan Elektrik
Table 3: Number of Electricity Supply Interruptions

Bilangan • Number	2008	2009	2010	2011	2012	2013
Gangguan Tidak Berjadual Unscheduled Interruptions	6,301	6,040	6,338	5,976	6,351	6,098
Gangguan Berjadual Scheduled Interruptions	1,816	1,828	1,665	1,783	1,530	1,896
Jumlah Gangguan • Total Interruptions	8,117	7,868	8,003	7,759	7,881	7,994

Carta 4: Peratus Gangguan Bekalan Elektrik Tidak Berjadual mengikut Jenis Gangguan
Chart 4: Percentage of Unscheduled Supply Interruption by Type of Interruptions

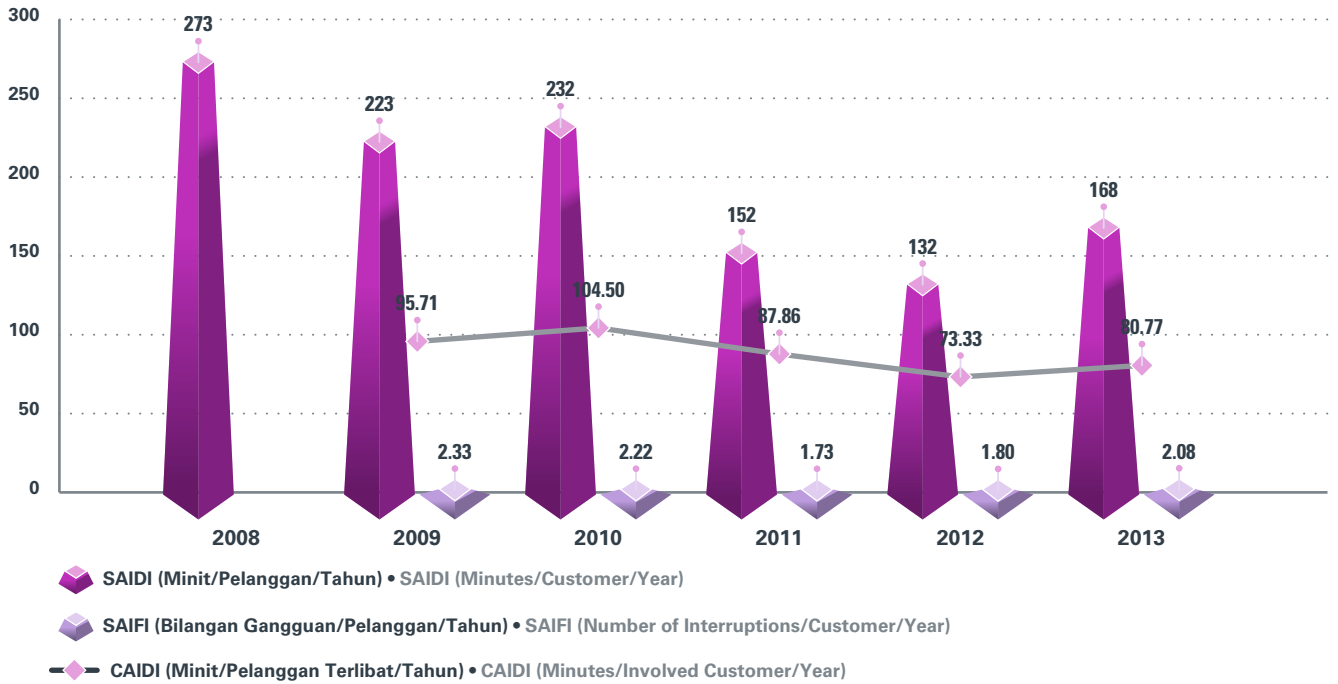


Bilangan Keseluruhan Gangguan Bekalan Elektrik Tidak Berjadual • Total Number of Unscheduled Interruptions = 6,098

Nota: Bencana alam disebabkan angin, ribut, banjir, tanah runtuh dan lain-lain
 Note: Natural disaster caused by wind, storm, flood, landslide and others.

SEB System Average Interruption Duration Index(SAIDI), System Average Interruption Frequency Index (SAIFI), Customer Average Interruption Duration Index (CAIDI)

Carta 5: SAIDI (Minit/Pelanggan/Tahun), SAIFI (Bilangan Gangguan/Pelanggan/Tahun), CAIDI (Minit /Pelanggan Terlibat/Tahun)
Chart 5: SAIDI (Minutes/Customer/Year), SAIFI (Number of Interruptions/Customer/Year), CAIDI (Minutes/Involved Customer/Year)

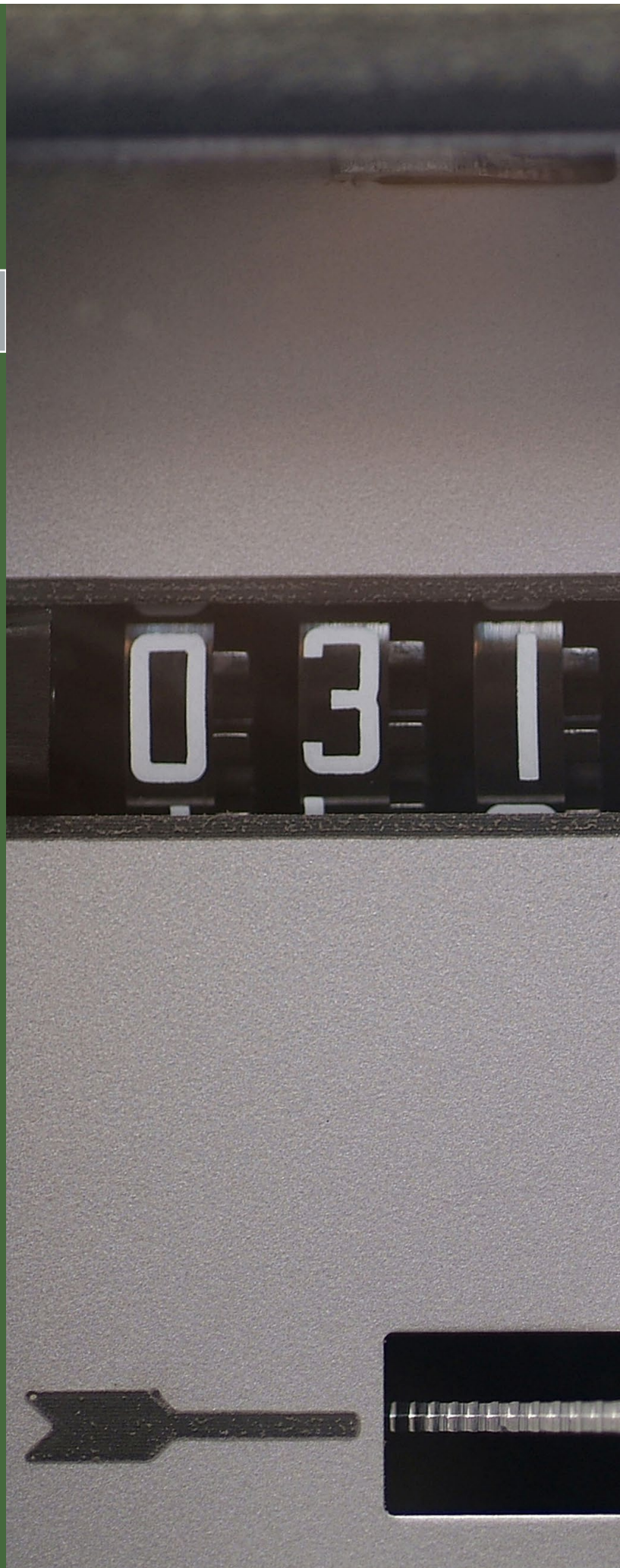


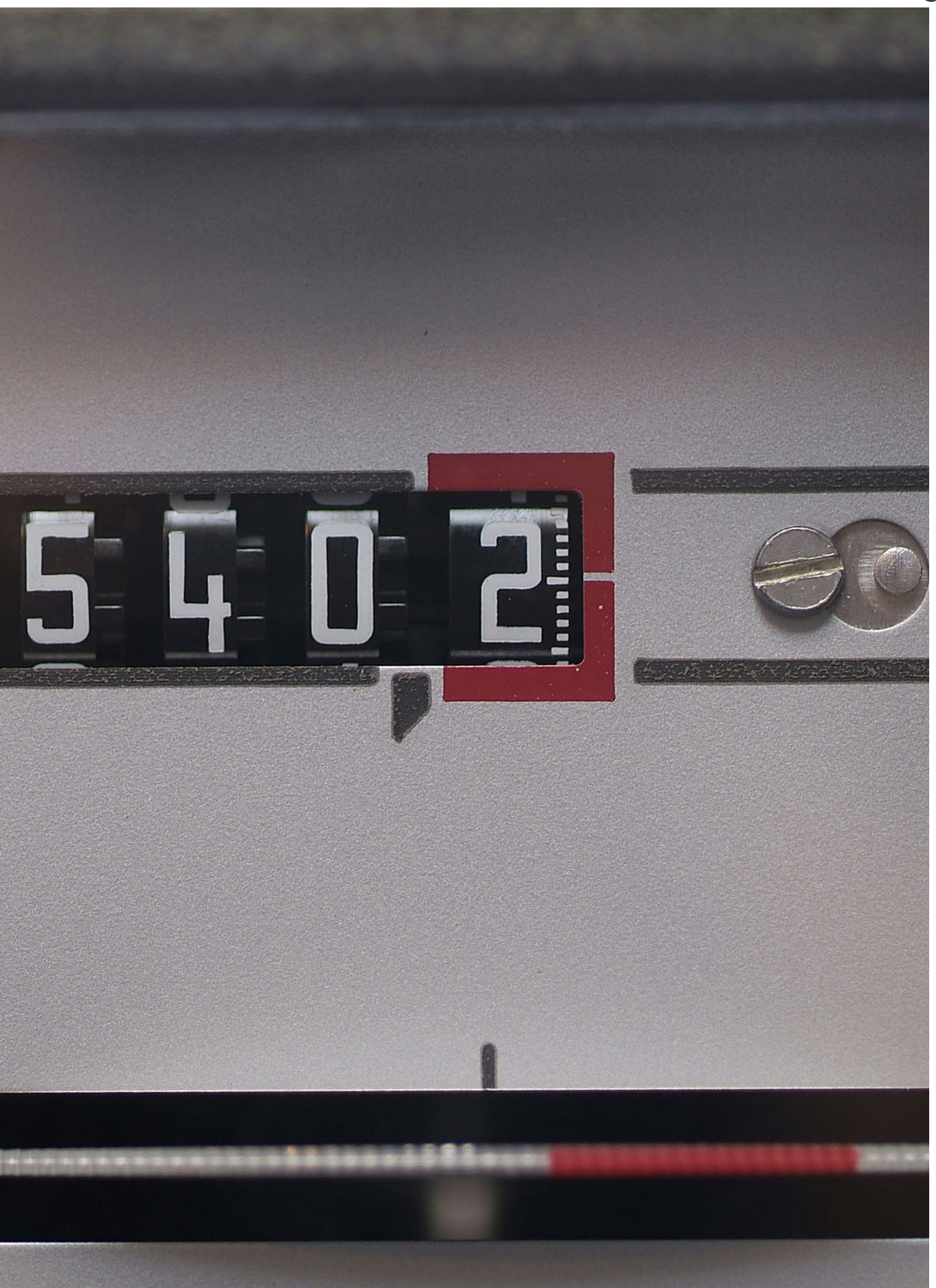
Harga Tenaga Elektrik

Electricity Prices

Tarif-Tarif Elektrik di Malaysia Electricity Tariffs in Malaysia

- 58. Tarif-Tarif Elektrik bagi Tenaga Nasional Berhad (TNB)
Electricity Tariffs for Tenaga Nasional Berhad (TNB)
- 62. Tarif-Tarif Elektrik bagi Sabah Electricity Sdn. Bhd. (SESB)
Electricity Tariffs for Sabah Electricity Sdn. Bhd. (SESB)
- 63. Tarif-Tarif Elektrik bagi Sarawak Energy Berhad (SEB)
Electricity Tariffs for Sarawak Energy Berhad (SEB)





Tarif-Tarif Elektrik bagi Tenaga Nasional Berhad (TNB) Electricity Tariffs for Tenaga Nasional Berhad (TNB)

Jadual 1: Tarif Elektrik TNB mengikut Sektor (Berkuat Kuasa 1 Januari 2014)
Table 1: TNB Electricity Tariff by Sector (Effective 1st January 2014)

Bil No	Kategori Tarif • Tariff Category	Unit	Kadar • Rate
1.	Tarif A – Tarif Kediaman • Tariff A – Domestic Tariff		
	200 kWj pertama (1-200 kWj) sebulan • For the first 200 kWh (1-200 kWh) per month	sen/kWj • sen/kWh	21.80
	100 kWj berikutnya (201-300 kWj) sebulan • For the next 100 kWh (201-300 kWh) per month	sen/kWj • sen/kWh	33.40
	300 kWj berikutnya (301-600 kWj) sebulan • For the next 300 kWh (301-600 kWh) per month	sen/kWj • sen/kWh	51.60
	300 kWj berikutnya (601-900 kWj) sebulan • For the next 300 kWh (601-900 kWh) per month	sen/kWj • sen/kWh	54.60
	Setiap kWj berikutnya (901 kWj ke atas) sebulan • For the next kWh (901 kWh and above) per month	sen/kWj • sen/kWh	57.10
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	3.00
2.	Tarif B – Tarif Perdagangan Voltan Rendah • Tariff B – Low Voltage Commercial Tariff		
	200 kWj pertama (1-200 kWj) sebulan • For the first 200 kWh (1-200 kWh) per month	sen/kWj • sen/kWh	43.50
	Setiap kWj berikutnya (201 kWj ke atas) sebulan • For the next kWh (201 kWh and above) per month	sen/kWj • sen/kWh	50.90
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	7.20
3.	Tarif C1 – Tarif Perdagangan Am Voltan Sederhana • Tariff C1 – Medium Voltage General Commercial Tariff		
	Bagi setiap kilowatt kehendak maksimum sebulan • For each kilowatt of maximum demand per month	RM/kW	30.30
	Bagi semua kWj • For all kWh	sen/kWj • sen/kWh	36.50
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	600.00
4.	Tarif C2 – Tarif Perdagangan Puncak/Luar Puncak Voltan Sederhana • Tariff C2 – Medium Voltage Peak/Off-Peak Commercial Tariff		
	Bagi setiap kilowatt kehendak maksimum sebulan dalam tempoh puncak • For each kilowatt of maximum demand per month during the peak period	RM/kW	45.10
	Bagi semua kWj dalam tempoh puncak • For all kWh during the peak period	sen/kWj • sen/kWh	36.50
	Bagi semua kWj dalam tempoh luar puncak • For all kWh during the off-peak period	sen/kWj • sen/kWh	22.40
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	600.00
5.	Tarif D – Tarif Perindustrian Voltan Rendah • Tariff D – Low Voltage Industrial Tariff		
	200 kWj pertama (1-200 kWj) sebulan • For the first 200 kWh (1-200 kWh) per month	sen/kWj • sen/kWh	38.00
	Setiap kWj berikutnya (201 kWj ke atas) sebulan • For the next (201 kWh and above) per month	sen/kWj • sen/kWh	44.10
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	7.20
	Tarif Ds – Tarif Perindustrian Khas (untuk pengguna yang layak sahaja) • Tariff Ds – Special Industrial Tariff (only for qualified consumers)		
	Bagi semua kWj • For all kWh	sen/kWj • sen/kWh	42.70
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	7.20
6.	Tarif E1 – Tarif Perindustrian Am Voltan Sederhana • Tariff E1 – Medium Voltage General Industrial Tariff		
	Bagi setiap kilowatt kehendak maksimum sebulan • For each kilowatt of maximum demand per month	RM/kW	29.60
	Bagi semua kWj • For all kWh	sen/kWj • sen/kWh	33.70
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	600.00

Bil No	Kategori Tarif • Tariff Category	Unit	Kadar • Rate
	Tarif E1s – Tarif Perindustrian Khas (untuk pengguna yang layak sahaja) • Tariff E1s – Special Industrial Tariff (only for qualified consumers)		
	Bagi setiap kilowatt kehendak maksimum sebulan • For each kilowatt of maximum demand per month	RM/kW	23.70
	Bagi semua kWj • For all kWh	sen/kWj • sen/kWh	33.60
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	600.00
7.	Tarif E2 – Tarif Perindustrian Puncak/Luar Puncak Voltan Sederhana • Tariff E2 – Medium Voltage Peak/Off-Peak Industrial Tariff		
	Bagi setiap kilowatt kehendak maksimum sebulan dalam tempoh puncak • For each kilowatt of maximum demand per month during the peak period	RM/kW • sen/kWh	37.00
	Bagi semua kWj dalam tempoh puncak • For all kWh during the peak period	sen/kWj • sen/kWh	35.50
	Bagi semua kWj dalam tempoh luar puncak • For all kWh during the off-peak period	sen/kWj • sen/kWh	21.90
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	600.00
	Tarif E2s – Tarif Perindustrian Khas (untuk pengguna yang layak sahaja) • Tariff E2s – Special Industrial Tariff (only for qualified consumers)		
	Bagi setiap kilowatt kehendak maksimum sebulan dalam tempoh puncak • For each kilowatt of maximum demand per month during the peak period	RM/kW	32.90
	Bagi semua kWj dalam tempoh puncak • For all kWh during the peak period	sen/kWj • sen/kWh	33.60
	Bagi semua kWj dalam tempoh luar puncak • For all kWh during the off-peak period	sen/kWj • sen/kWh	19.10
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	600.00
8.	Tarif E3 – Tarif Perindustrian Puncak/Luar Puncak Voltan Tinggi • Tariff E3 – High Voltage Peak/Off-Peak Industrial Tariff		
	Bagi setiap kilowatt kehendak maksimum sebulan dalam tempoh puncak • For each kilowatt of maximum demand per month during the peak period	RM/kW • sen/kWh	35.50
	Bagi semua kWj dalam tempoh puncak • For all kWh during the peak period	sen/kWj • sen/kWh	33.70
	Bagi semua kWj dalam tempoh luar puncak • For all kWh during the off-peak period	sen/kWj • sen/kWh	20.20
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	600.00
	Tarif E3s – Tarif Perindustrian Khas (untuk pengguna yang layak sahaja) • Tariff E3s – Special Industrial Tariff (only for qualified consumers)		
	Bagi setiap kilowatt kehendak maksimum sebulan dalam tempoh puncak • For each kilowatt of maximum demand per month during the peak period	RM/kW	29.00
	Bagi semua kWj dalam tempoh puncak • For all kWh during the peak period	sen/kWj • sen/kWh	31.70
	Bagi semua kWj dalam tempoh luar puncak • For all kWh during the off-peak period	sen/kWj • sen/kWh	17.50
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	600.00
9.	Tarif F – Tarif Perlombongan Voltan Rendah • Tariff F – Low Voltage Mining Tariff		
	Bagi semua kWj • For all kWh	sen/kWj • sen/kWh	38.10
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	120.00
10.	Tarif F1 – Tarif Perlombongan Am Voltan Sederhana • Tariff F1 – Medium Voltage General Mining Tariff		
	Bagi setiap kilowatt kehendak maksimum sebulan • For each kilowatt of maximum demand per month	RM/kW	21.10
	Bagi semua kWj • For all kWh	sen/kWj • sen/kWh	31.30
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	120.00

Bil No	Kategori Tarif • Tariff Category	Unit	Kadar • Rate
11.	Tarif F2 – Tarif Perlombongan Puncak/Luar Puncak Voltan Sederhana • Tariff F2 – Medium Voltage Peak/Off-Peak Mining Tariff		
	Bagi setiap kilowatt kehendak maksimum sebulan dalam tempoh puncak • For each kilowatt of maximum demand per month during the peak period	RM/kW	29.80
	Bagi semua kWj dalam tempoh puncak • For all kWh during the peak period	sen/kWj • sen/kWh	31.30
	Bagi semua kWj dalam tempoh luar puncak • For all kWh during the off-peak period	sen/kWj • sen/kWh	17.20
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	120.00
12.	Tarif G – Tarif Lampu Jalanraya • Tariff G – Street Lighting Tariff		
	Bagi semua kWj (termasuk senggaraan) • For all kWh (including maintenance)	sen/kWj • sen/kWh	30.50
	Bagi semua kWj (tidak termasuk senggaraan) • For all kWh (excluding maintenance)	sen/kWj • sen/kWh	19.20
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	7.20
13.	Tarif G1 – Tarif Lampu Neon & Lampu Limpah • Tariff G1 – Neon & Floodlight Tariff		
	Bagi semua kWj • For all kWh	sen/kWj • sen/kWh	20.80
	<i>Caj minimum bulanan • Minimum monthly charge</i>	sen/kWj • sen/kWh	7.20
14.	Tarif H – Tarif Pertanian Spesifik Voltan Rendah • Tariff H – Low Voltage Specific Agriculture Tariff		
	200 kWj pertama (1-200 kWj) sebulan • For the first 200 kWh (1-200 kWh) per month	sen/kWj • sen/kWh	39.00
	Setiap kWj berikutnya (201 kWj ke atas) sebulan • For the next kWh (201 kWh and above) per month	sen/kWj • sen/kWh	47.20
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	7.20
15.	Tarif H1 – Tarif Pertanian Spesifik Am Voltan Sederhana • Tariff H1 – Medium Voltage General Specific Agriculture Tariff		
	Bagi setiap kilowatt kehendak maksimum sebulan • For each kilowatt of maximum demand per month	RM/kW	30.30
	Bagi semua kWj • For all kWh	sen/kWj • sen/kWh	35.10
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	600.00
16.	Tarif H2 – Tarif Pertanian Spesifik Puncak/Luar Puncak Voltan Sederhana • Tariff H2 - Medium Voltage Peak/Off-peak Specific Agriculture Tariff		
	Bagi setiap kilowatt kehendak maksimum sebulan dalam tempoh puncak • For each kilowatt of maximum demand per month during the peak period	RM/kW	40.80
	Bagi semua kWj dalam tempoh puncak • For all kWh during the peak period	sen/kWj • sen/kWh	36.50
	Bagi semua kWj dalam tempoh luar puncak • For all kWh during the off-peak period	sen/kWj • sen/kWh	22.40
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	600.00

Nota • Note:

Berkuat kuasa mulai 1 Januari 2014, kutipan 1.6% Feed-in Tariff (FiT) untuk Dana Sumber Tenaga Boleh Baharu (RE) akan dikenakan ke atas bil elektrik bulanan pengguna (kecuali pengguna domestik yang menggunakan sehingga 300 kWj sebulan) • Effective from 1st January 2014, 1% Feed-in Tariff (FiT) for Renewable Energy Resources Fund (RE) is imposed on consumers' monthly electric bill (except for domestic consumers with consumption not exceeding 300 kWh per month)

Jadual 2: Tarif Elektrik TNB untuk 'Top-Up' dan caj 'Standby' untuk 'Co-Generators' (Berkuat Kuasa 1 Januari 2014)
Table 2: TNB Electricity Tariff for 'Top-Up' and 'Standby' Charges for 'Co-Generators' (Effective 1st January 2014)

Bil No	Kategori Tarif • Tariff Category	Unit	Top-Up	Standby**
1.	Tarif C1 – Perdagangan Am Voltan Sederhana • Tariff C1 – Medium Voltage General Commercial Tariff Bagi setiap kilowatt kehendak maksimum sebulan • For each kilowatt of maximum demand per month <i>Caj minimum bulanan • Minimum monthly charge</i>	RM/kW	30.30	14.00
		sen/kWj • sen/kWh	36.50	
2.	Tarif C2 – Perdagangan Puncak/Luar Puncak Voltan Sederhana • Tariff C2 – Medium Voltage Peak/Off-Peak Commercial Tariff Bagi setiap kilowatt kehendak maksimum sebulan dalam tempoh puncak • For each kilowatt of maximum demand per month during the peak period Bagi semua kWj dalam tempoh puncak • For all kWh during the peak period Bagi semua kWj dalam tempoh luar puncak • For all kWh during the off-peak period	RM/kW	45.10	14.00
		sen/kWj • sen/kWh	36.50	
		sen/kWj • sen/kWh	22.40	
3.	Tarif E1 – Perindustrian Am Voltan Sederhana • Tariff E1 – Medium Voltage General Industrial Tariff Bagi setiap kilowatt kehendak maksimum sebulan • For each kilowatt of maximum demand per month <i>Caj minimum bulanan • Minimum monthly charge</i>	RM/kW	29.60	14.00
		sen/kWj • sen/kWh	33.70	
4.	Tarif E2 – Perindustrian Puncak/Luar Puncak Voltan Sederhana • Tariff E2 – Medium Voltage Peak/Off-Peak Industrial Tariff Bagi setiap kilowatt kehendak maksimum sebulan dalam tempoh puncak • For each kilowatt of maximum demand per month during the peak period Bagi semua kWj dalam tempoh puncak • For all kWh during the peak period Bagi semua kWj dalam tempoh luar puncak • For all kWh during the off-peak period	RM/kW	37.00	14.00
		sen/kWj • sen/kWh	35.50	
		sen/kWj • sen/kWh	21.90	
5.	Tarif E3 – Perindustrian Puncak/Luar Puncak Voltan Tinggi • Tariff E3 – High Voltage Peak/Off-Peak Industrial Tariff Bagi setiap kilowatt kehendak maksimum sebulan dalam tempoh puncak • For each kilowatt of maximum demand per month during the peak period Bagi semua kWj dalam tempoh puncak • For all kWh during the peak period Bagi semua kWj dalam tempoh luar puncak • For all kWh during the off-peak period	RM/kW	35.50	12.00
		sen/kWj • sen/kWh	33.70	
		sen/kWj • sen/kWh	20.20	
6.	Tarif F1 – Perlombongan Am Voltan Sederhana • Tariff F1 - Medium Voltage General Mining Tariff Bagi setiap kilowatt kehendak maksimum sebulan • For each kilowatt of maximum demand per month Bagi semua kWj • For all kWh	RM/kW	21.10	14.00
		sen/kWj • sen/kWh	31.30	
7.	Tarif F2 – Perlombongan Puncak/Luar Puncak Voltan Sederhana • Tariff F2 – Medium Voltage Peak/Off-Peak Mining Tariff Bagi setiap kilowatt kehendak maksimum sebulan dalam tempoh puncak • For each kilowatt of maximum demand per month during the peak period Bagi semua kWj dalam tempoh puncak • For all kWh during the peak period Bagi semua kWj dalam tempoh luar puncak • For all kWh during the off-peak period	RM/kW	29.80	14.00
		sen/kWj • sen/kWh	31.30	
		sen/kWj • sen/kWh	17.20	

Bil No	Kategori Tarif • Tariff Category	Unit	Top-Up	Standby**
8.	Tarif H1 – Tarif Pertanian Spesifik Am Voltan Sederhana • Tariff H1 – Medium Voltage Specific General Agriculture Tariff			
	Bagi setiap kilowatt kehendak maksimum sebulan • For each kilowatt of maximum demand per month <i>Caj minimum bulanan • Minimum monthly charge</i>	RM/kW sen/kWj • sen/kWh	30.30 35.10	14.00
9.	Tarif H2 – Tarif Pertanian Spesifik Am Puncak/Luar Puncak • Tariff H2 – Medium Voltage Specific General Agriculture Tariff			
	Bagi setiap kilowatt kehendak maksimum sebulan dalam tempoh puncak • For each kilowatt of maximum demand per month during the peak period	RM/kW	40.80	14.00
	Bagi semua kWj dalam tempoh puncak • For all kWh during the peak period	sen/kWj • sen/kWh	36.50	
	Bagi semua kWj dalam tempoh luar puncak • For all kWh during the off-peak period	sen/kWj • sen/kWh	22.40	

**Nota • Note:

1. Kadar 'Standby' yang baru (bermula 1 Januari 2014) adalah terpakai kepada pengguna-pengguna berikut:-
This new Standby rate (as of 1st January 2014) is applicable to the following consumers:-

- Semua pengguna 'Co-generation' baru; dan
All new Co-generation consumers; and
 - Pengguna 'Co-generation' sedia ada yang berhasrat untuk menukar kepada kadar 'Standby' yang baru ini
Existing Co-generation consumers who wish to migrate to this new Standby rate.
2. Bagi pengguna 'Co-generation' sedia ada yang berhasrat untuk mengekalkan kadar 'Standby' ('Firm' dan 'Non-Firm') yang lama, kadar 'Standby' ('Firm' dan 'Non-Firm') yang lama bersama-sama kadar 'Top-Up' yang baru (bermula 1 Januari 2014) akan diguna pakai • For existing co-generation consumer who wishes to maintain previous Standby (Firm and Non-Firm) rates, the rate is applicable together with the new Top-Up rate (as of 1st January 2014)
3. Kutipan 1.6% *Feed-in Tariff* (FIT) akan dikenakan ke atas bil elektrik bulanan pengguna (kecuali pengguna Domestik yang menggunakan sehingga 300kWj sebulan) berkuatkuasa mulai 1 Januari 2014 • Effective starting from 1st January 2014, 1% Feed-in Tariff (FIT) for Renewable Energy Resources Fund (RE) is imposed on consumers' monthly electric bill (except for domestic consumers with consumption not exceeding 300 kWh per month)

Tarif-Tarif Elektrik bagi Sabah Electricity Sdn. Bhd. (SESB) Electricity Tariffs for Sabah Electricity Sdn. Bhd. (SESB)

Jadual 3: Tarif Elektrik untuk Sabah Electricity Sdn. Bhd. dan Wilayah Persekutuan Labuan (Berkuat kuasa 1 Januari 2014)
Table 3: Electricity Tariff for Sabah Electricity Sdn. Bhd. and Labuan Federal Territory (Effective 1st January 2014)

Bil No	Kategori Tarif • Tariff Category	Unit	Kadar • Rate
1.	Tarif DM – Tarif Kediaman • Tariff DM – Domestic Tariff		
	100 kWj pertama (1-100 kWj) sebulan • For the first 100 kWh (1-100 kWh) per month	sen/kWj • sen/kWh	17.5
	100 kWj berikutnya (101-200 kWj) sebulan • For the next 100 kWh (101-200 kWh) per month	sen/kWj • sen/kWh	18.5
	100 kWj berikutnya (201-300 kWj) sebulan • For the next 300 kWh (201-300 kWh) per month	sen/kWj • sen/kWh	33.0
	200 kWj berikutnya (301-500 kWj) sebulan • For the next 200 kWh (301-500 kWh) per month	sen/kWj • sen/kWh	44.5
	500 kWj berikutnya (501-1000 kWj) sebulan • For the next 500 kWh (501-1000 kWh) per month	sen/kWj • sen/kWh	45.0
	Setiap kWj berikutnya (1001 kWj ke atas) sebulan • For the next kWh (1001 kWh and above) per month <i>Caj minimum bulanan • Minimum monthly charge</i>	sen/kWj • sen/kWh RM	47.0 5.00
2.	Tarif CM1 – Tarif Perdagangan Voltan Rendah • Tariff CM1 – Low Voltage Commercial Tariff		
	200 kWj pertama (1-200 kWj) sebulan • For the first 200 kWh (1-200 kWh) per month	sen/kWj • sen/kWh	38.5
	Setiap kWj berikutnya (201 kWj ke atas) sebulan • For the next kWh (201 and above) per month <i>Caj minimum bulanan • Minimum monthly charge</i>	sen/kWj • sen/kWh RM	39.5 15.00
3.	Tarif CM2 – Tarif Perdagangan Am Voltan Sederhana • Tariff CM2 – Medium Voltage General Commercial Tariff		
	Bagi setiap kilowatt kehendak maksimum sebulan • For each kilowatt of maximum demand per month	RM/kW	23.20
	Bagi semua kWj • For all kWh <i>Caj minimum bulanan • Minimum monthly charge</i>	sen/kWj • sen/kWh RM	32.40 1,000.00

Bil No	Kategori Tarif • Tariff Category	Unit	Kadar • Rate
4.	Tarif CM3 – Tarif Perdagangan Puncak/Luar Puncak Voltan Sederhana • Tariff CM3 – Medium Voltage Peak/Off Peak Commercial		
	Bagi setiap kilowatt kehendak maksimum sebulan dalam tempoh puncak • For each kilowatt of maximum demand per month during the peak period	RM/kW	32.60
	Bagi semua kWj dalam tempoh puncak • For all kWh during the peak period	sen/kWj • sen/kWh	32.4
	Bagi semua kWj dalam tempoh luar puncak • For all kWh during the off-peak period	sen/kWj • sen/kWh	19.5
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	1,000.00
5.	Tarif ID1 – Tarif Perindustrian Voltan Rendah • Tariff ID1 – Low Voltage Industrial Tariff		
	Bagi semua kWj • For all kWh	sen/kWj • sen/kWh	37.6
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	15.00
6.	Tarif ID2 – Tarif Perindustrian Am Voltan Sederhana • Tariff ID2 – Medium Voltage General Industrial Tariff		
	Bagi setiap kilowatt kehendak maksimum sebulan dalam tempoh puncak • For each kilowatt of maximum demand per month during the peak period	RM/kW	21.75
	Bagi semua kWj • For all kWh	sen/kWj • sen/kWh	26.8
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	1,000.00
7.	Tarif ID3 – Tarif Perindustrian Puncak/Luar Puncak Voltan Sederhana • Tariff ID3 – Medium Voltage Peak/Off Peak Industrial		
	Bagi setiap kilowatt kehendak maksimum sebulan dalam tempoh puncak • For each kilowatt of maximum demand per month during the peak period	RM/kW	28.00
	Bagi semua kWj dalam tempoh puncak • For all kWh during the peak period	sen/kWj • sen/kWh	28.6
	Bagi semua kWj dalam tempoh luar puncak • For all kWh during the off-peak period	sen/kWj • sen/kWh	18.0
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	1,000.00
8.	Tarif PL – Tarif Lampu Jalanraya • Tariff PL – Public Lighting		
	Bagi semua kWj (tidak termasuk senggaraan) • For all kWh (excluding maintenance)	sen/kWj • sen/kWh	20.3
	Bagi semua kWj (termasuk senggaraan) • For all kWh (including maintenance)	sen/kWj • sen/kWh	36.3
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	15.00

Tarif-Tarif Elektrik bagi Sarawak Energy Berhad (SEB) Electricity Tariffs for Sarawak Energy Berhad (SEB)

Jadual 4: Tarif Elektrik untuk Syarikat Sarawak Energy Berhad (Berkkuat kuasa 1 April 2007)
Table 4: Electricity Tariff for Sarawak Energy Berhad (Effective 1st April 2007)

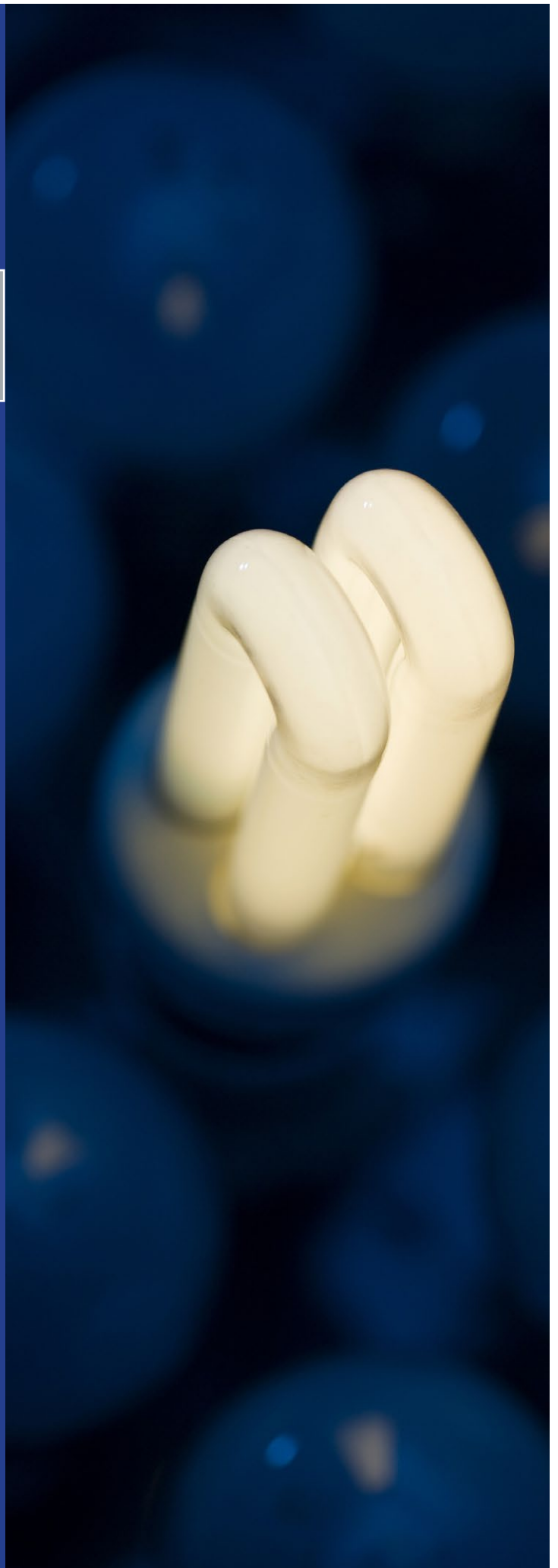
Bil No	Kategori Tarif • Tariff Category	Unit	Kadar • Rate
1.	Tarif C1 – Perdagangan • Tariff C1 - Commercial		
	Bagi 100 unit pertama sebulan • For the first 100 units per month	sen/kWj • sen/kWh	40
	Bagi 490 unit berikutnya sebulan • For the next 490 units per month	sen/kWj • sen/kWh	34
	Bagi setiap unit tambahan sebulan • For each additional unit per month	sen/kWj • sen/kWh	30
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	10.00
2.	Tarif C2 – Kehendak Perdagangan • Tariff C2 – Commercial Demand		
	Bagi setiap kilowatt kehendak maksimum bulanan • For each kilowatt of maximum demand per month	RM/kW	16.00
	Bagi setiap unit • For each unit	sen/kWj • sen/kWh	25
	<i>Caj minimum bulanan • Minimum monthly charge (per kW X Kehendak Bayaran Dikenakan • per kW X Billing Demand)</i>	RM	16.00

Bil No	Kategori Tarif • Tariff Category	Unit	Kadar • Rate
3.	Tarif C3 – Kehendak Waktu Puncak/Waktu Bukan Puncak • Tariff C3 – Commercial Peak/Off Peak Demand		
	Bagi setiap kilowatt kehendak maksimum sebulan dalam waktu puncak • For each kilowatt of maximum demand per month during the peak period	RM/kW	20.00
	Bagi setiap unit waktu puncak • For each unit during the peak period	sen/kWj • sen/kWh	25
	Bagi setiap unit waktu bukan puncak • For each unit during the off-peak period	sen/kWj • sen/kWh	14.4
	<i>Caj minimum bulanan • Minimum monthly charge (per kW X Kehendak Bayaran Dikenakan • per kW X Billing Demand)</i>	RM	20.00
4.	Tarif D – Domestik • Tariff D – Domestic		
	Bagi 100 unit pertama sebulan • For the first 100 units per month	sen/kWj • sen/kWh	34
	Bagi 300 unit berikutnya sebulan • For the next 300 units per month	sen/kWj • sen/kWh	29
	Bagi setiap unit tambahan sebulan • For each additional unit per month	sen/kWj • sen/kWh	33
	<i>Caj minimum bulanan • Minimum monthly charge (per kW X Kehendak Bayaran Dikenakan • per kW X Billing Demand)</i>	RM	5.00
5.	Tarif I1 – Perindustrian • Tariff I1 – Industrial		
	Bagi 100 unit pertama sebulan • For the first 100 units per month	sen/kWj • sen/kWh	40
	Bagi 2900 unit berikutnya sebulan • For the next 2900 units per month	sen/kWj • sen/kWh	30
	Bagi setiap unit tambahan sebulan • For each additional unit per month	sen/kWj • sen/kWh	27
	<i>Caj minimum bulanan • Minimum monthly charge (per kW X Kehendak Bayaran Dikenakan • per kW X Billing Demand)</i>	RM	10.00
6.	Tarif I2 – Kehendak Perindustrian • Tariff I2 – Industrial Demand		
	Bagi setiap kilowatt kehendak maksimum sebulan • For each kilowatt of maximum demand per month	RM/kW	16.00
	Bagi setiap unit • For each unit	sen/kWj • sen/kWh	22.2
	<i>Caj minimum bulanan • Minimum monthly charge (per kW X Kehendak Bayaran Dikenakan • per kW X Billing Demand)</i>	RM	16.00
7.	Tarif I3 – Kehendak Waktu Puncak/Waktu Bukan Puncak Perindustrian • Tariff I3 – Industrial Peak/Off Peak Demand		
	Bagi setiap kilowatt kehendak maksimum sebulan dalam waktu puncak • For each kilowatt of maximum demand per month during the peak period	RM/kW	20.00
	Bagi setiap unit waktu puncak • For each unit during the peak period	sen/kWj • sen/kWh	23.4
	Bagi setiap unit bukan puncak • For each unit during the off-peak period	sen/kWj • sen/kWh	14.4
	<i>Caj minimum bulanan • Minimum monthly charge (per kW X Kehendak Bayaran Dikenakan • per kW X Billing Demand)</i>	RM	20.00
8.	Tarif PL – Lampu Awam • Tariff PL – Public Lighting		
	Bagi setiap unit • For each unit	sen/kWj • sen/kWh	47
	<i>Caj minimum bulanan • Minimum monthly charge</i>	RM	10.00

Purata Harga Jualan & Kos-kos Penjanaan

Average Selling Price & Generation Costs

- 66. Perbandingan Purata Harga Jualan Elektrik (sen/kWh) antara Syarikat Utiliti Kuasa yang Terpilih
Comparison of Electricity Average Selling Price (sen/kWh) among Selected Power Utility Companies
- 66. Kos-kos Penjanaan Syarikat Utiliti Kuasa Utama
Generation Costs of Major Power Utility Companies



Perbandingan Purata Harga Jualan Elektrik (sen/kWj) antara Syarikat Utiliti Kuasa yang Terpilih Comparison of Electricity Average Selling Price (sen/kWh) among Selected Power Utility Companies

Jadual 1: Perbandingan Purata Harga Jualan Elektrik (sen/kWj) antara Syarikat Utiliti Kuasa yang Terpilih
Table 1: Comparison of Electricity Average Selling Price (sen/kWh) among Selected Power Utility Companies

Syarikat Utiliti Kuasa • Power Utility Companies	Domestik Domestic	Komersial Commercial	Perindustrian Industry	Lampu Awam Public Lighting	Pertanian Agriculture	Jumlah Total
TNB	29.18	40.86	30.96	21.54	39.44	33.88
SESB	25.08	32.98	28.13	18.51	n/a	29.12
SEB	31.25	31.95	25.07	47.09	n/a	29.87
PLN, Indonesia	21.06	32.41	23.70	26.97	n/a	24.34
Taipower, Taiwan	29.86	35.93	28.22	13.59	n/a	30.19
EGAT, Thailand	38.90	36.04	n/a	n/a	32.82	37.52
CLP, Hong Kong	n/a	n/a	n/a	n/a	n/a	39.29
Meralco, Philippines	81.43	72.01	57.26	8.54	n/a	70.40
TEPCO, Japan	78.86	86.88	n/a	n/a	n/a	79.60
KEPCO, Korea	34.85	31.75	26.31	27.76	12.71	28.05
Singapore Power	57.50	52.62	49.75	n/a	n/a	56.89

Kos-kos Penjanaaan Syarikat Utiliti Kuasa Utama Generation Costs of Major Power Utility Companies

Jadual 2: Kos Penjanaaan Tenaga Nasional Berhad (TNB) (sen/kWj)
Table 2: Generation Cost of Tenaga Nasional Berhad (TNB) (sen/kWh)

Kos Penjanaaan • Generation Cost	2008	2009	2010	2011	2012	2013
(a) Penjanaaan Sendiri (a) Own Generation	13.22	17.65	16.16	18.22	20.28	20.13
(b) Tenaga Dibeli (b) Energy Purchased	17.50	23.01	21.99	24.68	25.05	22.80
(c) Kos Keseluruhan - (a) & (b) (c) Overall Cost - (a) & (b)	16.29	21.58	20.42	23.08	23.95	23.03

Nota: Kos (kapasiti, tenaga) / Jumlah Penjanaaan Tenaga (bagi IPP, menggunakan syarat yang termaktub dalam PPA/SLA)
Note: Cost (capacity, energy) / Total Units Generated (for IPP, based on condition stipulated in PPA/SLA)

Jadual 3: Kos Penjanaaan Sabah Electricity Sdn. Bhd. (SESB) (sen/kWj)
Table 3: Generation Cost of Sabah Electricity Sdn. Bhd. (SESB) (sen/kWh)

Kos Penjanaaan • Generation Cost	2008	2009	2010	2011	2012	2013
(a) Penjanaaan Sendiri (a) Own Generation	12.80	15.23	17.42	24.30	16.16	17.84
(b) Tenaga Dibeli (b) Energy Purchased	17.80	16.44	22.33	25.80	17.90	20.04
(c) Kos Keseluruhan - (a) & (b) (c) Overall Cost - (a) & (b)	16.00	16.15	21.21	25.20	17.40	19.38

Jadual 4: Kos Penjanaaan Sarawak Energy Berhad (SEB) (sen/kWj)
Table 4: Generation Costs of Sarawak Energy Berhad (SEB) (sen/kWh)

Kos Penjanaaan • Generation Cost	2008	2009	2010	2011	2012	2013
(a) Penjanaaan Sendiri (a) Own Generation	19.2	15.6	14.6	21.8	25.89	11.58
(b) Tenaga Dibeli (b) Energy Purchased	13.6	15.4	14.2	13.2	11.72	10.75
(c) Kos Keseluruhan - (a) & (b) (c) Overall Cost - (a) & (b)	16.2	15.5	14.3	15.4	14.15	10.85

Nota: Berikutan penstrukturan semula SEB pada tahun 2011, kos penjanaaan SEB turut mengambil kira kos penjanaaan Sejangkat Power Corporation, Sarawak Power Corporation, PPLS Power Generation dan Mukah Power Generation

Note: Due to restructuring of SEB in 2011, SEB's generation cost takes into account the generation cost of Sejangkat Power Corporation, Sarawak Power Corporation, PPLS Power Generation and Mukah Power Generation

Maklumat dan Statistik Industri Pembekalan Elektrik

Information and Statistics on Electricity Supply Industry

Maklumat dan Statistik Industri di Semenanjung Malaysia Industry Information and Statistics in Peninsular Malaysia

- 68. Tenaga Nasional Berhad (TNB)
- 70. Penjana-Penjana Kuasa Bebas (IPP)
Independent Power Producers (IPPs)
- 72. Projek-Projek Jana Kuasa Tenaga Boleh Baharu (TBB)
Renewable Energy (RE) Power Generation Projects
- 77. *Co-Generator* Utama
Major Co-Generators
- 79. Penjanaan Persendirian (Kurang daripada 5 MW)
Self-Generation (Less than 5 MW)
- 79. Senarai Pengagih Elektrik
List of Electricity Distributors



Tenaga Nasional Berhad (TNB)

Jadual 1: Sorotan Prestasi
Table 1: Performance Highlights

Petunjuk • Indicator	2008	2009	2010	2011	2012	2013
Kehendak Maksimum (MW) Maximum Demand (MW)	14,007	14,245	15,072	15,476	15,826	16,562
Jumlah Unit Penjanaan (GWj) ¹ Total Units Generated (GWj) ¹	27,691	29,608	27,689	24,018	26,329	24,914
Jumlah Unit Jualan (GWj) Total Units Sold (GWj)	85,616	82,443	89,621	93,713	97,256	100,999
Hasil Jualan Elektrik (RM Juta) Sales of Electricity (RM Million)	22,555	26,388	28,020	29,273	32,464	33,857
Kapasiti Penjanaan Terpasang Yang Dilesenkan (MW) ² Licensed Installed Generation Capacity (MW) ²	6,346	7,040	7,040	7,054	6,986	6,866
Jumlah Kakitangan ³ Number of Employees ³	24,927	24,613	25,571	26,732	28,105	34,972
Hasil Jualan Setiap Kakitangan (RM Juta/Kakitangan) Sales of Electricity per Employee (RM Million/Employee)	0.90	1.07	1.10	1.10	1.16	0.97
Unit Jualan Setiap Kakitangan (GWj/Kakitangan) Units Sold per Employee (GWj/Kakitangan)	3.43	3.35	3.50	3.46	3.43	2.89
Kapasiti Penjanaan Setiap Kakitangan (MW/Kakitangan) Installed Capacity per Employee (MW/Employee)	0.26	0.29	0.28	0.26	0.25	0.20
Jumlah Unit Pembelian (GWj) Total Units Purchased (GWj)	68,091	63,156	73,830	76,887	81,733	86,767
Jumlah Unit Eksport (GWj) Total Units Exported (GWj)	1,152	166	88	73	13	17 ⁴
Jumlah Unit Import (GWj) Total Units Imported (GWj)	0.11	0.06	0.03	225	100	220 ⁴

Nota • Note:

¹ Jumlah Unit Penjanaan (Jumlah Campuran Penjanaan) bagi TNB tidak termasuk IPP di Semenanjung Malaysia

² Tidak termasuk IPP

³ Kakitangan TNB tidak termasuk anak syarikat milik penuh TNB dan anak syarikat mempunyai saham terbesar

⁴ Data diperolehi daripada Jabatan *Single Buyer* TNB

¹ Total Units Generated (Generation Mix) for TNB excluding IPPs in Peninsular Malaysia

² Excluding the IPPs

³ TNB employees excluding TNB wholly owned subsidiaries and TNB majority owned subsidiaries

⁴ Data obtained from Single Buyer Department of TNB

Jadual 2: Kapasiti Penjanaan Terpasang Yang Dilesenkan (MW) dan Kebolehdapatan Keseluruhan (%)
Table 2: Licenced Installed Generation Capacity (MW) and Overall Availability (%)

Jenis Bahan Api • Fuel Type	2008	2009	2010	2011	2012	2013
Hidro Hydro	1,911	1,911	1,911	1,911	1,911	1,911
Gas Asli Natural Gas	4,386	5,061	5,061	5,075	5,075	4,955
Arang batu Coal	-	-	-	-	-	-
Medium Fuel Oil (MFO)	-	-	-	-	-	-
Diesel	68	68	68	68	-	-
Lain-lain Others	-	-	-	-	-	-
Jumlah • Total	6,365	7,040	7,040	7,054	6,986	6,866
Kebolehdapatan Keseluruhan (%) Overall Availability (%)	90.0	91.0	89.4	86.8	93.5	92.4

Jadual 3: Campuran Penjanaan (GWj)
Table 3: Generation Mix (GWh)

Jenis Bahan Api • Fuel Type	2008	2009	2010	2011	2012	2013
Hidro Hydro	6,669	5,916	5,227	5,950	5,524	5,392
Gas Asli Natural Gas	20,979	23,658	22,337	15,915	19,558	19,522
Arang batu Coal	-	-	-	-	-	-
Medium Fuel Oil (MFO)	-	-	6	686	86	-
Diesel	43	34	119	1,468	1,161	-
Lain-lain Others	-	-	-	-	-	-
Jumlah • Total	27,691	29,608	27,689	24,018	26,329	24,914

Jadual 4: Jualan Tenaga Elektrik (GWj)
Table 4: Sales of Electricity (GWh)

Sektor • Sector	2008	2009	2010	2011	2012	2013
Domestik Domestic	15,810	16,792	18,217	18,916	20,301	21,601
Komersial Commercial	26,939	27,859	29,872	31,755	33,218	34,878
Industri Industry	40,511	36,261	40,071	41,449	42,047	42,721
Lampu Awam Public Lighting	956	1,078	1,046	1,139	1,235	1,302
Perlombongan Mining	34	47	62	75	98	121
Eksport (EGAT) Export (EGAT)	1,152	166	88	73	13	17 ¹
Lain-lain (Pertanian) Others (Agriculture)	214	240	265	306	344	375
Jumlah • Total	85,616	82,443	89,621	93,713	97,256	101,105

Nota • Note:

¹ Data diperolehi daripada Jabatan Single Buyer TNB

¹ Data obtained from Single Buyer Department of TNB

Jadual 5: Bilangan Pengguna
Table 5: Number of Consumers

Sektor • Sector	2008	2009	2010	2011	2012	2013
Domestik Domestic	5,750,325	5,938,095	6,128,224	6,288,281	6,456,647	6,503,417
Komersial Commercial	1,110,718	1,164,959	1,224,414	1,281,108	1,334,371	1,334,856
Industri Industry	25,330	25,663	25,580	26,203	27,599	27,954
Lampu Awam Public Lighting	45,037	47,715	50,122	53,075	56,715	61,121
Perlombongan Mining	13	15	17	20	22	27
Lain-lain (Pertanian) Others (Agriculture)	906	996	1,080	1,166	1,241	1,494
Unit Percuma ¹ Free Units ¹	-	-	2,218	2,264	2,271	-
Jumlah • Total	6,932,329	7,177,443	7,431,655	7,652,117	7,878,866	7,928,869

Nota • Note:

¹ Unit Percuma merupakan bekalan elektrik yang tidak dikenakan bayaran bil bulanan. Premis yang layak merupakan premis-premis TNB termasuk bangunan pejabat, rumah kelab, kuarters, pencawang masuk utama, pencawang penghantaran dan pencawang pembahagian.

¹ Free Units refers to electricity provided for free without being charged for monthly bill payments. Eligible premises are TNB premises including office buildings, clubhouse, quarters, main substations, transmission substations and distribution substations

Jadual 6: Keupayaan Sistem Penghantaran
Table 6: Transmission System Capacity

Talian/Kabel Sistem Penghantaran Transmission System Lines/Cables	2008	2009	2010	2011	2012	2013
500kV (km)	890 ¹	1,209 ²	1,094 ³	1,094 ³	1,295 ⁴	668
275kV (km)	7,616	7,738	8,028	8,425	8,449	8,534 ⁶
132kV (km)	11,299	11,308	11,415	11,672	11,640	11,891
66kV (km) ⁵	-	-	0.9	-	-	-
Pencawang Penghantaran • Transmission Substations						
Bilangan • Number	386	385	392	399	401	404
Keupayaan (MVA) • Capacity (MVA)	83,808	82,990	86,030	94,325	94,265	95,960

Nota • Note:

¹ Sepanjang 440 km talian penghantaran 500kV dikendalikan pada voltan 275kV • 440 km of transmission lines were operated at 275kV

² Sepanjang 541 km talian penghantaran 500kV dikendalikan pada voltan 275kV • 541 km of transmission lines were operated at 275kV

³ Sepanjang 425.92 km talian penghantaran 500kV dikendalikan pada voltan 275kV • 425.92 km of transmission lines were operated at 275kV

⁴ Sepanjang 627.64 km talian penghantaran 500kV dikendalikan pada voltan 275kV • 627.64 km of 500kV transmission lines were operated at 275kV

⁵ Talian 66kV yang berjumlah 0.9 km telah pun dihentutugas pada 16 September 2001 • 66kV lines amounting to 0.9 km has been terminated on September 16, 2001

⁶ Termasuk 627.64 km-litaran 500kV garis yang ditengakan pada 275kV • Including 627.64 cct-km 500kV lines energized at 275kV

Jadual 7: Keupayaan Sistem Pengagihan
Table 7: Distribution System Capacity

Talian/Kabel Sistem Pengagihan Distribution System Lines/Cables	2008	2009	2010	2011	2012	2013
Talian Atas (km) Overhead Lines (km)	191,714	341,318	475,972	477,191	495,925	487,385
Kabel Bawah Tanah (km) Underground Cables (km)	357,267	361,763	376,226	379,661	423,758	555,272
Pencawang Pengagihan • Distribution Substations						
Bilangan Number	61,238	62,852	63,341	65,556	67,925	68,509
Keupayaan (MVA) Capacity (MVA)	66,696	68,454	69,456	125,222	126,969	127,217

Penjana-Penjana Kuasa Bebas Independent Power Producers

Jadual 8: Kapasiti Penjanaan Yang Dilesenkan, Unit Penjanaan dan Unit Jualan
Table 8: Licensed Installed Capacity, Units Generated and Units Sold

Bil No	Pemegang Lesen & Lokasi • Licensee & Location	Jenis Loji Plant Type	Kapasiti Penjanaan Yang Dilesenkan (MW) Licensed Installed Capacity (MW)	Unit Penjanaan (GWj) Units Generated (GWh)	Unit Jualan (GWj) Units Sold (GWh)
1.	YTL POWER GENERATION SDN. BHD. (a) Paka, Terengganu (b) Pasir Gudang, Johor	CC	780.0 390.0	5,521.91 2,178.72	5,427.40 2,136.56
2.	GENTING SANYEN POWER SDN. BHD. Kuala Langat, Selangor.	CC	762.0	4,671.03	4,562.32
3.	SEGARI ENERGY VENTURES SDN. BHD. Manjung, Perak.	CC	1,303.00	8,142.98	8,039.78
4.	TEKNOLOGI TENAGA PERLIS CONSORTIUM SDN. BHD. Kuala Sungai Baru, Perlis.	CC	650.0	4,230.92	4,158.65

Bil No	Pemegang Lesen & Lokasi • Licensee & Location	Jenis Loji Plant Type	Kapasiti Penjanaan Yang Dilesenkan (MW) Licensed Installed Capacity (MW)	Unit Penjanaan (GWj) Units Generated (GWj)	Unit Jualan (GWj) Units Sold (GWj)
5.	NUR GENERATION SDN. BHD. Kulim High-Tech Industrial Park, Kedah.	CC	440.0	1,374.15	1,338.98
6.	PAHLAWAN POWER SDN. BHD. Melaka Tengah, Melaka.	CC	334.0	2,143.38	2,106.21
7.	PRAI POWER SDN. BHD. Seberang Perai Tengah, Pulau Pinang.	CC	350.0	2,034.36	1,989.88
8.	GB3 SDN. BHD. Manjung, Perak.	CC	640.0	2,012.91	1,964.40
9.	PANGLIMA POWER SDN. BHD. Alor Gajah, Melaka.	CC	720.0	4,956.91	4,855.93
10.	POWERTEK BHD Alor Gajah, Melaka.	GT	440.0	485.61	479.42
11.	PORT DICKSON POWER BHD Port Dickson, Negeri Sembilan.	GT	440.0	626.39	626.06
12.	MUSTEQ HYDRO SDN. BHD. Sungai Kenerong, Kelantan	Mini Hydro	20.0	59.20	59.20
13.	TNB JANAMANJUNG SDN. BHD. Manjung, Perak.	C	2,100.0	17,562.21	16,259.57
14.	TANJUNG BIN POWER SDN. BHD. Mukim Serkat, Daerah Pontian, Johor.	C	2,100.0	12,321.46	11,771.98
15.	JIMAH ENERGY VENTURES SDN. BHD. Port Dickson, Negeri Sembilan.	C	1,400.0	10,023.33	9,494.19
16.	KAPAR ENERGY VENTURES SDN. BHD. Kapar, Selangor	Conv	600.0	13,731.02	12,894.31
		C	600.0		
		C	1000.0		
		OC	220.0		
17.	TANJUNG BIN ENERGY SDN. BHD. Pontian, Johor.	C	1,000.0	*	
18.	TNB JANAMANJUNG SDN. BHD. Manjung, Perak.	C	1,010.0	*	

Nota • Note:

*Stesen Janakuasa Belum Beroperasi • Power Station Is Not Operating Yet

- Kapasiti Penjanaan Terpasang Sistem (Kapasiti Penjanaan yang bersambung dengan Sistem Grid Semenanjung) ialah 14,777 MW. Jumlah ini tidak termasuk Musteq Hydro Sdn. Bhd. dan Nur Generation Sdn. Bhd.

CC: Kitar Padu • Combined Cycle, GT: Turbin Gas • Gas Turbine, OC: Kitar Terbuka • Open Cycle, CONV: Konvensional • Conventional, C: Arang batu • Coal

Projek-projek Jana Kuasa Tenaga Boleh Baharu (TBB)
Renewable Energy (RE) Power Generation Projects

Jadual 9: Kapasiti Berlesen, Unit Penjanaaan dan Unit Jualan
Table 9: Licensed Capacity, Units Generated and Units Sold

Bil No	Pemegang Lesen & Lokasi • Licensee & Location	Jenis Loji Plant Type	Bahan Api/Penggerak Fuel/Prime Mover	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Unit Penjanaaan (GWj) Units Generated (GWh)	Unit Jualan (MWj) Units Sold (MWh)
KUALA LUMPUR						
1.	SURIA KLCC SDN. BHD. Wilayah Persekutuan, Kuala Lumpur	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.7	n/a	n/a
SELANGOR						
2.	JANA LANDFILL SDN. BHD. Seri Kembangan, Selangor.	Turbin Gas Gas Turbine	Gas Landfill Landfill Gas	2.0	3,713.56	3,713.56
3.	RECYCLE ENERGY SDN. BHD. Kajang, Selangor.	Turbin Stim Steam Turbine	Sampah Yang Telah Diproses Refuse Derived Fuel	8.9	18,019.42	11,274.56
4.	MALAYSIAN GREEN TECHNOLOGY CORPORATION Kajang, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.1	*	
5.	RENEWABLE POWER SDN. BHD. Hulu Selangor, Selangor.	Hidro Mini Mini Hydro	Air Water	2.2	11,590.41	11,581.24
6.	KUB-BERJAYA ENERGY SDN. BHD. Hulu Selangor, Selangor.	Turbin Gas Gas Turbine	Gas Landfill Landfill Gas	1.2	5,389.44	5,252.11
7.	JANA LANDFILL SDN. BHD. Kuala Selangor, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	1.1	*	
8.	MACGLO STEEL SERVICE CENTRE SDN. BHD. Shah Alam, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.5	617.12	617.12
9.	EXOTIC ACCESS SDN. BHD. Mukim Kapar, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.5	628.07	615.53
10.	SAUJANA NAGAMAS SDN. BHD. Shah Alam, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	1.0	1,103.18	1,090.69
11.	MUJUR SATRIA SDN. BHD. Klang, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	1.0	269.79	264.99
12.	KUB-BERJAYA ENERGY SDN. BHD. Hulu Selangor, Selangor.	Biogas	Gas Landfill Landfill Gas	3.1	*	
13.	EN. TEW PENG HWEE Klang, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.7	67,443.99	67,512.50
14.	DATO' IR. DR. DENNIS GANENDRA Klang, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.8	154.01	152.05
15.	WIBAWA HARMONI SDN. BHD. Shah Alam, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	1.0	242.13	239.9
16.	KAYANGAN MEGAJAYA SDN. BHD. Shah Alam, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.5	52.68	51.25

Bil No	Pemegang Lesen & Lokasi • Licensee & Location	Jenis Loji Plant Type	Bahan Api/Penggerak Fuel/Prime Mover	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Unit Penjana (GWj) Units Generated (GWh)	Unit Jalan (GWj) Units Sold (GWh)
17.	BROADWAY VICTORY SDN. BHD. Kapar, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	1.0	166.95	166.62
18.	KEMUNING SUMIKIN BUSSAN SDN. BHD. Kuala Langat, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	1.0	1,246.43	1,246.43
19.	KUB-BERJAYA ENERGY SDN. BHD. Hulu Selangor, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.1	*	
20.	FORTUNE 11 SDN. BHD. Sepang, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	5.0	*	
21.	EMERALD ESTEEM SDN. BHD. Klang, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	1.0	n/a	n/a
22.	IVORY DAZZLE SDN. BHD. Klang, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	1.0	Baru Mula Tugas Pada 26/12/2013	
23.	PANTAS LESTARI SDN. BHD. Shah Alam, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.5	n/a	n/a
24.	PEPS-JV (M) SDN. BHD. Ulu Yam, Selangor	Fotovolta Suria Solar Photovoltaic	Suria Solar	2.0	*	
25.	TAN CHENG SIANG Sungai Buluh, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.2	*	
26.	SILVERSTAR PAVILION SDN. BHD. Lapangan Terbang Antarabangsa Sepang, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	5.0	*	
27.	SILVERSTAR PAVILION SDN. BHD. Lapangan Terbang Antarabangsa Sepang, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	5.0	*	
28.	CORPORATE SEASON SDN. BHD. Lapangan Terbang Antarabangsa Kuala Lumpur, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	4.0	*	
29.	LEMBAGA PENGELOLA SMJK KATHOLIK PETALING JAYA Petalang Jaya, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.2	*	
30.	WT PLASTIC PRODUCTS SDN. BHD. Kapar, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.1	Baru Mula Tugas Pada 18/12/2013	
31.	INFRA MASYHUR SDN. BHD. Dengkil, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.3	*	
32.	SUNRISE PRIMA SDN. BHD. Klang, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.4	*	
33.	UPAYA JAYAMAS SDN. BHD. Damansara, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.5	*	
34.	CHENG HUA ENGINEERING WORKS SDN. BHD. Klang, Selangor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.2	*	

Bil No	Pemegang Lesen & Lokasi • Licensee & Location	Jenis Loji Plant Type	Bahan Api/Penggerak Fuel/Prime Mover	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Unit Penjualan (GWj) Units Generated (GWh)	Unit Jualan (GWj) Units Sold (GWh)
PAHANG						
35.	AMCORP PERTING HYDRO SDN. BHD. Bentong, Pahang.	Hidro Mini Mini Hydro	Air Water	4.2	32,115.79	32,115.79
36.	BIOPOWER CLIMATE CARE SDN. BHD. Bera, Pahang.	Biogas	Gas Landfill Landfill Gas	2.1	2,292.83	2,048.32
37.	EN. ONG AH HWA Kuantan, Pahang.	Fotovolta Suria Solar Photovoltaic	Suria Solar	1.0	n/a	n/a
38.	DATO' IR. DR. DENNIS GANENDRA Bentong, Pahang.	Fotovolta Suria Solar Photovoltaic	Suria Solar	1.0	n/a	n/a
39.	VOLTAGE RENEWABLES SDN. BHD. Gebeng, Pahang.	Fotovolta Suria Solar Photovoltaic	Suria Solar	5.0	*	
40.	VOLTAGE RENEWABLES SDN. BHD. Gebeng, Pahang.	Fotovolta Suria Solar Photovoltaic	Suria Solar	3.0	*	
41.	VOLTAGE RENEWABLES SDN. BHD. Gebeng, Pahang.	Fotovolta Suria Solar Photovoltaic	Suria Solar	1.0	*	
42.	VOLTAGE RENEWABLES SDN. BHD. Gebeng, Pahang.	Fotovolta Suria Solar Photovoltaic	Suria Solar	1.0	*	
43.	FTJ BIO POWER SDN. BHD. Jengka, Pahang.	Biojisim Biomass	Tandan Sawit Kosong Empty Fruit Bunch	13.5	*	
KELANTAN						
44.	I.S. ENERGY SDN. BHD. Kuala Krai, Kelantan.	Hidro Mini Mini Hydro	Air Water	2.8	12,660.42	11,979.08
45.	EN. THAMILMUKILAN A/L PUSPANADAM Kota Bharu, Kelantan.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.6	388.15	388.15
46.	JAYADEV A/L K.K PILLAI Pasar Putih, Kelantan.	Fotovolta Suria Solar Photovoltaic	Suria Solar	1.0	*	
47.	PESAKA TECHNOLOGIES SDN. BHD. Gua Musang, Kelantan.	Hidro Mini Mini Hydro	Air Water	12.0	*	
NEGERI SEMBILAN						
48.	MHES ASIA SDN. BHD. Jempol, Negeri Sembilan	Turbin Stim Steam Turbine	Sisa Sawit Palm Waste	13.0	n/a	n/a
49.	SUNQUEST SDN. BHD. Port Dickson, Negeri Sembilan	Turbin Stim Steam Turbine	Sisa Sawit Palm Waste	6.5	n/a	n/a
50.	FELDA PALM INDUSTRIES SDN. BHD. Jempol, Negeri Sembilan.	Biogas	Tandan Sawit Kosong Empty Fruit Bunch	1.5	1,682.33	1,141.86
51.	CYPARK SURIA (NEGERI SEMBILAN) SDN. BHD. Nilai, Negeri Sembilan.	Fotovolta Suria Solar Photovoltaic	Suria Solar	3.0	4,170.10	3,631.16
52.	CYPARK SURIA (PAJAM) SDN. BHD. Setul, Negeri Sembilan.	Fotovolta Suria Solar Photovoltaic	Suria Solar	5.0	5,004.96	5,002.44

Bil No	Pemegang Lesen & Lokasi • Licensee & Location	Jenis Loji Plant Type	Bahan Api/Penggerak Fuel/Prime Mover	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Unit Penjanaaan (GWj) Units Generated (GWh)	Unit Jualan (GWj) Units Sold (GWh)
NEGERI SEMBILAN						
53.	ALPHA AUTOMATION (SELANGOR) SDN. BHD. Nilai, Negeri Sembilan.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.2	195.64	185.67
54.	GAYA DUNIA SDN. BHD. (Fasa I) Port Dickson, Negeri Sembilan.	Fotovolta Suria Solar Photovoltaic	Suria Solar	3.0	2,385.06	2,385.06
55.	CEMARA ANGSANA SDN. BHD. Gemmas, Negeri Sembilan.	Fotovolta Suria Solar Photovoltaic	Suria Solar	1.3	Baru Mula Tugas Pada 13/12/2013	
56.	CEMARA ANGSANA SDN. BHD. Gemmas, Negeri Sembilan.	Fotovolta Suria Solar Photovoltaic	Suria Solar	4.5	Baru Mula Tugas Pada 13/12/2013	
57.	GUBAHAN CERIA SDN. BHD. Gemmas, Negeri Sembilan.	Fotovolta Suria Solar Photovoltaic	Suria Solar	4.5	Baru Mula Tugas Pada 13/12/2013	
58.	GAYA DUNIA SDN. BHD. (Fasa II) Port Dickson, Negeri Sembilan.	Fotovolta Suria Solar Photovoltaic	Suria Solar	2.0	*	
59.	GAYA DUNIA SDN. BHD. (Fasa I) Port Dickson, Negeri Sembilan.	Biogas	Gas Landfill Landfill Gas	0.5	*	
60.	GAYA DUNIA SDN. BHD. (Fasa II) Port Dickson, Negeri Sembilan.	Biogas	Gas Landfill Landfill Gas	0.5	*	
61.	SELASIH MENTARI SDN. BHD. Rantau, Negeri Sembilan.	Fotovolta Suria Solar Photovoltaic	Suria Solar	1.3	*	
62.	SELASIH MENTARI SDN. BHD. Rantau, Negeri Sembilan.	Fotovolta Suria Solar Photovoltaic	Suria Solar	2.0	*	
63.	CYPARK SURIA (PAJAM) SDN. BHD. Nilai, Negeri Sembilan.	Biogas	Gas Landfill Landfill Gas	1.0	*	
64.	SOLAR MANAGEMENT (REMBAU) SDN. BHD. Pedas, Negeri Sembilan.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.5	*	
65.	SOLAR MANAGEMENT (CHEMBONG) SDN. BHD. Pedas, Negeri Sembilan.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.5	*	
66.	SELASIH MENTARI SDN. BHD. Rantau, Negeri Sembilan.	Fotovolta Suria Solar Photovoltaic	Suria Solar	2.0	*	
JOHOR						
67.	ACHI JAYA PLANTATIONS SDN. BHD. Segamat, Johor.	Biogas	Palm Oil Mill Effluent (POME)	1.3	6,561.27	6,561.27
68.	RENTAK RAYA SDN. BHD. Pontian, Johor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	2.0	2,674.63	2,428.94
69.	BELL ECO POWER SDN. BHD. Batu Pahat, Johor.	Turbin Gas Gas Turbine	Palm Oil Mill Effluent (POME)	2.0	5,363.73	4,538.78
70.	SYNERGY SOLAR DEVELOPMENT SDN. BHD. Pasir Gudang, Johor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.2	*	
71.	SYNERGY SOLAR DEVELOPMENT SDN. BHD. Johor Bahru, Johor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.2	*	

Bil No	Pemegang Lesen & Lokasi • Licensee & Location	Jenis Loji Plant Type	Bahan Api/Penggerak Fuel/Prime Mover	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Unit Penjanaaan (GWj) Units Generated (GWh)	Unit Jualan (GWj) Units Sold (GWh)
JOHOR						
72.	SYNERGY SOLAR DEVELOPMENT SDN. BHD. Pasir Gudang, Johor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.1	*	
73.	SYNERGY SOLAR DEVELOPMENT SDN. BHD. Johor Bahru, Johor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.2	*	
74.	SYNERGY SOLAR DEVELOPMENT SDN. BHD. Skudai, Johor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	1.4	*	
75.	ISKANDAR REGIONAL DEVELOPMENT AUTHORITY Johor Bahru, Johor.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.2	*	
PERLIS						
76.	AMBANG FIESTA SDN. BHD. Kangar, Perlis.	Fotovolta Suria Solar Photovoltaic	Suria Solar	5.0	6,800.39	3,832.60
77.	AMBANG FIESTA SDN. BHD. Kuala Perlis, Perlis.	Fotovolta Suria Solar Photovoltaic	Suria Solar	1.0	*	
KEDAH						
78.	EN. TAN VAIT LEONG Baling, Kedah.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.5	388.45	388.45
79.	AQUAPONICS SOLAR FARM SDN. BHD. Kuala Muda, Kedah.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.3	Baru Mula Tugas Pada 18/12/2013	
80.	AQUAPONICS ENERGY GARDEN SDN. BHD. Kuala Muda, Kedah.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.4	Baru Mula Tugas Pada 16/12/2013	
81.	URBAN AQUAPONICS SDN. BHD. Kota Setar, Kedah.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.4	Baru Mula Tugas Pada 16/12/2013	
82.	SOLRA SDN. BHD. Baling, Kedah.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.5	Baru Mula Tugas Pada 24/12/2013	
PULAU PINANG						
83.	REVISION SOLAR SDN. BHD. Seberang Perai Tengah, Pulau Pinang.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.2	Baru Mula Tugas Pada 23/12/2013	
84.	KLASIK AKTIF SDN. BHD. Seberang Perai Tengah, Pulau Pinang.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.18	Baru Mula Tugas Pada 23/12/2013	
85.	JEFI AQUATECH RESOURCES SDN. BHD. Seberang Perai Tengah, Pulau Pinang.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.2	*	
86.	JISHAN PACK SDN. BHD. Seberang Perai Selatan, Pulau Pinang.	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.2	*	
PERAK						
87.	BAGAN DATOH SOLAR FARM SDN. BHD. Hutan Melintang, Perak.	Fotovolta Suria Solar Photovoltaic	Suria Solar	2.5	*	
88.	MAJU INTAN BIOMASS ENERGY SDN. BHD. Durian Sebatang, Perak.	Biojisim Biomass	Tandan Sawit Kosong Empty Fruit Bunch	12.9	*	

Bil No	Pemegang Lesen & Lokasi • Licensee & Location	Jenis Loji Plant Type	Bahan Api/Penggerak Fuel/Prime Mover	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Unit Penjanaan (GWj) Units Generated (GWh)	Unit Jualan (GWj) Units Sold (GWh)
MELAKA						
89.	EN. LIM CHOO SOO Cheng, Melaka.	Fotovolta Suria Solar Photovoltaic	Suria Solar	1.0	*	
90.	KUMPULAN MELAKA BERHAD (Fasa I) Alor Gajah, Melaka.	Fotovolta Suria Solar Photovoltaic	Suria Solar	1.3	1,240.98	1,240.98
91.	KUMPULAN MELAKA BERHAD (Fasa II) Alor Gajah, Melaka.	Fotovolta Suria Solar Photovoltaic	Suria Solar	1.2	1,033.77	1,033.77
92.	KUMPULAN MELAKA BERHAD (Fasa III) Alor Gajah, Melaka.	Fotovolta Suria Solar Photovoltaic	Suria Solar	2.5	1,270.85	1,270.85
TERENGGANU						
93.	PERBADANAN MEMAJUKAN IKTISAD NEGERI TERENGGANU Marang, Terengganu	Fotovolta Suria Solar Photovoltaic	Suria Solar	0.5	*	

Nota • Note:

*Stesen Janakuasa Belum Beroperasi • Power Station Is Not Operating Yet

n/a –Tiada maklumat • Not available

Co-Generator Utama Major Co-Generators

Jadual 10: Kapasiti Berlesen dan Unit Penjanaan (Lesen Awam)
Table 10: Licensed Capacity and Units Generated (Public Licence)

Bil No	Pemegang Lesen & Lokasi • Licensee & Location	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Bahan Api Fuel Type	Unit Penjanaan (MWj) Unit Generated (MWh)
1.	GAS DISTRICT COOLING (KLCC) SDN. BHD. Persiaran KLCC, Jalan Ampang, Kuala Lumpur.	40.00	Gas Asli Natural Gas	21,422.89
2.	GAS DISTRICT COOLING (KLIA) SDN. BHD. Kuala Lumpur International Airport, Sepang, Selangor.	60.00	Gas Asli Natural Gas	n/a
3.	SEE SEN CHEMICAL BHD. Kemaman, Terengganu.	6.00	Haba Buangan Proses Perindustrian Industrial Process Waste Heat	13,708.75
4.	SHELL REFINING COMPANY (FOM) BERHAD Port Dickson, Negeri Sembilan	35.00	Haba Buangan Proses Perindustrian Industrial Process Waste Heat	n/a
5.	PETRONAS GAS BERHAD Kerteh Industrial Area, Terengganu.	210.00	Gas Asli Natural Gas	1,127,503.49
6.	PETRONAS GAS BERHAD Gebeng Industrial Area, Pahang.	105.00	Gas Asli Natural Gas	780,141.20
7.	INSTITUTE OF TECHNOLOGY PETRONAS SDN. BHD. Tronoh, Perak.	8.40	Gas Asli Natural Gas	39,805.76
8.	FUSION ENERGY SDN. BHD. Banting, Selangor.	418.00	Haba Buangan Proses Perindustrian Industrial Process Waste Heat	*
9.	PERSTIMA UTILITY SDN. BHD. Johor Bahru, Johor.	5.67	Gas Asli Natural Gas	18,596.40
10.	OPTIMISTIC ORGANIC SDN. BHD. Kemaman, Terengganu.	7.0	Haba Buangan Proses Perindustrian Industrial Process Waste Heat	n/a

Nota • Note:

*Stesen Janakuasa Belum Beroperasi • Power Station Is Not Operating Yet

n/a –Tiada maklumat • Not available

Jadual 11: Kapasiti Berlesen dan Unit Penjanaan (Lesen Persendirian)
Table 11: Licensed Capacity and Units Generated (Private Licence)

Bil No	Pemegang Lesen & Lokasi • Licensee & Location	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Bahan Api Fuel Type	Unit Penjanaan (MWj) Unit Generated (MWh)
1.	PERWAJA STEEL SDN. BHD. Kemaman, Terengganu.	9.50	Gas Asli Natural Gas	Tiada Aktiviti Penjanaan No Generation Activities
2.	MALYSIAN NEWSPRINT INDUSTRIES SDN. BHD. Mentakab, Pahang.	79.20	Bahan Buangan Pertanian Agricultural Waste	29,570
3.	TITAN PETCHEM (M) SDN. BHD. Pasir Gudang, Johor.	56.00	Gas Asli Natural Gas	176,070
4.	TITAN PETROCHEMICALS (M) SDN. BHD. Tanjung Langsat, Johor.	42.60	Gas Asli Natural Gas	145,310
5.	CENTRAL SUGARS REFINERY SDN. BHD. Shah Alam, Selangor.	8.23	Gas Asli / Diesel Natural Gas / Diesel	44,272.96
6.	BASF PETRONAS CHEMICALS SDN. BHD. Kuantan, Pahang.	27.40	Haba Buangan Proses Perindustrian Industrial Process Waste Heat	n/a
7.	GAS DISTRICT COOLING (PUTRAJAYA) SDN. BHD. Wilayah Persekutuan Putrajaya.	10.74	Gas Asli Natural Gas	23,005.58
8.	PETRONAS PENAPISAN (MELAKA) SDN. BHD. Sungai Udang, 76300 Melaka.	145.00	Gas Asli Natural Gas	656,020.81
9.	GAS DISTRICT COOLING (PUTRAJAYA) SDN. BHD. 62000 Putrajaya.	6.50	Gas Asli Natural Gas	44,799.81
10.	MUDA PAPER MILLS SDN. BHD. Hulu Langat, Selangor.	14.40	Gas Asli Natural Gas	48,250.72
11.	PETRONAS FERTILIZER (KEDAH) SDN. BHD. Kuala Muda, Kedah.	18.31	Gas Asli Natural Gas	n/a
12.	GULA PADANG TERAP SDN. BHD. Padang Terap, Kedah.	10.29	Haba Buangan Proses Perindustrian / Diesel Industrial Process Waste Heat / Diesel	19,715.55
13.	MALAYAN SUGAR MANUFACTURING CO. BHD. 13600 Perai, Pulau Pinang.	8.95	Gas Asli Natural Gas	145,310
14.	PERAK-HANJOONG SIMEN SDN. BHD. Kuala Kangsar, 33700 Perak.	12.00	Haba Buangan Proses Perindustrian Industrial Process Waste Heat	*
15.	PETRONAS GAS BERHAD (GPP A) Kemaman, Terengganu.	25.00	Gas Asli Natural Gas	n/a
16.	PETRONAS GAS BERHAD (GPP B) Dungun, Terengganu.	25.00	Gas Asli Natural Gas	n/a
17.	WRP ASIA PACIFIC SDN. BHD. Sepang, Selangor.	8.00	Gas Asli Natural Gas	n/a

Nota • Note:

*Stesen Janakuasa Belum Beroperasi • Power Station Is Not Operating Yet

n/a – Tiada maklumat • Not available

Penjanaaan Persendirian (Kurang Daripada 5 MW) Self Generations (Less Than 5 MW)

Jadual 12: Kapasiti Berlesen dan Unit penjanaaan
Table 12: Licensed Capacity and Units Generated

Jenis Bahan Api Fuel Type	Tahun • Year	2008	2009	2010	2011	2012	2013
		Bilangan Lesen • Number of Licences	765	779	795	1,116	1,371
Gas Asli Natural Gas	Kapasiti Berlesen (MW) • Licensed Capacity (MW)	13	3	30	31	31	31
	Unit Penjanaaan (MWj) • Units Generated (MWh)	n/a	16	34	27	53	23
Diesel	Kapasiti Berlesen (MW) • Licensed Capacity (MW)	359	394	378	516	577	690
	Unit Penjanaaan (MWj) • Units Generated (MWh)	26	811	640	723	339	571
Sisa Sawit Palm Oil Waste	Kapasiti Berlesen (MW) • Licensed Capacity (MW)	319	315	253	358	354	569
	Unit Penjanaaan (MWj) • Units Generated (MWh)	21	707	614	730	526	198
Lain-lain Others	Kapasiti Berlesen (MW) • Licensed Capacity (MW)	34	27	29	29	16	12
	Unit Penjanaaan (MWj) • Units Generated (MWh)	n/a	7	5	6	69	29
Jumlah Total	Kapasiti Berlesen (MW) • Licensed Capacity (MW)	725	739	691	933	979	1,302
	Unit Penjanaaan (MWj) • Units Generated (MWh)	47	1,542	1,293	1,486	987	821

Nota • Note:

Lain-lain adalah termasuk solar, hidro dan jenis-jenis lain biojisim (hampas padi, hampas tebu, habuk kayu, cip kayu) dan biogas •
Others is inclusive of solar, hydro and other biomass (paddy husk, bagasse, wood dust, wood chip) and biogas
n/a – Tiada maklumat • Not available

Senarai Pengagih Elektrik List of Electricity Distributors

Jadual 13: Senarai Pengagih Elektrik
Table 13: List of Electricity Distributors

Bil No	Pemegang Lesen & Alamat Perhubungan Licensee & Contact Address	Kawasan Bekalan Area of Supply	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Tarikh Lesen Dikeluarkan Date of Licence Issued
1.	GAS DISTRICT COOLING (KLIA) SDN. BHD. Jalan KLIA S5 (KLIA Selatan), Southern Support Zone 64000 KLIA, Sepang, Selangor. Tel : 03-8787 4326 Faks : 03-8787 4282	Kuala Lumpur International Airport Daerah Sepang Selangor.	60.00	01-01-1996
2.	LEMBAGA PELABUHAN KELANG Beg Berkunci 202, Jalan Pelabuhan Utara 42005 Pelabuhan Klang, Selangor. Tel : 03-3168 8211 Faks : 03-3167 0211 / 3168 9117	Kelang Port Authority Premis Jalan Pelabuhan 42005 Port Klang Selangor.	5.80	25-03-1997
3.	PANGKALAN BEKALAN KEMAMAN SDN. BHD. P.O. Box 64 24007 Kemaman, Terengganu. Tel : 09-863 1566 / 863 1668 Faks : 09-863 1716	Kawasan Pangkalan Bekalan Kemaman Kemaman Terengganu.	3.31	01-12-1997
4.	MALAYSIA AIRPORTS (SEPANG) SDN. BHD. 3rd & 4th Floor, Airport Management Centre KL International Airport, 64000 KLIA, Selangor. Tel : 03-8777 8888 / 8776 2000 Faks : 03-8926 5510 / 8926 5209	PT 13, PT 89, PT 39 Bandar Lapangan Terbang Antarabangsa Sepang Daerah Sepang Selangor.	120.00	14-02-1998

Bil No	Pemegang Lesen & Alamat Perhubungan Licensee & Contact Address	Kawasan Bekalan Area of Supply	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Tarikh Lesen Dikeluarkan Date of Licence Issued
5.	PETRONAS GAS BHD. Centralized Utility Facilities(CUF) Integrated Petrochemical Complex, KM 106 Jalan Kuantan/K. Terengganu, 24300 Kertih, Kemaman, Terengganu. Tel : 09-830 5500 Faks : 09-830 5514	Petrochemical Complex Kerteh Industrial Area Terengganu.	210.00 *	28-05-1998
6.	PETRONAS GAS BHD. Centralized Utility Facilities(CUF) Integrated Petrochemical Complex, Lot 139A Gebeng Industrial Area, Phase III, 26080 Kuantan, Pahang. Tel : 09-586 3300 Faks : 09-586 3311	Petrochemical Complex Gebeng Industrial Area Pahang.	105.00 *	28-05-1998
7.	NUR DISTRIBUTION SDN. BHD. Central Control Building (CCB), Lot 30, Jalan Hi-Tech 4 Kulim Hi-Tech Park, 09000 Kulim, Kedah. Tel : 04-401 0100 Faks : 04-401 0344 / 401 0319	Kulim Hi-Tech Industrial Park Kedah.	440.00	17-09-1998
8.	GAS DISTRICT COOLING (KLCC) SDN. BHD. Level 1, Bangunan DCCI Persiaran KLCC Off Jalan Ampang, 50088 Kuala Lumpur. Tel : 03-2380 5660 Faks : 03-2381 7086	Bangunan DCC 1/ DCC 2 KLCC DCS/Co- Generation Plant Persiaran KLCC, Jalan Ampang 50088 Kuala Lumpur.	40.00 *	30-08-2000
9.	GENTING UTILITIES & SERVICES SDN. BHD. Engineering Department, Genting Highlands Resort 69000 Bentong, Pahang. Tel : 03-6105 2637 Faks : 03-6015 2600	Kawasan Genting Highlands Negeri Pahang/ Selangor	48.00	27-10-2000
10.	IKANO CORPORATION SDN. BHD. No. 2, Jalan PJU 7/2, Mutiara Damansara 47800 Petaling Jaya, Selangor. Tel : 03-7720 7350 Faks : 03-7726 6277	Lot PT 400038 Mutiara Damansara 47800 Petaling Jaya Selangor.	7.94	23-12-2003
11.	AEON CO. (M) BHD. Jusco Taman University Shopping Centre No. 4, Jalan Pendidikan, Taman University 81300 Skudai, Johor. Tel : 07-520 8700 Faks : 07-521 3000	PTD 62861, Jalan Pendidikan Taman Universiti Mukim Pulai, Daerah Johor Bahru Johor.	3.11	28-02-2004
12.	INSTITUTE OF TECHNOLOGY PETRONAS SDN. BHD. Bandar Seri Iskandar, 31750 Tronoh, Perak. Tel : 05-368 8000 Faks : 05-365 4075	Kampus Universiti Teknologi Petronas Tronoh Perak.	8.40 *	26-01-2006
13.	ENG LIAN ENTERPRISE SDN. BHD. 9 Jalan Ampang #05-00, 50450 Kuala Lumpur. Tel : 03-2056 0600 Faks : 03-2056 0700	Lot 51533 Mukim Kuala Lumpur Kuala Lumpur.	2.29	01-03-2006
14.	AEON CO. (M) BHD. Jusco Metro Prima Shopping Centre, 1st. Floor No. 1, Jalan Metro Prima, 52100 Kepong, Kuala Lumpur. Tel : 03-6259 1122 Faks : 03-6259 2805	PT 20954 Mukim Batu Kuala Lumpur.	4.83	15-03-2006
15.	MALAKOFF UTILITIES SDN. BHD. Suite 4-G-A, Ground Floor, Block 4 Plaza Sentral, Jalan Stesen Sentral 5, 50470 Kuala Lumpur. Tel : 03-2263 3388 Faks : 03-2263 3366	Kawasan Pembangunan Kuala Lumpur Sentral Kuala Lumpur.	100.00	15-10-2006
16.	ASM PROPERTIES SDN. BHD. Suite 5.4, Level 5, Maju Junction Mall 1001, Jalan Sultan Ismail, 50250 Kuala Lumpur. Tel : 03-2772 8500 Faks : 03-2772 8501	Maju Junction Mall Lot PT 19 Seksyen 46 Kuala Lumpur.	10.80	24-11-2006
17.	LEMBAGA TABUNG HAJI Tingkat 7, Bangunan TH Perdana 1001, Jalan Sultan Ismail, 50250 Kuala Lumpur. Tel : 03-2781 9020 Faks : 03-2781 9023	Menara TH Perdana Lot 101 Mukim Kuala Lumpur Kuala Lumpur.	3.00	29-12-2006

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18.	AEON CO. (M) BHD. AEON Cheras Selatan Shopping Centre Aras 1, Lebuhr Tun Hussien Onn, 43200 Balakong, Selangor. Tel : 03-9080 3498 Faks : 03-9080 3598	AEON Cheras Selatan Shopping Centre PT 41977 (Sebahagian Lot 2225) Mukim Cheras, Daerah Hulu Langat Selangor.	8.16	05-02-2007
19.	AEON CO. (M) BHD. Jusco Seremban 2 Shopping Centre 112, Persiaran S2 B1, Seremban 2 70300 Seremban, Negeri Sembilan. Tel : 06-601 5643 Faks : 06-601 5645	AEON Seremban 2 Lot PT 10787 HS(D) 97966 & PT 10790 HS(D) 97969 Mukim Rasah Daerah Seremban Negeri Sembilan.	7.05	30-03-2007
20.	MID VALLEY CITY ENERGY SDN. BHD. Level 32, The Gardens South Tower, Mid Valley City Lingkar Syed Putra, 59200 Kuala Lumpur. Tel : 03-2289 8989 Faks : 03-2289 8981	The Gardens (Phase 2) Lot PT13, Mukim Kuala Lumpur Daerah Kuala Lumpur 59200 Wilayah Persekutuan.	55.00	03-05-2007
21.	BANDAR UTAMA CITY CORPORATION SDN. BHD. 1, Persiaran Bandar Utama Bandar Utama 47800 Petaling Jaya Selangor. Tel : 03-7728 8878 Faks : 03-7728 9978	Kawasan Pembangunan Bandar Utama Lot PT 37649, 37650, 17970-17974, 17976 dan 15366, Mukim Sungai Buloh, PT 18 dan 17968 Bandar Petaling Jaya dan PT 22, 23, 44, 45, 83, Lot 27657-27659, 27962, 27669, 27671, 27673-27676, 27679, 27680 Seksyen 39, Bandar Petaling Jaya, Daerah Petaling Jaya, 47800 Selangor.	100.00	10-05-2007
22.	FUSION ENERGY SDN. BHD. Lot 2319, Kaw. Perindustrian Olak Lempit Mukim Tanjung 12, 42700 Banting Selangor. Tel : 03-3182 2000 Faks : 03- 3182 2382 / 3182 2279	Lion Group Complex Lot 2319, 2320, 2321, 2323, 2582, 2823, dan 2824 Mukim Tanjung Dua Belas Daerah Kuala Langat 42700 Selangor.	418.00 *	12-06-2007
23.	ENG LIAN ENTERPRISE SDN. BHD. 9 Jalan Ampang #05-00 50450 Kuala Lumpur. Tel : 03-2056 0600 Faks : 03-2056 0700	Bangsar Village II Lot 43872, 43873 dan 43874 Mukim Kuala Lumpur, Daerah Kuala Lumpur 59100 Wilayah Persekutuan.	3.12	03-09-2007
24.	Y.S. TANG HOLDINGS SDN. BHD. 1-888, KB Mall, Jalan Hamzah 15050 Kota Bharu, Kelantan. Tel : 09-747 6622 Faks : 09-747 5225	KB Mall, PT 101, Jalan Hamzah Seksyen 16 Bandar Kota Bharu 15050 Kelantan.	3.16	18-09-2007
25.	JURUS KOTA SDN. BHD. 2-888, M-Floor, Alor Star Mall Kawasan Perusahaan Tandop Baru, 05400 Alor Star, Kedah. Tel : 04-772 9233 Faks : 04-771 2033	Alor Star Mall, Lot 801 & 802 Dalam Kawasan Perniagaan Dan Industri Kecil Sri Tandop 1, Mukim Pengkalan Kundor Daerah Kota Setar, Kedah.	3.59	18-09-2007
26.	WISMA CENTRAL MANAGEMENT CORPORATION Lot 2.142, 1st Floor, Wisma Central Jalan Ampang, Box #198, 50450 Kuala Lumpur. Tel : 03-2161 7522 Faks : 03-2161 9721	Wisma Central Geran 10015, Lot 150 Seksyen 58, Bandar Kuala Lumpur 50450 Wilayah Persekutuan.	2.20	31-10-2007

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27.	AEON CO. (M) BHD. AEON BukitTinggi Shopping Centre Management Office, Level 1, No. 1, Persiaran Batu Nilam 1/ks 6 Bandar Bukit Tinggi 2, 41200 Klang, Selangor. Tel : 03-3326 2370 Faks : 03-3326 2371	AEON Co. (M) Bhd. Mall Lot PT 2042 HS(D) 105957 dan PT 2043 HS(D) 105958 Mukim Klang Daerah Klang Selangor.	12.00	11-12-2007
28.	TRADEWINDS PROPERTIES SDN. BHD. 21st Floor, Wisma Zelan No. 1, Jalan Tasik Permaisuri 2 Bandar Tun Razak, Cheras, 56000 Kuala Lumpur. Tel : 03-9106 3166 Faks : 03 9106 3177	Kompleks Antarabangsa Lot 1158, Seksyen 57 Mukim Bandar Kuala Lumpur Daerah Kuala Lumpur 50250 Wilayah Persekutuan.	4.97	11-12-2007
29.	GCH RETAIL (MALAYSIA) SDN. BHD. Giant Hypermarket Kuala Terengganu (Complex Division), Lot PT 1485, Jalan Hiliran 21100 Chabang Tiga Kuala Terengganu, Terengganu Tel : 09- 631 9220 Faks : 09-631 9230	GCH Retail (Malaysia) Sdn. Bhd. Mall HS(D) 5917, PT 1485 Mukim Cabang Tiga Daerah Kuala Terengganu 21100 Terengganu.	3.30	09-01-2008
30.	AWONA LAND SDN. BHD. Suite 4.09.03, 4th Floor, Central Square No. 23, Jalan Kampung Baru, 08000 Sungai Petani, Kedah. Tel : 04- 423 8288 Faks : 04-422 4552	Central Square Shopping Centre Lot 134 HS(D) 759/95 Mukim Sungai Petani, Daerah Kuala Muda 08000 Kedah.	4.10	14-03-2008
31.	AEON CO. (M) BHD. Jusco Kinta City Shopping Centre No. 2, Jalan Teh Lean Swee Off Jalan Sultan Azlan Shah Utara, 31400 Ipoh, Perak. Tel : 05-548 4668 / 545 0913 Faks : 05-546 0899	AEON Kinta City Shopping Centre Lot 51150 Mukim Ulu Kinta Daerah Kinta, 31400 Ipoh Perak.	7.65	18-03-2008
32.	MENARA HAP SENG SDN. BHD. 19th Floor, Menara Hap Seng Letter Box No. 83, Jalan P. Ramlee 50250 Kuala Lumpur. Tel : 03-2145 1363 / 2145 9363 Faks : 03-2145 7818	Menara Hap Seng Lot 593 & 594, Mukim Bandar Kuala Lumpur Daerah Kuala Lumpur 50250 Kuala Lumpur Wilayah Persekutuan.	4.82	19-03-2008
33.	GCH RETAIL (MALAYSIA) SDN. BHD. Giant Hypermarket Kuantan, (Complex Division), Lot 5197 Jalan Tanah Putih, Seksyen 124, 25150 Kuantan, Pahang. Tel : 09-515 6999 Faks : 09-515 6466	Lot 5197 Mukim Kuantan Daerah Kuantan 25100 Pahang.	2.96	10-04-2008
34.	AEON CO. (M) BHD. Aeon Seberang Prai City Shopping Centre Management Office, 1st Floor Perdana Wawasan Trade Centre, Jalan Perda Timur 14000 Bukit Mertajam, Seberang Prai Tengah, Pulau Pinang. Tel : 04-537 8055 Faks : 04-537 9022	Lot H.S.(M): 378 / PT 802 Mukim 6 & 7 Seberang Perai Tengah 14000 Pulau Pinang.	14.00	28-04-2008
35.	MALAYSIAN AIRLINE SYSTEM BERHAD 3rd Floor, Administration Building 1 MAS Complex A, Sultan Abdul Aziz Shah Airport 47200 Subang, Selangor. Tel : 03-8777 2773 Faks : 03-8783 3089	Kompleks Kampus MAS Lot PT 19 Mukim Dengkil Daerah Sepang 64000 Selangor.	25.00	29-04-2008
36.	GCH RETAIL (MALAYSIA) SDN. BHD. Giant Superstore Ulu Klang - Complex Division Lot 13793 & 13796, Jalan Changkat Permata Taman Permata, 53300 Kuala Lumpur. Tel : 03-4106 2275 / 4105 3194 Faks : 03-4106 7414	Lot 13793 dan 13796 Mukim Setapak Daerah Gombak 53300 Selangor.	2.68	20-05-2008

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37.	AMTRUSTEE BERHAD Hektar Premier Sdn. Bhd. Lot F36, First Floor, Subang Parade No. 5, Jalan SS 16/1, 47500 Subang Jaya, Selangor. Tel : 03-5032 9778 / 5633 2530 Faks : 03-5633 8079	Subang Parade Lot 14193, Mukim Bandar Subang Jaya Daerah Petaling 47500 Selangor.	10.00	07-05-2008
38.	RELIABLE CAPACITY SDN. BHD. S-3, Level 2, Axis Atrium @ Axis Pandan Jalan Cempaka, Taman Cempaka, 68000 Ampang, Selangor. Tel : 03-9282 1008 Faks : 03-9282 7008	Parcel 1 Perdagangan 'Axis Atrium' No. Lot 27985, Mukim Ampang Daerah Hulu Langat Selangor.	3.60	13-06-2008
39.	GCH RETAIL (MALAYSIA) SDN. BHD. (Complex Management Division - Giant Tampoi) Lot 54, Jalan Skudai, 81200 Tampoi, Johor Bahru, Johor. Tel : 07-238 2353 Faks : 07-238 2354	Lot 54, Mukim Tampoi Daerah Johor Bharu 81200 Johor.	5.10	08-07-2008
40.	GCH RETAIL (MALAYSIA) SDN. BHD. (Complex Division - Giant Hypermarket Plentong) No. 3, Jalan Masai Lama, Mukim Plentong, 81750 Johor Bharu. Tel : 07-358 1402 Faks : 07-352 6532	Lot P.T.D. 116058 dan 116059 Mukim Plentong Daerah Johor Bharu Johor.	4.20	17-07-2008
41.	GCH RETAIL (MALAYSIA) SDN. BHD. Giant Hypermarket Skudai, Lot 3066 & 3067 Mukim Tebrau, 81200 Johor Bharu, Johor. Tel : 07-554 7233 Faks : 07-554 7229	Lot 3066 & 3067 Mukim Tebrau Daerah Johor Bharu 81200 Johor.	3.70	12-08-2008
42.	LIANBANG VENTURES SDN. BHD. F4-40, Level 4, Dataran Pahlawan Melaka Megamall Jalan Merdeka, 75000 Bandar Hilir, Melaka. Tel : 06-282 1828 Faks : 06-283 1827	Dataran Pahlawan Melaka Megamall Lot 14, 141 dan 142 Mukim Kawasan Bandar XXVII, Daerah Melaka Tengah Melaka.	5.52	29-10-2008
43.	GCH RETAIL (MALAYSIA) SDN. BHD. Giant Mall Kelana Jaya No. 33, Jalan SS 6/12 SS 6, Kelana Jaya, 47301 Petaling Jaya, Selangor. Tel : 03-7880 4714 / 3742 Faks : 03-7803 7858	Giant Mall Kelana Jaya Lot PT 67 Seksyen 40 Mukim Bandar Petaling Jaya Daerah Petaling 47301 Selangor.	6.11	05-11-2008
44.	GCH RETAIL (MALAYSIA) SDN. BHD. Giant Hypermarket Shah Alam Stadium Mezzanine Floor, Lot 2, Persiaran Sukan, Seksyen 13, 40100 Shah Alam, Selangor. Tel : 03-5544 8888 Faks : 03-5511 9692	Lot 2, Seksyen 13 Daerah Shah Alam Selangor.	4.20	05-11-2008
45.	TROPICANA CITY SDN. BHD., (Formerly Known as Dijaya Land Sdn. Bhd.) Management Office, Lot B1-01, Basement 1 Tropicana City Mall, No. 3 Jalan SS20/27 47400 Petaling Jaya, Selangor. Tel : 03-7710 1818 Faks : 03-7710 0202	Tropicana City Lot 45821 Mukim Damansara Utama Daerah Petaling Jaya Selangor.	11.03	05-11-2008
46.	BR PROPERTY HOLDINGS SDN. BHD. Level 10 Menara BRDB, 285 Jalan Maarof Bukit Bandaraya, 59000 Kuala Lumpur. Tel : 03-2688 2888 Faks : 03-2284 3988	Bangsar Shopping Centre Lot 41274 Daerah Kuala Lumpur Wilayah Persekutuan Kuala Lumpur.	8.51	18.11.2008
47.	DREAM PROPERTY SDN. BHD. 2-12, 2nd Floor, Batu Pahat Mall Jalan Kluang 83000 Batu Pahat, Johor. Tel : 07-433 7733 Faks : 07-438 7773	Batu Pahat Mall Lot 2566 Mukim Simpang Kanan Daerah Batu Pahat Johor.	7.35	18-11-2008
48.	AEON CO. (M) BHD. AEON Bukit Indah Shopping Centre 1st Floor, Management Office, No. 8, Jalan Indah 15/2 Bukit Indah, 81200 Johor Bahru, Johor. Tel : 07-2368 071 Faks : 07-2368 076	Lot PTD 90606 Mukim Pulai Daerah Johor Bahru Johor.	8.00	26-11-2008

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49.	TESCO STORES (M) SDN. BHD. (Melaka Branch) No. 1 Jalan Tun Abdul Razak Peringgit 74500 Melaka. Tel : 06-288 3078 Faks : 06-288 2028	Kompleks Perniagaan TESCO Lot 1 PT 1053 dan Lot 2 PT 1111 Mukim Peringgit Lot 3 PT2 Mukim Town Area XXXII dan Lot 4 PT70 Mukim Town Area XXXIII Daerah Melaka Tengah 75400 Melaka.	3.01	26-11-2008
50.	GCH RETAIL (MALAYSIA) SDN. BHD. Giant Hypermarket Klang Lot 83191 & 83192, Persiaran Batu Nilam Bandar Bukit Tinggi 1, Jalan Langat, 41200 Klang, Selangor. Tel : 03-3323 5518 Faks : 03-3323 5863	Lot PT 62366(HSD 63350), PT 62367(HSD 63351) dan PT 75234A (HSD 68651) Mukim Kelang Daerah Kelang Selangor.	3.30	03-12-2008
51.	TANAH SUTERA DEVELOPMENT SDN. BHD. No. 2, Jalan Sutera Merah 2 Taman Sutera 81200 Johor Bharu. Tel : 07-289 9009 Faks : 07-289 9119	Kompleks Perniagaan Sutera Mall Lot Sebahagian PTD 67962 Mukim Pulai Daerah Johor Bharu Johor.	5.98	03-12-2008
52.	GCH RETAIL (MALAYSIA) SDN. BHD. Giant Hypermarket Senawang, Lot 1571 Jalan Senawang Taman Komersil Senawang, 70450 Seremban, Negeri Sembilan. Tel : 06-678 0719 / 678 0720 Faks : 06-678 2360	Lot PT 1571 HS(D) 133690 Pekan Senawang Daerah Seremban Negeri Sembilan.	2.12	03-12-2008
53.	MALAYSIA AIRPORTS SDN. BHD. Lapangan Terbang Sultan Ismail Petra 16100 Kota Bharu Kelantan. Tel : 09-773 7400 Faks : 09-773 2852	Kompleks Lapangan Terbang Sultan Ismail Petra Lot 833 (Sek 40), Mukim Pengkalan Chepa Dan Lot 2209 (Sek 39), Mukim Baung Daerah Kota Bharu Kelantan.	2.56	19-12-2008
54.	GCH RETAIL (MALAYSIA) SDN. BHD. Giant Hypermarket Shah Alam Stadium Mezzanine Floor, Lot 2, Persiaran Sukan, Seksyen 13, 40100 Shah Alam, Selangor. Tel : 03-5544 8888 Faks : 03-5511 9692	Lot HS(D)247769 PTB 20274 Daerah Bandar Johor Bahru Johor.	1.95	14-01-2009
55.	PERMODALAN NASIONAL BERHAD 19th Floor, Menara Tun Ismail Mohamed Ali No. 25, Jalan Raja Laut, 50350 Kuala Lumpur. Tel : 03-2694 2213 Faks : 03-2691 3791	Menara Tun Ismail Mohamed Ali Lot 1406 Mukim Bandar Kuala Lumpur Wilayah Persekutuan Kuala Lumpur.	5.95	04-02-2009
56.	AEON CO. (M) BHD. Aeon AU2 Shopping Centre (Setiawangsa) No. 6, Jalan Taman Setiawangsa (Jalan 37/56) AU2, Taman Keramat, 54200 Kuala Lumpur. Tel : 03-4257 2533 Faks : 03-4257 2633	Lot PT 1019 (HSD 83614) Mukim Hulu Kelang Wilayah Persekutuan Kuala Lumpur.	3.89	16-02-2009
57.	IVORY GLENEARY SDN. BHD. 77-4B-1, Penang Times Square Jalan Dato Keramat 10150 George Town Penang. Tel : 04-210 9020 Fax : 04-210 9021	Penang Times Square Lot 73, 96, 98, 101, 102, 145, 146, 150, 159, 160, 163, 278, 279, 735 hingga 753 dan 767 Seksyen 10 Georgetown 10150 Pulau Pinang.	15.80	16-02-2009
58.	BRONZE TOWERS SDN. BHD. No. B 60, 1st Floor, Lorong Tun Ismail 5 25000 Kuantan Pahang. Tel : 09-515 9303 Faks : 09-515 9304	Plaza Kuantan Lot PT 6727/12 dan PT 6727/13 Mukim Kuala Kuantan Daerah Kuantan Pahang.	2.50	16-02-2009

Bil No	Pemegang Lesen & Alamat Perhubungan Licensee & Contact Address	Kawasan Bekalan Area of Supply	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Tarikh Lesen Dikeluarkan Date of Licence Issued
59.	MAGIC COAST SDN. BHD. AmanahRaya Hartanah Sdn. Bhd. Finance & Operation Department Tingkat 6, Wisma Prowara, 19 Jalan Melaka, 50100 Kuala Lumpur. Tel : 03-2036 5151 Faks : 03-2070 5241	Lot 582 Mukim Jalan Tun Sambanthan Seksyen 55, Daerah Kuala Lumpur Wilayah Persekutuan Kuala Lumpur.	13.00	23-02-2009
60.	FLORAL E-JOY SDN. BHD. No : 36A (1st. Floor), Jalan Persiaran Flora Utama Taman Flora Utama, 83000 Batu Pahat, Johor. Tel : 07-432 7899 Faks : 07-432 6899	Square 1, Lot PTD 48031 Mukim Simpang Kanan Daerah Batu Pahat Johor.	1.99	25-02-2009
61.	LEGEND ADVANCE SDN. BHD. (IOI Mall) LG-01, Lower Ground Floor, IOI Mall Lebuhraya Putra Utama, Bandar Putra 81000 Kulai, Johor. Tel : 07-599 9929 Faks : 07-599 9939	IOI Mart Lot 5592 - 5595 Mukim Senai Daerah Kulai Johor	0.92	12-03-2009
62.	MSL PROPERTIES SDN. BHD. Wangsa Walk Mall Management Office, Lot G93A Wangsa Avenue, 9, Jalan Wangsa Perdana 1 Bandar Wangsa Maju, 53300 Kuala Lumpur. Tel : 03-4142 8888 Faks : 03-4142 6900	Wangsa Walk Mall Lot PT 8282 (HSD 111811) Mukim Setapak Daerah Kuala Lumpur Wilayah Persekutuan.	8.63	20-03-2009
63.	SALAK PARK SDN. BHD. No. 1-1-1, Wisma Mahajaya, Block A Megan Salak Park, Jalan 2/125E Taman Desa Petaling, 57100 Kuala Lumpur. Tel : 03-9051 3333 Faks : 03-9059 2880	Lot No. 38606 and 38603 Taman Desa Petaling Mukim Petaling Daerah Wilayah Persekutuan 57100 Kuala Lumpur.	2.27	27-04-2009
64.	TENAGA NUSANTARA SDN. BHD. Lot 2-18, 2nd Floor, Kluang Mall, Jalan Rambutan Bandar Kluang, 86000 Kluang, Johor. Tel : 07-776 1240 Faks : 07-776 1202	Lot 6113 Mukim Bandar Kluang Daerah Kluang 86000 Johor.	4.50	13-05-2009
65.	TECHNOLOGY PARK MALAYSIA CORPORATION SDN. BHD. 5th Floor, Enterprise 4, Lebuhraya Puchong - Sg. Besi Bukit Jalil, 57000 Kuala Lumpur. Tel : 03-8998 2260 Faks : 03-8998 2226	Taman Teknologi Malaysia Lot PT 5517, Mukim Petaling Daerah Kuala Lumpur Wilayah Persekutuan.	4.65	18-05-2009
66.	1ST AVENUE MALL SDN. BHD. Centre Management Office, 5th Floor, 1st Avenue 182, Jalan Magazine, 10300 Penang. Tel : 04-261 1121 Faks : 04-263 1121	Lot 386 Mukim Seksyen 17 Daerah Georgetown Pulau Pinang.	6.08	22-05-2009
67.	MYDIN MOHAMED HOLDINGS BHD Mydin HQ Lot 675 & 676, Persiaran Subang Permai, Off Jalan SS13/1K 47500 Subang Jaya, Selangor. Tel : 03-8073 6000 Faks : 03-8073 6388	MYDIN Wholesale Hypermarket Lot 675 & 676 Mukim Damansara Daerah Petaling Jaya Selangor.	5.62	02-06-2009
68.	TESCO STORES (MALAYSIA) SDN. BHD. Head Office, Level 3 No. 3, Jalan 7A/62A, Bandar Manjalara 52200 Kuala Lumpur. Tel : 03-6287 6000 Faks : 03-6287 6001	TESCO Seri Alam Lot PTD 111515 Mukim Plentong Daerah Johor Bharu Johor.	3.40	16-06-2009
69.	TESCO STORES (MALAYSIA) SDN. BHD. Head Office, Level 3 No. 3, Jalan 7A/62A, Bandar Manjalara 52200 Kuala Lumpur. Tel : 03-6287 6000 Faks : 03-6287 6001	TESCO Kelang Lot 83595, Mukim Pekan Pandamaran Daerah Kelang Selangor.	3.40	16-06-2009
70.	TESCO STORES (MALAYSIA) SDN. BHD. Head Office, Level 3 No. 3, Jalan 7A/62A, Bandar Manjalara 52200 Kuala Lumpur. Tel : 03-6287 6000 Faks : 03-6287 6001	TESCO Puchong Lot PT 2, Mukim Pekan Desa Puchong Daerah Petaling Selangor.	3.40	16-06-2009

Bil No	Pemegang Lesen & Alamat Perhubungan Licensee & Contact Address	Kawasan Bekalan Area of Supply	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Tarikh Lesen Dikeluarkan Date of Licence Issued
71.	TESCO STORES (MALAYSIA) SDN. BHD. Head Office, Level 3 No. 3, Jalan 7A/62A, Bandar Manjalara 52200 Kuala Lumpur. Tel : 03-6287 6000 Faks : 03-6287 6001	TESCO Ipoh Lot PT 217003 Mukim Hulu Kinta Daerah Kinta Perak.	3.40	16-06-2009
72.	TESCO STORES (MALAYSIA) SDN. BHD. Head Office, Level 3 No. 3, Jalan 7A/62A, Bandar Manjalara 52200 Kuala Lumpur. Tel : 03-6287 6000 Faks : 03-6287 6001	TESCO Kajang Lot PT 37820, Mukim Kajang dan Lot PT 66452 & 44628 Seksyen 9, Mukim Bandar Kajang Daerah Ulu Langat Selangor.	3.40	16-06-2009
73.	KUMPULAN WANG SIMPANAN PEKERJA Ketua Cawangan, Bangunan KWSP Ipoh Jalan Ipoh Hospital Greentown, 30450 Ipoh, Perak. Tel : 03-2616 2269 Faks : 03-2693 8704	Lot PT 144258 Bandar Ipoh Daerah Kinta Perak.	2.44	16-06-2009
74.	SEE SEN CHEMICAL BHD. PT 3940, Kawasan Perindustrian Teluk Kalong 24000 Kemaman, Terengganu. Tel : 09-863 2142 / 863 2304 Faks : 09-863 2143	Malay-Sino Chemical Industries Sdn. Bhd. Lot 2989, 3558, 3557 dan 4524 Mukim Teluk Kalong, Daerah Kemaman Terengganu.	6.00 *	17-06-2009
75.	CREST WORLDWIDE RESOURCES SDN. BHD. Wisma SKN, No. 5, Persiaran Lidco 1 Off Jalan Yap Kwan Seng, 50450 Kuala Lumpur. Tel : 03-2162 1929 Faks : 03-2162 0929	Lot 134, PT 32, Seksyen 44 Mukim Bandar Kuala Lumpur Daerah Kuala Lumpur Wilayah Persekutuan.	7.00	17-06-2009
76.	WESTPORTS MALAYSIA SDN. BHD. P.O. Box 266 Pulau Indah, 42009 Port Klang. Tel : 03-3169 4000 Faks : 03-3169 4101	Lot PT 65746 Mukim Klang Daerah Klang Selangor.	83.00	26-06-2009
77.	TESCO STORES (MALAYSIA) SDN. BHD. Head Office, Level 3 No. 3, Jalan 7A/62A, Bandar Manjalara 52200 Kuala Lumpur. Tel : 03-6287 6000 Faks : 03-6287 6001	TESCO Extra Ipoh Lot PT 128421 Mukim Hulu Kinta Daerah Kinta Perak.	2.76	02-07-2009
78.	TESCO STORES (MALAYSIA) SDN. BHD. Head Office, Level 3 No. 3, Jalan 7A/62A, Bandar Manjalara 52200 Kuala Lumpur. Tel : 03-6287 6000 Faks : 03-6287 6001	TESCO Extra Sungai Dua Lot 10252, Mukim 13 Daerah Timur Laut (DTL) Jalan Sungai Dua Pulau Pinang	1.70	02-07-2009
79.	TESCO STORES (MALAYSIA) SDN. BHD. Head Office, Level 3 No. 3, Jalan 7A/62A, Bandar Manjalara 52200 Kuala Lumpur. Tel : 03-6287 6000 Faks : 03-6287 6001	TESCO Extra Shah Alam Lot 1107, Mukim Bandar Shah Alam Daerah Petaling Selangor.	2.98	02-07-2009
80.	TESCO STORES (MALAYSIA) SDN. BHD. Head Office, Level 3 No. 3, Jalan 7A/62A, Bandar Manjalara 52200 Kuala Lumpur. Tel : 03-6287 6000 Faks : 03-6287 6001	TESCO Extra Cheras Lot PT 4476 Mukim Kuala Lumpur Daerah Kuala Lumpur Wilayah Persekutuan.	2.98	02-07-2009
81.	MRCB SELBORN CORPORATION SDN. BHD. MRCB Central Properties Sdn. Bhd. Level 22, 1 Sentral, Jalan Travers, Kuala Lumpur Sentral P. O. Box 12640, 50470 Kuala Lumpur. Tel : 03-2786 8080 Faks : 03-2780 7787	Plaza Alam Sentral Lot 58, Seksyen 14 Mukim Bandar Shah Alam Daerah Petaling Selangor.	11.00	08-07-2009

Bil No	Pemegang Lesen & Alamat Perhubungan Licensee & Contact Address	Kawasan Bekalan Area of Supply	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Tarikh Lesen Dikeluarkan Date of Licence Issued
82.	MALAYSIA AIRPORTS SDN. BHD. Lapangan Terbang Antarabangsa Langkawi 07100 Padang Mat Sirat Langkawi, Kedah. Tel : 04-955 1311 / 955 1312 Faks : 04-955 1314	Lapangan Terbang Antarabangsa TK1 Mukim Bohor & TK2 Mukim Padang Mat Sirat & TK3, TK4 Mukim Kedawang Daerah Langkawi Kedah. Langkawi	2.29	17-07-2009
83.	AMTRUSTEE BERHAD Lot B02, Mahkota Prade No. 1, Jalan Merdeka 75000 Melaka. Tel : 06-282 6151 Faks : 06-282 7305	Mahkota Parade Lot PT 487 Mukim Melaka Tengah Daerah Melaka Melaka.	10.80	17-07-2009
84.	MALAYSIA AIRPORTS SDN. BHD. Lapangan Terbang Sultan Ahmad Shah 25150 Kuantan, Pahang. Tel : 09-531 2150 / 531 2100 Faks : 09-538 4017	Lapangan Terbang Sultan Ahmad Shah Lot PT 86418, Mukim Kuala Kuantan Daerah Kuantan Pahang.	0.33	17-07-2009
85.	MALAYSIA AIRPORTS SDN. BHD. Lapangan Terbang Antarabangsa Pulau Pinang 11900 Bayan Lepas Pulau Pinang. Tel : 04-643 4411 Faks : 04-643 5399	Lapangan Terbang Antarabangsa Pulau Pinang Lot 7565 dan PT 230, 231, 232, 228, 229, 3096, 1610, TK1 dan TK2, Mukim 12 Daerah Barat Daya Pulau Pinang.	4.00	17-07-2009
86.	MYDIN MOHAMED HOLDINGS BHD. Mydin Melaka Hypermarket Lot 15060, 15061, 15062, Mukim Bukit Katil Melaka Tengah, 75450 Ayer Keroh, Melaka. Tel : 06-231 3007 Faks : 06-231 3070	MYDIN Wholesale Hypermarket MITC Melaka Lot 15060, 15061 & 15062 Mukim Bukit Katil Daerah Melaka Tengah Melaka.	4.30	14-09-2009
87.	PEMBINAAN TITIS JAYA SDN. BHD. TJ Mart, Lot 5035, Batu 17 1/2 Jalan Air-Hitam, Saleng, 81400 Senai, Johor. Tel : 07-598 4323 Faks : 07-598 5323	T.J. Mart, Lot 5035 Mukim Kulai Daerah Kulaijaya Johor.	0.55	11-09-2009
88.	AEON CO. (M) BHD. AEON Bandaraya Melaka Shopping Centre 1st Floor, Management Office, No. 2, Jalan Lagenda Taman 1 - Lagenda, 75400 Melaka. Tel : 06-281 9389 Faks : 06-281 6398	Jusco Shopping Mall Lot PT 1 Kawasan Bandar 32 dan PT 69 Kawasan Bandar 33 Daerah Melaka Tengah Melaka	22.50	05-10-2009
89.	KUANTAN PORT CONSORTIUM SDN. BHD. Wisma KPC, Km. 25, Tanjung Gelang, P.O.Box 199 25720 Kuantan, Pahang. Tel : 09-586 3888 Faks : 09-583 3714	Kuantan Port Lot 1863, Mukim Sungai Karang Daerah Kuantan Pahang.	3.49	05-10-2009
90.	SHELL REFINING COMPANY (FEDERATION OF MALAYA) BHD. Batu 1, Jalan Pantai 71000 Port Dickson, Negeri Sembilan. Tel : 06-647 1311 Faks : 06-647 4622	71000 Port Dickson Negeri Sembilan.	35.00 *	05-10-2009
91.	COUTURE HOMES SDN. BHD. A-12-02, Empire Office, Empire Subang, Jalan SS16/1 47500 Subang Jaya, Selangor. Tel : 03-5638 9888 Faks : 03-5631 9886	Lot 6 dan PT 20912 Mukim Bandar Subang Jaya Daerah Petaling Selangor	8.67	22-12-2009
92.	PETRONAS CHEMICALS MTBE SDN. BHD. Lot 111 & 112, Kawasan Perindustrian Gebeng P.O. Box 1, Balok 26080 Kuantan, Pahang. Tel : 09-585 6700 Faks : 09-585 4090	Polypropylene Malaysia Sdn. Bhd. (PMSB) No. Lot 111 dan 112 Mukim Gebeng, Daerah Kuantan 26080 Kuantan Pahang.	40.00	24-12-2010

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93.	KUMPULAN WANG SIMPANAN PEKERJA Jabatan Pengurusan Harta Tingkat 14, Bangunan KWSP, Jalan Raja Laut 50350 Kuala Lumpur. Tel : 03-2616 2269 Faks : 03-2693 8704	Lot 842, Seksyen 14 Mukim Bandar Georgetown Daerah Timur Laut Pulau Pinang	3.40	25-01-2010
94.	IPOHTOWER SDN. BHD. 16th Floor & Penthouse Ipoh Tower, Jalan Dato' Seri Ahmad Said 30450 Ipoh, Perak. Tel : 05-253 2688 / 253 2700 Faks : 05-253 2701	Complex Ipoh Tower Sdn. Bhd. Lot 23628 Mukim Bandar Ipoh (S) & 23629, 8701U, 9570U Mukim Bandar Ipoh (U) Daerah Kinta Perak.	4.25	03-05-2010
95.	JASA IMANI SDN. BHD. Level 2G, Menara Zenith Jalan Putra Square 6, Putra Square 25200 Kuantan, Pahang. Tel : 09-515 9595 Faks : 09-515 9578	Menara Pejabat Putra Square Lot 423, Seksyen 20(PN5596) Jalan Bukit Sekilau Bandar Kuantan Pahang	4.25	27-09-2010
96.	SEPANG GOLDCOAST SDN. BHD. 4th Floor, Wisma CNI No. 2, Jalan U1/17, Seksyen U1, Hicom Glenmarie Industrial Park 40000 Shah Alam, Selangor. Tel : 03-5569 0800 Faks : 03-5569 0900	Lot PT 5247 (PKT 67) Pantai Bagan Lalang, Mukim Sepang Daerah Sepang Selangor.	9.50	13-12-2010
97.	SETIA HARUMAN SDN. BHD. (Property Management Department) The Lodge, Persiaran Multimedia, Cyber 7 63000 Cyberjaya, Selangor. Tel : 03-8312 8000 Faks : 03-8312 8077	The Lodge Persiaran Multimedia Cyber 7 63000 Cyberjaya Selangor.	15.50	22-12-2010
98.	GCH RETAIL (MALAYSIA) SDN. BHD. Giant Superstore Lukut Lot 12532, Jalan Dataran Segar, Bandar Dataran Segar Batu 3, Jalan Port Dickson 71010 Port Dickson, Negeri Sembilan. Tel : 06-651 2012 Faks : 06-651 2011	Giant Superstore Lukut Complex Lot No. 12532 (Old Lot 1058) Mukim Port Dickson Daerah Port Dickson Negeri Sembilan	2.55	22-12-2010
99.	SUN VICTORY SDN. BHD. Level U2, Block C5, Solaris Dutamas No. 1, Jalan Dutamas 1, 50480 Kuala Lumpur. Tel : 03-6207 9426/6207 9468 Faks : 03-6207 9427	No. 1, Jalan Dutamas 150480 Kuala Lumpur.	5.08	18-01-2011
100.	ASTON VILLA SDN. BHD. 33-1-1 Villa Scott, Jalan Scott, Brickfields 50470 Kuala Lumpur. Tel : 03-2381 7777 Faks : 03-2381 8010	Lot 1810 (P.T. 3717 & P.T. 3718) Jalan Kelang Lama 58200 Kuala Lumpur.	5.41	29-04-2011
101.	AMTRUSTEE BERHAD Capitamalls Malaysia Trust, 170-06-01, Plaza Gurney Persiaran Gurney, 10250 Penang. Tel : 04-222 8222 Faks : 04-228 6666	No. Lot 2903 Mukim Seksyen 1 Daerah Timur Laut 10250 Pulau Pinang.	22.50	29-04-2011
102.	FESTIVAL CITY SDN. BHD. No. 67, Jalan Taman Ibu Kota, Taman Danau Kota 53300 Setapak, Kuala Lumpur. Tel : 03-4143 5576 Faks : 03-4142 3892	No. Lot 26220 Mukim Setapak 53300 Kuala Lumpur.	7.86	29-04-2011
103.	VIVA MALL SDN. BHD. Penthouse Corporate Suites, D-11-1 & 2, Level 13, Block D Menara Uncang Emas (Ue3), No. 85, Jalan Loke Yew 55200 Kuala Lumpur. Tel : 03-9281 3888 Faks : 03-9281 8993	Lot P.T. 4 Section 91A Jalan Loke Yew 55200 Kuala Lumpur.	14.02	29-04-2011
104.	AEON CO. (M) BHD. AEON Mahkota Cheras Shopping Centre Management Office, 1st Floor, Jalan Temenggung 21/9 Bandar Mahkota Cheras 43200 Cheras, Selangor. Tel : 03-9080 3579 Faks : 03-9080 3580	Lot PT 47250 Mukim Cheras Daerah Hulu Langat 43200 Selangor.	3.50	29-04-2011

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105.	AEON CO. (M) BHD. AEON Taman Equine Shopping Centre 1st Floor, Management Office No. 2, Jalan Equine, Taman Equine, Bandar Putra Permai 43300 Seri Kembangan, Selangor. Tel : 03-8945 2700 Faks : 03-8945 3700	AEON Taman Equine Shopping Mall No. Lot 53391 (PT 27427) Mukim Petaling Daerah Petaling Selangor.	5.44	11-05-2011
106.	JASTAMAX SDN. BHD. Wisma Mah Sing, Penthouse Suite 2 No. 163, Jalan Sungai Besi, 57100 Kuala Lumpur. Tel : 03-9221 6888 Faks : 03-9222 8380	Lot PT 657 Seksyen 92 Sungai Besi 57100 Kuala Lumpur.	2.72	26-05-2011
107.	UPWELL SHOPPING COMPLEX (SEGAMAT) SDN. BHD. No. 25 - 39, Jalan Syed Abdul Kadir 85000 Segamat, Johor. Tel : 07-932 8888 Faks : 07-932 4732	Lot PTD 6880 – 6894 Jalan Syed Abdul Kadir 85000 Segamat Johor.	0.75	26-05-2011
108.	GREENHILL RESOURCES SDN. BHD. Centre Management Office, No. 7, Persiaran Setia Dagang Bandar Setia Alam, Seksyen U13, 40170 Shah Alam, Selangor. Tel : 03-3375 8788 Faks : 03-3375 8799	No. PT 26535, Mukim Bukit Raja Daerah Petaling Selangor.	17.00	24-06-2011
109.	MALAYSIA AIRPORTS SDN. BHD. Skypark Terminal, Lapangan Terbang Sultan Abdul Aziz Shah 47200 Subang Selangor. Tel : 03-7845 3245 Faks : 03-7846 3679	Lapangan Terbang Sultan Abdul Aziz Shah Complex Lot 1210 dan PT 46225 Mukim Sungai Buloh dan Damansara Daerah Petaling Selangor.	14.00	29-06-2011
110.	MALAYSIA AIRPORTS SDN. BHD. Lapangan Terbang Sultan Mahmud 21300 Kuala Terengganu, Terengganu. Tel : 09-667 3666 / 662 4084 Faks : 09-662 6670	Lot 11467, PT12716K, PT12717K, PT12718 Lapangan Terbang Sultan Mahmud Terengganu.	1.60	29-06-2011
111.	MALAYSIA AIRPORTS SDN. BHD. Lapangan Terbang Sultan Abdul Halim 06550 Alor Setar, Kedah. Tel : 04-714 2994 Faks : 04-714 5345	Lot TK1, TK2, TK3, PT230, 945, 824, 831, 828, 001061 Lapangan Terbang Sultan Abdul Halim Kedah.	1.31	29-06-2011
112.	BADAN PENGURUSAN BERSAMA RIVIERA BAY CONDOMINIUM Badan Pengurusan Bersama Kondominium Riviera Bay 10 km, Jalan Tanjung Kling, 76400 Melaka. Tel : 06-315 3888 Faks : 06-315 3677 / 315 3999	Lot 134, 135, 136, 137, 292 dan Sebahagian Lot 281 dan 133, Tanjung Keling Melaka Tengah Melaka.	3.00	25-07-2011
113.	GSL DEVELOPMENT SDN. BHD. (Bellworth Developments Sdn. Bhd.), No. 16, Jalan Wan Kadir Taman Tun Dr. Ismail, 60000 Kuala Lumpur. Tel : 03-7726 6688 Faks : 03-7725 8285	No. Lot 51888 Mukim Kuala Lumpur 60000 Wilayah Persekutuan Kuala Lumpur.	6.42	27-07-2011
114.	PERSTIMA UTILITY SDN. BHD. PLO 255, Jalan Timah 3 Kawasan Perindustrian Pasir Gudang 81700 Pasir Gudang, Johor. Tel : 07-254 1200 Faks : 07-251 4618	Perstima Berhad, No. Lot 00051694 Mukim Plentong Daerah Johor Bahru Johor.	5.67 *	27-07-2011
115.	KENANGA WHOLESALE CITY SDN. BHD. 8-01, Kompleks Kenanga Wholesale City No. 2, Jalan Gelugor, Off Jalan Kenanga 55200 Kuala Lumpur. Tel : 03-9222 2082 / 3082 Faks : 03-9221 8082 / 1404	Lot 477, Jalan Merlimau Seksyen 69 55200 Kuala Lumpur.	14.45	04-08-2011
116.	PLUS EXPRESSWAYS BERHAD Menara Korporat, Persada PLUS Persimpangan Bertingkat Subang KM 15, Lebuhraya Baru Lembah Klang 47301 Petaling Jaya, Selangor. Tel : 03-7801 6666 / 7666 4666 Faks : 03-7801 6600	35 Locations under PLUS Expressways	6.99	26-08-2011

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117.	AEON CO. (M) BHD. Jusco Taman Maluri Shopping Centre, 1st. Floor Jalan Jejaka, Taman Maluri Cheras, 55100 Kuala Lumpur. Tel : 03-9285 5222 Faks : 03-9285 9999	Lot 4991 (PT. 7041) Mukim Bukit Baru Daerah Melaka Tengah 75450 Melaka.	5.60	21-09-2011
118.	AEON CO. (M) BHD. Jusco Taman Maluri Shopping Centre, 1st. Floor Jalan Jejaka, Taman Maluri Cheras, 55100 Kuala Lumpur. Tel : 03-9285 5222 Faks : 03-9285 9999	Lot 33, 2386, 2595, 2596 dan 2388 Taman Maluri Jalan Jejaka, Seksyen 90A Cheras 55100 Wilayah Persekutuan Kuala Lumpur.	4.80	21-09-2011
119.	AEON CO. (M) BHD. JUSCO Permas Jaya Shopping Centre Lot 147003, Zone 3-1 Bandar Baru Permas Jaya, 81750 Johor Bahru, Johor. Tel : 07-388 0600 Faks : 07-386 1600	AEON Bandar Baru Permas Jaya Lot 147003, Zone 3-1 Mukim Permas Jaya 81750 Johor Bahru Johor.	4.05	21-09-2011
120.	CSF ADVISERS SDN. BHD. 3552 Jalan Teknokrat 6 63000 Cyberjaya, Selangor. Tel : 03-8318 1313 Faks : 03-8318 0303	Lot PT 12125 Mukim Dengkil Daerah Sepang 63000 Selangor.	6.80	18-10-2011
121.	CSF CX SDN. BHD. 7118 Jalan IMPACT 63000 Cyberjaya, Selangor. Tel : 03-8318 1313 Faks : 03-8318 0303	Lot PT 12144 dan Lot 12145 Mukim Dengkil Daerah Sepang 63000 Selangor.	20.40	18-10-2011
122.	OPTIMISTIC ORGANIC SDN. BHD. Lot 3351, Teluk Kalong Industrial Estate 24007 Kemaman, Terengganu Tel : 09-863 3029 / 863 3031 Faks : 09-863 3085	Plot No. 4248 Telok Kalong Industries Estate 24007 Kemaman Terengganu.	7.00 *	20-10-2011
123.	HUNZA PROPERTIES (PENANG) SDN. BHD. 5-4-8/11, Hunza Complex Jalan Gangsa, Island Park, 11600 Penang.	No. Lot 2960 (Plot A) dan 2961 (Plot B) Mukim Seksyen 1 Daerah Timur Laut Pulau Pinang.	16.00	03-11-2011
124.	AEON CO. (M) BHD. HQ Administration, 3rd Floor Jusco Taman Maluri Shopping Centre, Jalan Jejaka Taman Maluri Cheras, 55100 Kuala Lumpur. Tel : 03-9207 2005 Faks : 03-9207 2006 / 9207 2261	AEON Station 18 No. Lot 305553, 305554 & 305555 (PT 239099) Mukim Hulu Kinta, Daerah Kinta 31650 Perak.	16.00	03-11-2011
125.	AMTRUSTEE BERHAD CapitaMalls Malaysia Trust, Box No. 228, Level 4 Centre Management Office, The Mines, Jalan Dulang MINES Resort City, Seri Kembangan, 43300 Selangor. Tel : 03-8949 6288 Faks : 03-8949 6388	The Mines No. Lot PT 16722 Mukim Petaling Daerah Petaling 43300 Selangor.	10.00	22-11-2011
126.	OSK TRUSTEE BERHAD 6th Floor, Plaza OSK Jalan Ampang 50450 Kuala Lumpur. Tel : 03-7494 3000 Faks : 03-7492 6333	Sunway Pyramid Shopping Centre PT 161, Lot 32 dan Lot 51175 Bandar Sunway Petaling Jaya Selangor.	22.00	28-11-2011
127.	JELAS PURI SDN. BHD. No. 63, Lorong Batu Nilam 1A Bandar Bukit Tinggi, 41200 Klang Selangor. Tel : 03-3324 3255 Faks : 03-3323 1249	Paradigm Shopping Complex @ Kelana Jaya Lot PT11, PT12, PT13 dan PT15 Bandar Petaling Jaya Tambahan II Daerah Petaling Selangor.	6.50	03-02-2012

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128.	AEON CO. (M) BHD. HQ Administration, 3rd Floor Jusco Taman Maluri Shopping Centre, Jalan Jejaka Taman Maluri Cheras, 55100 Kuala Lumpur. Tel : 03-9207 2005 Faks : 03-9207 2006 / 9207 2261	AEON Rawang Shopping Complex No. Lot 1851 & 1246 Mukim Rawang Daerah Gombak Selangor.	8.50	14-02-2012
129.	WISMA MIRAMA SDN. BHD. 10th Floor, Wisma Mirama Jalan Wisma Putra, 50460 Kuala Lumpur. Tel : 03-2142 1666 Faks : 03-2148 1229	Wisma Mirama Complex Lot 888, Seksyen 69 Daerah Kuala Lumpur 50460 Wilayah Persekutuan Kuala Lumpur.	1.44	14-02-2012
130.	SUNGEIWANG PLAZA MANAGEMENT CORPORATION Lower Basement 1, Sungei Wang Plaza SWP Box No. 009, Jalan Bukit Bintang, 55100 Kuala Lumpur. Tel : 03-2142 6636 / 2144 9988 Faks : 03-2144 5269	Kompleks Beli-Belah Sungei Wang No. Lot 1197 Daerah Bukit Bintang Wilayah Persekutuan Kuala Lumpur.	20.00	21-02-2012
131.	GCH RETAIL (MALAYSIA) SDN. BHD. Complex Management, Giant Hypermarket Jalan Kebun PT 128899, Jalan Kebun / K57 Taman Maznah, 41000 Klang, Selangor. Tel : 03-3371 0075 Faks : 03-3371 0053	Giant Hypermarket No. Lot PT 128899, Jalan Kebun (KS7) Mukim Klang Daerah Klang Selangor	1.53	23-02-2012
132.	UNIVERSITENAGA NASIONAL SDN. BHD. UNITEN, Kampus Putrajaya, Jalan IKRAM-UNITEN 43000 Kajang, Selangor. Tel : 03-8921 2020 Faks : 03-8928 7166	Kampus UNITEN Putrajaya Jalan IKRAM-UNITEN 43000 Kajang Selangor.	3.83	22-03-2012
133.	UNIVERSITENAGA NASIONAL SDN. BHD. UNITEN, Kampus Putrajaya, Jalan IKRAM-UNITEN 43000 Kajang, Selangor. Tel : 03-8921 2020 Faks : 03-8928 7166	Kampus UNITEN Sultan Haji Ahmad Shah 26700 Bandar Muadzam Shah Pahang.	2.98	22-03-2012
134.	GCH RETAIL (MALAYSIA) SDN. BHD. Giant Hypermarket Banting Lot 555, Persiaran Kota Seri Langat, Kota Seri Langat 42700 Banting, Selangor. Tel : 03-3818 4748 / 3818 4744 Faks : 03-3181 4749	Giant Hypermarket Banting Sebahagian Lot 555 seluas 8.15 ekar Mukim Tanjung Dua Belas Daerah Kuala Langat Selangor.	3.40	22-03-2012
135.	GCH RETAIL (MALAYSIA) SDN. BHD. Mezzanine Floor, Giant Hypermarket Shah Alam Stadium Lot 2, Persiaran Sukan, Seksyen 13 40100 Shah Alam, Selangor. Tel : 03-5544 8888 Faks : 03-5511 9692	Kompleks Beli- belah Giant Cheras Hypermarket No. Lot 33924 Mukim Pekan Cheras Daerah Hulu Langat 43200 Selangor.	3.40	23-03-2012
136.	AMTRUSTEE BERHAD Level 10, Pavilion Kuala Lumpur 168 Jalan Bukit Bintang 55100 Kuala Lumpur. Tel : 03-2118 8888 Faks : 03-2118 8911	Pavillion Kuala Lumpur Complex Lot 174, 185, 187, 188, 281 (New Lot : Lot 332) dan 260 Jalan Bukit Bintang/ Jalan Raja Chulan Seksyen 67, Kuala Lumpur Wilayah Persekutuan.	22.10	17-04-2012
137.	EC ALAMJAYA SDN. BHD. No. 2, Jalan 1/128 Taman Gembira, Off Jalan Klang Lama 58200 Kuala Lumpur. Tel : 03-7983 7399 / 7981 3055 Faks : 03-7981 8813	Kota Bharu Trade Centre (KBTC) No. Lot PT 255 Seksyen 7, Jajahan Kota Bharu 15000 Bandar Kota Bharu Kelantan	5.84	20-04-2012

Bil No	Pemegang Lesen & Alamat Perhubungan Licensee & Contact Address	Kawasan Bekalan Area of Supply	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Tarikh Lesen Dikeluarkan Date of Licence Issued
138.	UNIVERSITI TELEKOM SDN. BHD. Universiti Multimedia Persiaran Multimedia 63100 Cyberjaya, Selangor. Tel : 03-8312 5000 Faks : 03-8312 5022	Kawasan Universiti Multimedia Cyberjaya Lot PT 12197 Mukim Dengkil Daerah Sepang 63100 Selangor.	5.10	26-04-2012
139.	UNIVERSITI TELEKOM SDN. BHD. Universiti Multimedia Jalan Ayer Keroh Lama 75450 Melaka. Tel : 06-252 3500 Faks : 06-231 7989	Kawasan Universiti Multimedia Melaka Lot PT452, PT453, Lot 56, 57, 58 dan 60 Bukit Beruang Melaka Tengah 75450 Melaka.	8.00	26-04-2012
140.	MALAYSIAN LANDED PROPERTY SDN. BHD. Jones Lang Wootton, Lower Ground, Menara Perak No. 24, Jalan Perak, 50450 Kuala Lumpur. Tel : 03-2380 5032 Faks : 03-2380 5029	Lot 1370, Jalan Perak Seksyen 57 Kuala Lumpur.	3.00	10-05-2012
141.	ERA BARU SDN. BHD. d/a Era Baru Services Sdn. Bhd. Property Management Division, Terminal 2, Level 4 Lot 7968-C Jalan Era Square 4, Era Square, 70200 Seremban, Negeri Sembilan. Tel : 06-768 7680 Faks : 06-768 7686	Lot 734 Bandar Seremban 70200 Negeri Sembilan	5.95	22-05-2012
142.	MAMMOTH EMPIRE ESTATE SDN. BHD. A-12-02, Empire Office Empire Subang, Jalan SS16/1 47500 Selangor. Tel : 03-5638 9888 Faks : 03-5631 9888	Lot PT47371 Mukim Sungai Buloh Daerah Petaling Selangor.	8.48	25-06-2012
143.	GCH RETAIL (MALAYSIA) SDN. BHD. Giant Hypermarket Shah Alam Stadium Mezzanine Floor, Lot 2, Persiaran Sukan, Seksyen 13, 40100 Shah Alam, Selangor. Tel : 03-5544 8888 Faks : 03-5511 9692	Giant Subang Jaya Hypermarket No. Lot 672 dan 673 Persiaran Subang Permai Taman Industri Subang Ulu Subang Jaya 1 47300 Mukim Damansara Daerah Petaling, Selangor.	4.25	02-07-2012
144.	GCH RETAIL (MALAYSIA) SDN. BHD. Mezzanine Floor, Giant Hypermarket Shah Alam Stadium Lot 2, Persiaran Sukan, Seksyen 13 40100 Shah Alam, Selangor. Tel : 03-5544 8888 Faks : 03-5511 9692	Giant Kuala Pilah Supermarket No. Lot 3640 Ampang Tinggi 72000 Daerah Kuala Pilah Negeri Sembilan.	2.04	02-07-2012
145.	GCH RETAIL (MALAYSIA) SDN. BHD. Giant Hypermarket Shah Alam Stadium Mezzanine Floor, Lot 2, Persiaran Sukan, Seksyen 13, 40100 Shah Alam, Selangor. Tel : 03-5544 8888 Faks : 03-5511 9692	Giant Setapak Hypermarket No. Lot 23341, 23344 (PT8750) dan Sebahagian Lot 23343 Off Jalan Genting Kelang Taman Danau Kota Mukim Setapak 53000 Wilayah Persekutuan Kuala Lumpur.	2.72	02-07-2012
146.	MUST EHSAN DEVELOPMENT SDN. BHD. No. 46G, Jalan PJU 5/22, Encorp Strand Pusat Perdagangan Kota Damansara Kota Damansara PJU 5 47810 Petaling Jaya, Selangor. Tel : 03-6286 7777 Faks : 03-6286 7676	No. Lot PT 10562 Pusat Bandar 1 Kota Damansara Mukim Sungai Buloh Daerah Petaling Selangor.	8.55	02-07-2012
147.	ESQUIRE COLLECTION SDN. BHD. Suite 6.04, Penthouse Wisma Academy, 4A Jalan 19/1 46300 Petaling Jaya, Selangor. Tel : 03-7958 5928 Faks : 03-7954 2098	Bangunan PanGlobal No. Lot 53, Seksyen 20 Mukim Bandar Petaling Jaya Daerah Petaling Selangor.	1.00	05-07-2012

Bil No	Pemegang Lesen & Alamat Perhubungan Licensee & Contact Address	Kawasan Bekalan Area of Supply	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Tarikh Lesen Dikeluarkan Date of Licence Issued
148.	PRESTIGE SCALE SDN. BHD. Unit 9-3, Level 9, Wisma UOA Damansara II No. 6, Changkat Semantan Damansara Heights, 50490 Kuala Lumpur. Tel : 03-2094 8778 Faks : 03-2094 8779	Menara Prestige Lot 844 dan PT 845 Seksyen 57 Jalan P. Ramlee/ Jalan Pinang 50450 Kuala Lumpur.	8.50	05-07-2012
149.	BADAN PENGURUSAN BERSAMA QUEENSBAY MALL 1F-78, Queensbay Mall 100, Persiaran Bayan Indah 11900 Bayan Lepas Pulau Pinang. Tel : 04-646 8888 Faks : 04-646 4848	Lot 11736 & Lot 11737 (PT. 5494) Tanah Tebusguna Kawasan Persisiran Pantai Sungai Nibong Mukim 12 Daerah Barat Daya 11900 Pulau Pinang.	20.00	05-07-2012
150.	MCT GREENTECHNOLOGY SDN. BHD. A-03-02 (3rd Flr), Skypark @ One City Jalan USJ 25/1, 47650 Subang Jaya Selangor. Tel : 03-5115 9988 Faks : 03-5115 9995	One City Skypark No. Lot 54445 & 77027 Mukim Damansara Daerah Petaling Jaya Selangor.	10.16	16-07-2012
151.	PASTI ANGGUN SDN. BHD. 6th Floor, Asmah Tower Jalan Cerdas, Taman Connaught 56100 Kuala Lumpur. Tel : 03-9100 2882 Faks : 03-9100 1881	Ikon Mall No. Lot 39891 Mukim Petaling Daerah Kuala Lumpur Wilayah Persekutuan Kuala Lumpur.	3.44	16-07-2012
152.	WIZE PLATINUM SDN. BHD. 2A-2, Jalan Puteri 1/4 Bandar Puteri 47100 Puchong, Selangor. Tel : 03-8061 3380 Faks : 03-8061 3315	South City Plaza Lot PT 520 Serdang Perdana Seri Kembangan, Mukim Petaling Daerah Petaling, Selangor.	3.00	27-07-2012
153.	GENTING SIMON SDN. BHD. Johor Premium Outlets Jalan Premium Outlets, Indahpura 81000 Kulajijaya, Johor. Tel : 07-661 8888 Faks : 07-661 8810	Lot PTD 104549 Zone 23, Jalan Premium Outlets Indahpura Kulajijaya 81000 Johor.	4.08	13-08-2012
154.	GCH RETAIL (MALAYSIA) SDN. BHD. Complex Management, Giant Hypermarket Rawang No. 1, Jalan Bintang, Pusat Bandar Rawang 48000 Rawang, Selangor. Tel : 03-6092 0161 Faks : 03-6092 0161	Giant Hypermarket Rawang Lot PT 65 & PT 66 Mukim Rawang Daerah Gombak 48000 Selangor.	1.28	05-9-2012
155.	ATRIA DAMANSARA SDN. BHD. 9th Floor, Plaza OSK Jalan Ampang, 50450 Kuala Lumpur. Tel : 03-2161 3322 Faks : 03-2175 3216	No. Lot PT 9089, PT 9090, PT 10168, PT10197, PT 10198 Mukim Sungai Buloh Daerah Petaling 47400 Selangor.	11.50	27-09-2012
156.	PETRONAS GAS BERHAD Level 49-51, Tower 1, Petronas Twin Towers Kuala Lumpur City Centre, 50088 Kuala Lumpur. Tel : 03-2051 5000 Faks : 03-2051 5885	Sebahagian Kawasan Laut Mukim Tangga Batu Daerah Melaka Tengah Melaka.	5.95	05-10-2012
157.	AMTRUSTEE BERHAD CapitaMalls Malaysia Trust Level 3, Jalan Putra Square 6 Putra Square, 25200 Kuantan Pahang. Tel : 09-565 8688 Faks : 09-565 8699	East Coast Mall Putra Square Lot 423(PN 5596) Mukim Kuantan 25000 Kuantan Pahang.	10.00	05-10-2012
158.	MINES WATERFRONT BUSINESS PARK SDN. BHD. Level 1, Block B, Mines Waterfront Business Park No. 3, Jalan Tasik, The Mines Resort City 43300 Seri Kembangan, Selangor. Tel : 03-8943 8811 Faks : 03-8943 1837	Mines Waterfront Business Centre Lot PT 16715 43300 Daerah Petaling Selangor.	4.80	11-12-2012

Bil No	Pemegang Lesen & Alamat Perhubungan Licensee & Contact Address	Kawasan Bekalan Area of Supply	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Tarikh Lesen Dikeluarkan Date of Licence Issued
159.	MINES 2 SDN. BHD. Retail 6, Ground Floor, Block D MINES Waterfront Business Park, No. 3, Jalan Tasik MINES Resort City, 43300 Seri Kembangan, Selangor. Tel : 03-8943 8811 Faks : 03-8943 1837	Mines 2 Mall Lot 1584, Mukim Pekan Baru Sungai Besi 43300 Daerah Petaling Selangor.	3.20	12-12-2012
160.	NUSAJAYA LIFESTYLE SDN. BHD. 16-1, Mercu UEM Jalan Stesen Sentral 5 Kuala Lumpur Sentral 50470 Kuala Lumpur. Tel : 03-2727 6000 Faks : 03-2727 2000	Medini Lifestyle Mall No. Lot PTD 170657 dan PTD 170658 Mukim Pulai 79200 Daerah Johor Baharu Johor.	3.40	21-12-2012
161.	GCH RETAIL (MALAYSIA) SDN. BHD. Giant Hypermarket Cheng Melaka Lot 2-13, Jalan TTC 9, Taman Technology Cheng 75250 Melaka. Tel : 06-336 5519 Faks : 06-336 5517	Giant Hypermarket Cheng Melaka Lot 8519, Mukim Cheng Daerah Melaka Tengah Melaka.	2.10	27-12-2012
162.	JAYA ONE MANAGEMENT SDN. BHD. No. 35-LG2, Block J, Jaya One No. 72A Jalan Universiti 46200 Petaling Jaya, Selangor. Tel : 03-7957 4933 Faks : 03-7957 4223	Jaya One Mall No. Lot PT12 Mukim Bandar Petaling Jaya Daerah Petaling 46200 Selangor.	8.50	04-01-2013
163.	AEON CO. (M) BHD. 3rd. Floor, Jusco Taman Maluri Shopping Centre Jalan Jejaka, Taman Maluri Cheras 55100 Kuala Lumpur. Tel : 03-9207 2005 Faks : 03-9207 2006 / 9207	Kompleks Beli-Belah AEON No. Lot PT 15074 Mukim Lumut Daerah Manjung Perak.	12.80	10-01-2013
164.	AEON BIG (M) SDN. BHD. 3, Jalan SS 16/1 47500 Subang Jaya Selangor. Tel : 03-8022 3600 Faks : 03-5631 3373	AEON Big Cheras Part of Lot 528 Seksyen 90, Bandar Kuala Lumpur 55100 Wilayah Persekutuan Kuala Lumpur	2.00	10-01-2013
165.	AEON BIG (M) SDN. BHD. 3, Jalan SS 16/1 47500 Subang Jaya Selangor. Tel : 03-8022 3600 Faks : 03-5631 3373	AEON Big Kepong No. Lot 63579, Mukim Batu Daerah Kuala Lumpur Wilayah Persekutuan Kuala Lumpur.	3.40	10-01-2013
166.	AEON BIG (M) SDN. BHD. 3, Jalan SS 16/1 47500 Subang Jaya Selangor. Tel : 03-8022 3600 Faks : 03-5631 3373	AEON Big Ampang No. Lot 613, 47638 dan 47636 Mukim Bandar Ampang Daerah Hulu Langat 68000 Selangor.	4.08	10-01-2013
167.	AEON BIG (M) SDN. BHD. 3, Jalan SS 16/1 47500 Subang Jaya Selangor. Tel : 03-8022 3600 Faks : 03-5631 3373	AEON Big Subang Jaya Lot PT1, Bandar Subang Jaya Daerah Petaling 47500 Selangor.	4.40	10-01-2013
168.	AEON BIG (M) SDN. BHD. 3, Jalan SS 16/1 47500 Subang Jaya Selangor. Tel : 03-8022 3600 Faks : 03-5631 3373	AEON Big Wangsa Maju Lot 28059 Mukim Setapak 53300 Wilayah Persekutuan Kuala Lumpur.	3.60	10-01-2013
169.	AEON BIG (M) SDN. BHD. 3, Jalan SS 16/1 47500 Subang Jaya Selangor. Tel : 03-8022 3600 Faks : 03-5631 3373	AEON Big Midvalley Part Of Lot 80, Seksyen 95A Bandar Kuala Lumpur 58000 Wilayah Persekutuan Kuala Lumpur	2.40	10-01-2013

Bil No	Pemegang Lesen & Alamat Perhubungan Licensee & Contact Address	Kawasan Bekalan Area of Supply	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Tarikh Lesen Dikeluarkan Date of Licence Issued
170.	AEON BIG (M) SDN. BHD. 3, Jalan SS 16/1 47500 Subang Jaya Selangor. Tel : 03-8022 3600 Faks : 03-5631 3373	AEON Big Batu Pahat Lot PTD 39842 dan PTD 39849 Mukim Simpang Kanan 83000 Johor	3.60	14-01-2013
171.	AEON BIG (M) SDN. BHD. 3, Jalan SS 16/1 47500 Subang Jaya Selangor. Tel : 03-8022 3600 Faks : 03-5631 3373	AEON Big Rahang Lot PT 8541, Bandar Seremban Seremban 70300 Negeri Sembilan.	2.40	14-01-2013
172.	AEON BIG (M) SDN. BHD. 3, Jalan SS 16/1 47500 Subang Jaya Selangor. Tel : 03-8022 3600 Faks : 03-5631 3373	AEON Big Johor Bahru Lot 138 (PTD 68951) Batu 7.5, Jalan Kota Tinggi Mukim Tebrau 81100 Pandan, Johor Bahru	2.80	14-01-2013
173.	CAPITOL PROSPER SDN. BHD. 21, Jalan SP 2/1 Taman Serdang Perdana, Seksyen 2 43300 Seri Kembangan, Selangor. Tel : 03-8941 3660 Faks : 03-8941 3661	Kompleks Beli-Belah Capitol Prosper No. Lot 17501 dan 17502 Seksyen 2, Pekan Bukit Kepayang Daerah Seremban, 40480 Negeri Sembilan.	8.50	16-01-2013
174.	SISTEM DUTA SDN. BHD. No. 88, Jalan IM 14/1 Kaw. Perindustrian Indera Mahkota 25200 Kuantan Pahang. Tel : 09-508 2088 / 508 1207 Faks : 09-508 1506	Mentakab Star Mall Lot 234 dan 237 Mukim Mentakab Daerah Temerloh 28000 Pahang.	5.50	30-01-2013
175.	NIHON PROPERTIES SDN. BHD. No. 1, Jalan Pasar Pudu 55100 Kuala Lumpur. Tel : 03-9222 2266 Faks : 03-9222 3266	Lot 213, 214, 216, 217, 218, 219, 220, 221, 222 dan 223, Seksyen 65 Jalan Pasar Bahru Bandar Kuala Lumpur.	2.50	30-01-2013
176.	GCH RETAIL (MALAYSIA) SDN. BHD. Giant Hypermarket Shah Alam Stadium Mezzanine Floor, Lot 2, Persiaran Sukan, Seksyen 13, 40100 Shah Alam, Selangor. Tel : 03-5511 8530 Faks : 03-5511 9681 / 5511 8527	Giant Superstore Gong Badak Lot 22051, Mukim Kuala Nerus Daerah Kuala Terengganu Terengganu	3.00	31-01-2013
177.	KHOR JOO SAIK SDN. BHD. Suite 6.03, Level 6 No. 2, Jalan Binjai 50450 Kuala Lumpur. Tel : 03-2181 3922 / 7983 0277 Faks : 03-7981 9912	Menara Binjai No. Lot 390 Seksyen 63, Kuala Lumpur 50450 Wilayah Persekutuan Kuala Lumpur.	9.30	04-03-2013
178.	OSK TRUSTEES BERHAD 6th Floor, Plaza OSK Jalan Ampang 50450 Kuala Lumpur. Tel : 03-9207 7777 Faks : 03-2175 3288	Lot 5497, 5498 dan 5499 Daerah Seberang Perai Tengah 13700 Pulau Pinang	10.50	13-03-2013
179.	PACIFIC PLACE ASSETS SDN. BHD. No. 9, Jalan USJ Sentral 1 USJ Sentral, Persiaran Subang 1 47600 Subang Jaya Selangor. Tel : 03-8023 2767 Faks : 03-8023 2170	Kawasan Pembangunan Komersial Pacific Place Lot 59215 dan 59216 Mukim Damansara Daerah Petaling Selangor.	27.10	15-03-2013

Bil No	Pemegang Lesen & Alamat Perhubungan Licensee & Contact Address	Kawasan Bekalan Area of Supply	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Tarikh Lesen Dikeluarkan Date of Licence Issued
180.	PLAZA 33 SDN. BHD. Jaya33, Courtyard@4 No. 3, Jalan Semangat, Section 13 46100 Petaling Jaya, Selangor. Tel : 03-7954 9888 Faks : 03-7960 8060	Plaza 33 Lot 76, Mukim Seksyen 13 Daerah Petaling Jaya Selangor.	6.36	08-04-2013
181.	AEON BIG (M) SDN. BHD. 3, Jalan SS16/1 47500 Subang Jaya Selangor. Tel : 03-8022 3600 Faks : 03-5631 3373	AEON Big Bukit Rimau Lot No. 90556 Mukim Klang Daerah Klang 40460 Selangor.	3.40	11-04-2013
182.	AEON BIG (M) SDN. BHD. 3, Jalan SS16/1 47500 Subang Jaya Selangor. Tel : 03-8022 3600 Faks : 03-5631 3373	AEON Big Shah Alam Lot PT 322 Mukim Seksyen 23 Daerah Shah Alam 40460 Selangor.	2.55	11-04-2013
183.	AEON BIG (M) SDN. BHD. 3, Jalan SS16/1 47500 Subang Jaya Selangor. Tel : 03-8022 3600 Faks : 03-5631 3373	AEON Big Tropicana Lot No. 45821 Mukim Bandar Petaling Jaya Daerah Petaling 47400 Selangor.	2.72	11-04-2013
184.	PERTUBUHAN KESELAMATAN SOSIAL (PERKESO) Kementerian Sumber Manusia Menara PERKESO, 281, Jalan Ampang 50538 Kuala Lumpur. Tel : 03-4264 5000 Faks : 03-4256 7713	Wisma Perkeso No. 155, Jalan Tun Razak 50400 Wilayah Persekutuan Kuala Lumpur.	2.55	08-05-2013
185.	LAMBANG EHSAN SDN. BHD. No. 2, Jalan 12/91A Taman Shamelin Perkasa Batu 3 1/2 Jalan Cheras 56100 Kuala Lumpur. Tel : 03-9285 4990 Faks : 03-9284 1236	1 Shamelin Mall Lot 11637 Mukim Ampang 56000 Wilayah Persekutuan Kuala Lumpur.	12.80	08-05-2013
186.	ELSOFT RESEARCH BERHAD Plot 85B, Lintang Bayan Lepas 9 Bayan Lepas Industrial Park Phase 4 11900 Penang. Tel : 04-646 8122 Faks : 04-643 3918	Lot 14841, Mukim 12 Daerah Barat Daya 11900 Pulau Pinang.	1.25	13-06-2013
187.	AEON BIG (M) SDN. BHD. 3, Jalan SS16/1 47500 Subang Jaya Selangor. Tel : 03-8022 3600 Faks : 03-5631 3373	AEON Big Puchong Lot 4029 Mukim Pekan Puchong Perdana Daerah Petaling 47100 Selangor.	3.40	09-07-2013
188.	MAJU PUNCAKBUMI SDN. BHD. No. 19, Jalan USJ Sentral 3 USJ Sentral, Persiaran Subang 47600 Subang Jaya Selangor. Tel : 03-8023 3366 Faks : 03-8023 7128	2 Blok Hostel Apartment Sebahagian PT 41469 (Lot 47702) Persiaran Bestari Cyberjaya Mukim Dengkil 43900 Sepang, Selangor.	2.25	16-07-2013
189.	MYDIN MOHAMED HOLDINGS BHD. Mydin HQ Lot 675 & 676, Persiaran Subang Permai, Off Jalan SS13/1K 47500 Subang Jaya, Selangor. Tel : 03-8073 6000 Faks : 03-8073 6388	Mydin Wholesale Cash & Carry Lot H/S(D) KA 70076, PT 3676 Mukim Raya dan Teja 36100 Daerah Kinta, Perak.	3.00	23-07-2013
190.	CAPITAL ASSETS SDN. BHD. No. 1A, Lorong Jernih 7 14000 Bukit Mertajam Pulau Pinang. Tel : 04-6433 622 Faks : 04-6448 652	One Precint Lot 17335, Mukim 12 Daerah Barat Daya 11950 Pulau Pinang	8.50	13-09-2013

Bil No	Pemegang Lesen & Alamat Perhubungan Licensee & Contact Address	Kawasan Bekalan Area of Supply	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Tarikh Lesen Dikeluarkan Date of Licence Issued
191.	CITYMADE CORPORATION (M) SDN. BHD. 180-3-5 Wisma Mahkota Jalan Mahkota, Taman Maluri 55100 Kuala Lumpur. Tel : 03-9283 3009 Faks : 03-9284 4009	Bangunan Citymade Lot PT127, Seksyen 62 Bandar Kuala Lumpur 55100 Wilayah Persekutuan Kuala Lumpur.	2.04	20-09-2013
192.	SEGI ASTANA SDN. BHD. Gateway@KLIA2 Management Office, Level 1 Terminal KLIA2, KL International Airport Jalan Klia 2/1 64000 KLIA, Sepang Selangor. Tel : 03-4065 0005 Faks : 03-4065 0008	Kompleks Bersepadu Gateways@KLIA2 Lapangan Terbang Kuala Lumpur International Airport (KLIA2) di atas sebahagian Lot 1 (PA 76588), Mukim Dengkil, Daerah Sepang 64000 Selangor.	13.84	25-09-2013
193.	MINLON LAND SDN. BHD. #06-01, Wisma Minlon Bt. 12, Lebuhraya Sungai Besi 43300 Seri Kembangan, Selangor. Tel : 03-8947 6167 Faks : 03-8947 6100	No. Lot 28062 Mukim Kajang Daerah Hulu Langat 43300 Selangor.	4.65	02-10-2013
194.	DANAHARTA HARTANAH SDN. BHD. Level 9, Bangunan Setia 1 15 Lorong Dungun Bukit Damansara 50490 Kuala Lumpur. Tel : 03-2096 5111 Faks : 03-2096 5118	Menara 238, No. Lot 405 Seksyen 87A Mukim Bandar Kuala Lumpur Daerah Kuala Lumpur 50490 Wilayah Persekutuan Kuala Lumpur.	3.67	14-10-2013
195.	MINES INTERNATIONAL EXHIBITION CENTRE Ground Floor, Mines International Exhibition & Convention Centre Jalan Dulang, MINES Resort City 43300 Seri Kembangan Selangor. Tel : 03-8945 2055 Faks : 03-8945 2155	Kompleks Pameran Mines Exhibition Centre Lot PT 16721, Mukim Petaling Daerah Petaling 43300 Selangor.	11.05	24-10-2013
196.	ISKANDAR MALAYSIA STUDIOS SDN. BHD. Persiaran Layar Perak 79250 Nusajaya Johor. Tel : 07-560 1888 Faks : 07-560 1889	No. Lot PTD 182864 Mukim Pulau Daerah Johor Bharu Johor.	15.75	30-10-2013
197.	AEON BIG (M) SDN. BHD. 3, Jalan SS 16/1 47500 Subang Jaya Selangor. Tel : 03-8022 3600 Faks : 03-5631 3373	Pasaraya AEON Big Bukit Mertajam No. Lot PT 868, Mukim 13 Daerah Seberang Perai Tengah Pulau Pinang.	2.37	01-11-2013
198.	PREFERRED ACCOMPLISHMENT SDN. BHD. Suite 01-01, Menara IJM Land 1, Lebu Tunku Kudin 3 11700 Penang. Tel : 04-296 1222 Faks : 04-296 1223	No. Lot 776, Mukim Sek. 4 Bandar Jelutong Daerah D.T.L. 11700 Pulau Pinang.	6.80	15-11-2013
199.	DK-MY PROPERTIES SDN. BHD. No. 4, Jalan PPU 3 Taman Perindustrian Puchong Utama 47100 Puchong Selangor. Tel : 03-8064 6766 Faks : 03-8062 6768	Sebahagian PT 344 Mukim Pekan Penaga Daerah Petaling Selangor.	3.74	15-11-2013
200.	AEON BIG (M) SDN. BHD. 3, Jalan SS 16/1 47500 Subang Jaya Selangor. Tel : 03-8022 3600 Faks : 03-5631 3373	AEON Big Seberang Perai Shopping Mall No. Lot PT 4545, Mukim 01 Daerah Seberang Perai Tengah 13700 Pulau Pinang.	5.36	20-11-2013

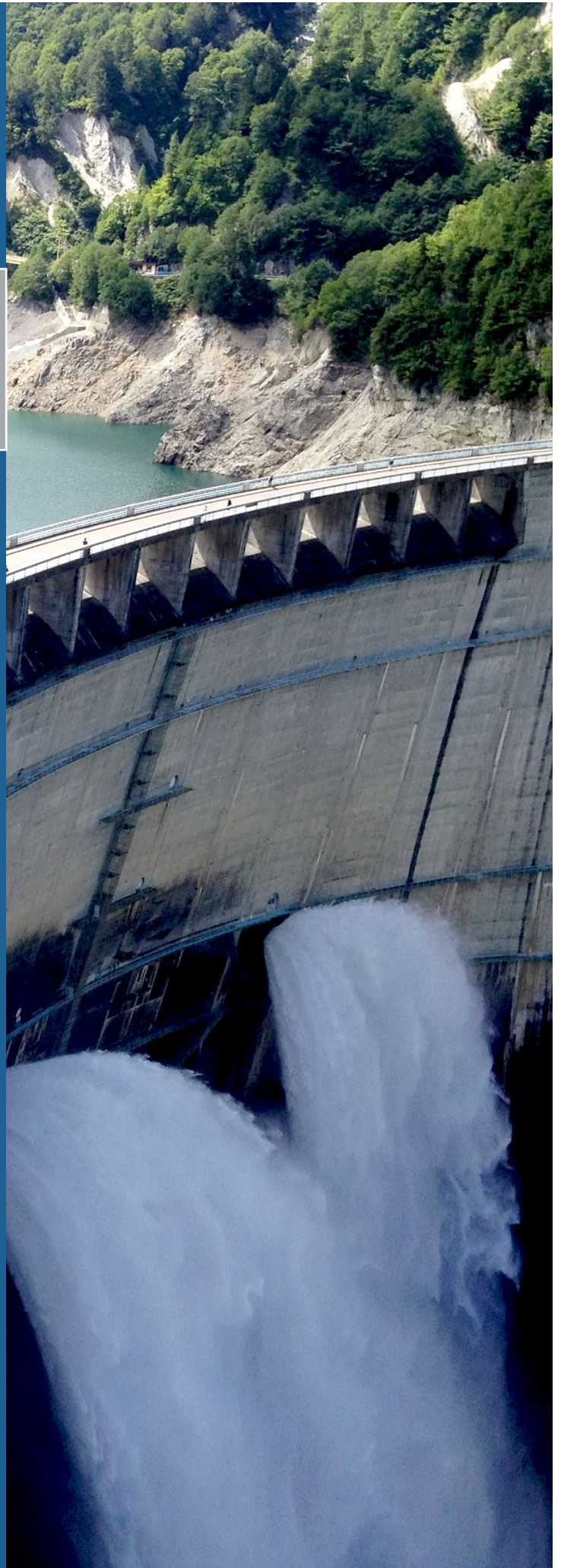
Bil No	Pemegang Lesen & Alamat Perhubungan Licensee & Contact Address	Kawasan Bekalan Area of Supply	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Tarikh Lesen Dikeluarkan Date of Licence Issued
201.	SUNSHINE ELECTRICAL SUPERSTORE SDN. BHD. No. 1-20-1, Suntech@Penang Cybercity Lintang Mayang Pasir 3 11950 Bayan Baru Penang. Tel : 04-643 1111 Faks : 04-643 0500	Sebahagian No. Lot 12767 & Sebahagian No. Lot 20016 Mukim 6, Daerah Utara Pulau Pinang.	3.40	28-11-2013
202.	AEON BIG (M) SDN. BHD. 3, Jalan SS 16/1 47500 Subang Jaya Selangor. Tel : 03-8022 3600 Faks : 03-5631 3373	AEON Big Kota Damansara Lot No. PT 10103 Mukim Pekan Baru Sungai Buloh Daerah Petaling Selangor.	4.04	03-12-2013
203.	AEON BIG (M) SDN. BHD. 3, Jalan SS 16/1 47500 Subang Jaya Selangor. Tel : 03-8022 3600 Faks : 03-5631 3373	AEON Big Klang Lot No. PT 52635 Mukim Kapar Daerah Klang 41400 Selangor.	4.04	30-12-2013
204.	AEON CO. (M) BHD. 3rd. Floor, Jusco Taman Maluri Shopping Centre Jalan Jejaka, Taman Maluri, Cheras 55100 Kuala Lumpur. Tel : 03-9207 2005 Faks : 03-9207 2006 / 9207	AEON Seberang Perai Tengah Lot No. 1379 & 14344 Mukim 15, Daerah Alma Seberang Perai Tengah 14000 Pulau Pinang.	12.16	30-12-2013
205.	AEON CO. (M) BHD. 3rd. Floor, Jusco Taman Maluri Shopping Centre Jalan Jejaka, Taman Maluri, Cheras 55100 Kuala Lumpur. Tel : 03-9207 2005 Faks : 03-9207 2006 / 9207	AEON Kamunting Lot 8576 & 8571 Daerah Larut & Matang 34600 Perak.	13.43	30-12-2013
206.	MANJA MESRA SDN. BHD. 5th Floor, Prima 8 Prima Avenue, Block 3508 Jalan Teknokrat 6 63000 Cyberjaya, Selangor. Tel : 03-8319 1368 Faks : 03-8320 3339	No. Lot 43970 Mukim Dengkil Daerah Sepang 63000 Selangor	1.20	30-12-2013

Maklumat dan Statistik Industri Pembekalan Elektrik

Information and Statistics on Electricity Supply Industry

Maklumat dan Statistik Industri di Sabah Industry Information and Statistics in Sabah

- 100.** Sabah Electricity Sdn. Bhd. (SESB)
- 102.** Penjana-Penjana Kuasa Bebas (IPP)
Independent Power Producers (IPPs)
- 103.** Projek-Projek Janakuasa Tenaga Boleh Baharu (TBB)
Renewable Energy (RE) Power Generation Projects
- 103.** *Co-Generator Utama*
Major Co-Generators
- 104.** Penjanaan Persendirian (Kurang daripada 5 MW)
Self-Generation (Less than 5 MW)
- 105.** Senarai Pengagih Elektrik
List of Electricity Distributors



Sabah Electricity Sdn. Bhd. (SESB)

Jadual 1: Sorotan Prestasi
Table 1: Performance Highlights

Petunjuk • Indicator	2008	2009	2010	2011	2012	2013
Kehendak Maksimum (MW) Maximum Demand (MW)	673	719	780	830	828	874
Jumlah Unit Penjanaan (GWj) ¹ Total Units Generated (GWj) ¹	1,489	1,317	1,178	1,524	1,294	1,357
Jumlah Unit Jualan (GWj) Total Units Sold (GWj)	3,474	3,855	4,127	4,275	4,456	4,670
Hasil Jualan Elektrik (RM Juta) Sales of Electricity (RM Million)	836	975	1,055	1,155	1,350	1,382
Kapasiti Penjanaan Terpasang (MW) ² Installed Generation Capacity (MW) ²	357	489	375	435	417	495
Jumlah Kakitangan Number of Employees	2,272	2,484	2,613	2,613	2,679	2,788
Hasil Jualan Setiap Kakitangan (RM Juta/Kakitangan) Sales of Electricity per Employee (RM Million/Employee)	0.37	0.39	0.40	0.44	0.50	0.50
Unit Jualan Setiap Kakitangan (GWj/Kakitangan) Units Sold per Employee (GWj/Kakitangan)	1.53	1.55	1.58	1.64	1.66	0.50
Kapasiti Penjanaan Setiap Kakitangan (MW/Kakitangan) Installed Capacity per Employee (MW/Employee)	0.16	0.20	0.14	0.17	0.16	0.21
Jumlah Unit Pembelian (GWj) Total Units Purchased (GWj)	2,788	3,235	3,648	3,765	3,843	3,866
Jumlah Unit Eksport (GWj) Total Units Exported (GWj)	-	-	-	-	-	-
Jumlah Unit Import (GWj) Total Units Imported (GWj)	-	-	-	-	-	-

Jadual 2: Kapasiti Penjanaan Terpasang (MW) dan Kebolehdapatan Keseluruhan (%)
Table 2: Installed Generation Capacity (MW) and Overall Availability (%)

Jenis Bahan Api • Fuel Type	2008	2009	2010	2011	2012	2013
Hidro Hydro	74	74	74	70	68	69
Gas Asli Natural Gas	107	162	101	107	105	122
Arang batu Coal	-	-	-	-	-	-
Medium Fuel Oil (MFO)	-	-	-	-	-	-
Diesel	176	253	200	259	245	304
Lain-lain (Bekalan Elektrik Luar Bandar – Diesel & Hidro Mini) Others (Rural Electricity Supply – Diesel & Mini Hydro)	-	-	-	-	-	-
Jumlah • Total	357	489	375	435	417	495
Kebolehdapatan Keseluruhan (%) Overall Availability (%)	73.30	64.90	57.00	57.00	70.75	75.96

Nota • Note:

¹ Jumlah Unit Penjanaan tidak termasuk IPP.

² Data daripada Unit Operasi Pasaran dan merupakan Kapasiti Boleh Harap.

¹ Total Units Generated excluding IPPs.

² Data from Market Operation Unit and based on the Dependable Capacity.

Jadual 3: Campuran Penjanaan ² (GWj)
Table 3: Generation Mix ² (GWh)

Jenis Bahan Api • Fuel Type	2008	2009	2010	2011	2012	2013
Hidro Hydro	489	393	482	754	377	410
Gas Asli Natural Gas	675	530	260	398	589	619
Arang batu Coal	-	-	-	0	0	-
Medium Fuel Oil (MFO)	123	159	173	0	0	-
Diesel	202	235	263	372	328	328
Jumlah • Total	1,489	1,317	1,178	1,524	1,294	1,357

Nota • Note:

² Data daripada Unit Pelesenan

² Data from Licensing Unit

Jadual 4: Jualan Tenaga Elektrik (GWj)
Table 4: Sales of Electricity (GWh)

Sektor • Sector	2008	2009	2010	2011	2012	2013
Domestik Domestic	1,090	1,204	1,295	1,332	1,436	1,530
Komersial Commercial	1,321	1,504	1,602	1,742	1,923	2,018
Industri Industry	1,017	1,099	1,178	1,146	1,038	1,061
Lampu Awam Public Lighting	47	49	52	56	59	60
Perlombongan Mining	-	-	-	-	-	-
Eksport Export	-	-	-	-	-	-
Lain-lain Others	-	-	-	-	-	-
Jumlah • Total ⁵	3,475	3,856	4,127	4,275	4,456	4,670

Nota • Note:

⁵ Jualan Tenaga Elektrik bagi SESB termasuk pembelian tenaga elektrik daripada IPP di Sabah

⁵ Sales of Electricity for SESB includes the electricity purchased from IPPs in Sabah

Jadual 5: Bilangan Pengguna
Table 5: Number of Consumers

Sektor • Sector	2008	2009	2010	2011	2012	2013
Domestik Domestic	332,861	347,640	364,376	384,384	403,387	422,964
Komersial Commercial	62,012	65,551	68,877	72,288	75,375	79,188
Industri Industry	2,799	2,870	2,971	2,865	2,903	2,937
Lampu Awam Public Lighting	3,918	4,117	4,302	4,516	4,820	5,128
Perlombongan Mining	-	-	-	-	-	-
Eksport Export	-	-	-	-	-	-
Jumlah • Total	401,590	420,178	440,526	464,053	486,485	510,217

Jadual 6: Keupayaan Sistem Penghantaran
Table 6: Transmission System Capacity

Talian/Kabel Sistem Penghantaran Transmission System Lines/Cables	2008	2009	2010	2011	2012	2013
500kV (km)	-	-	-	-	-	-
275kV (km)	492	492	492	492	492	493
132kV (km)	1,672	1,674	1,721	1,780	1,772	1,200
66kV (km)	123	123	123	123	123	163
Pencawang Penghantaran • Transmission Substations						
Bilangan • Number	34	36	39	41	42	39
Keupayaan (MVA) • Capacity (MVA)	3,793	3,913	4,517	4,652	4,672	3,657

Jadual 7: Keupayaan Sistem Pengagihan
Table 7: Distribution System Capacity

Talian/Kabel Sistem Penghantaran Transmission System Lines/Cables	2008	2009	2010	2011	2012	2013
Talian Atas (km) • Overhead Lines (km) ⁶	6,431	7,420	7,490	7,761	8,525	8,904
Kabel Bawah Tanah (km) • Underground Cables (km) ⁶	762	1,035	1,418	1,317	1,136	352,056
Pencawang Pengagihan • Distribution Substations						
Bilangan • Number	5,214	5,614	5,815	5,878	6,365	6,619
Keupayaan (MVA) • Capacity (MVA)	4,179	4,235	4,618	4,813	4,813	5,864

Nota • Note:

⁶ Sistem 33kV dan 11kV sahaja • 33kV and 11kV system only

Penjana-Penjana Kuasa Bebas Independent Power Producers

Jadual 8: Kapasiti Penjanaan Yang Dilesenkan, Unit Penjanaan dan Unit Jualan
Table 8: Licensed Installed Capacity, Units Generated and Units Sold

Bil No	Stesen • Station	Jenis Loji Plant Type	Bahan Api Fuel	Kapasiti Terpasang Yang Dilesenkan (MW) Licensed Installed Capacity (MW)	Unit Penjanaan (GWj) Units Generated (GWj)	Unit Jualan (GWj) Units Sold (GWj)
1.	RANHILL POWERTRON II SDN. BHD. Kota Kinabalu, Sabah.	CC	Gas I Distillate	190.00	1,242.29	1,203.14
2.	RANHILL POWERTRON SDN. BHD. Kota Kinabalu, Sabah.	CC	Gas I Distillate	190.00	1,253.41	750.05
3.	ARL TENAGA SDN. BHD. Melawa, Kota Kinabalu, Sabah.	Diesel	Diesel	50.00	93.00	80.32
4.	SERUDONG POWER SDN. BHD. Tawau, Sabah.	Diesel	Diesel	36.00	203.60	164.18
5.	STRATAVEST SDN. BHD. Sandakan, Sabah.	Diesel	Diesel	64.00	172.07	165.27
6.	SEPANGAR BAY CORPORATION SDN. BHD. Kota Kinabalu, Sabah.	CC	Gas Asli Natural Gas, Diesel	100.00	718.04	694.24
7.	KIMANIS POWER SDN. BHD. Papar, Sabah.	CC	Gas Asli Natural Gas	285.0	*	
8.	SPR ENERGY (M) SDN. BHD. Papar, Sabah.	CC	Gas Asli Natural Gas	100.0	*	

Nota • Note:

* Stesen Janakuasa Belum Beroperasi • Power Station Is Not Operating Yet

CC: Kitar padu • Combined cycle

Projek-projek Jana Kuasa Tenaga Boleh Baharu
Renewable Energy (RE) Power Generation Projects

Jadual 9: Kapasiti Berlesen, Unit Penjanaan dan Unit Jualan
Table 9: Licensed Capacity, Units Generated and Units Sold

Bil No	Pemegang Lesen & Lokasi • Licensee & Location	Jenis Loji Plant Type	Bahan Api/ Penggerak Fuel Type/ Prime Mover	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Unit Penjanaan (GWj) Units Generated (GWj)	Unit Jualan (MWj) Units Sold (MWh)
1.	TSH BIO ENERGY SDN. BHD. Tawau, Sabah.	Turbin Stim Steam Turbine	Sisa Sawit Palm Waste	14.0	85.58	77.93
2.	SEGUNTOR BIOENERGY SDN. BHD. Sandakan, Sabah.	Turbin Stim Steam Turbine	Tandan Sawit Kosong Empty Fruit Bunch	13.5	78.76	67.16
3.	KINA BIOPOWER SDN. BHD. Sandakan, Sabah.	Turbin Stim Steam Turbine	Tandan Sawit Kosong Empty Fruit Bunch	11.5	75.91	63.02
4.	SYARIKAT ESAJADI POWER SDN. BHD. Sg. Pangpuyan, Kota Marudu, Sabah.	Hidro Mini Mini Hydro	Air Water	4.5	9.79	9.79
5.	SYARIKAT ESAJADI POWER SDN. BHD. Sungai Kadamaian, Kota Belud, Sabah.	Hidro Mini Mini Hydro	Air Water	2.0	9.82	9.82
6.	TECK GUAN	Biojisim Biomass	Tandan Sawit Kosong Empty Fruit Bunch	3.0	n/a	n/a
7.	CASH HORSE (M) SDN. BHD. Sandakan, Sabah.	Biojisim Biomass	Turbin Stim Steam Turbine	12.0		*

Nota • Note:

* Stesen Janakuasa Belum Beroperasi • Power Station Is Not Operating Yet
n/a – Tiada maklumat • Not available

Co-Generator Utama
Major Co-Generators

Jadual 10: Kapasiti Berlesen dan Unit Penjanaan (Lesen Awam)
Table 10: Licensed Capacity and Units Generated (Public Licence)

Bil No	Pemegang Lesen & Lokasi • Licensee & Location	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Bahan Api Fuel	Unit Penjanaan (GWj) Unit Generated (GWj)
1.	BAHAGAYA SDN. BHD. Merotai, Tawau, Sabah.	3.00	Tandan Sawit Kosong Empty Fruit Bunch	18.06
2.	BIO-FUEL ASIA SDN. BHD. Kunak, Lahad Datu, Sabah.	10.00	Habuk Kayu Wood Waste	15.12
3.	EVERGREEN INTERMERGE SDN. BHD. Tawau, Sabah.	6.00	Tandan Sawit Kosong Empty Fruit Bunch	20.94
4.	SEO ENERGY SDN. BHD. Karamunting, Sandakan, Sabah.	1.20	Tandan Sawit Kosong Empty Fruit Bunch	0.01
5.	PETRONAS METHANOL (LABUAN) SDN. BHD. Labuan, Sabah.	41.80	Gas Asli Natural Gas	n/a
6.	PROFOUND HERITAGE SDN. BHD. Kota Kinabalu, Sabah.	38.00	Diesel Diesel	66.23
7.	IJM BIOFUEL SDN. BHD. Sandakan, Sabah.	3.60	Tandan Sawit Kosong Empty Fruit Bunch	n/a
8.	IOI BIO-ENERGY SDN. BHD. Sandakan, Sabah.	15.00	Biojisim Biomass	*

Nota • Note:

* Stesen Janakuasa Belum Beroperasi • Power Station Is Not Operating Yet
n/a – Tiada maklumat • Not available

Jadual 11: Kapasiti Berlesen dan Unit Penjanaaan (Lesen Persendirian)
Table 11: Licensed Capacity and Units Generated (Private Licence)

Bil No	Pemegang Lesen & Lokasi • Licensee & Location	Kapasiti Berlesen (MW) Licensed Capacity(MW)	Bahan Api Fuel	Unit Penjanaaan(MWj) Unit Generated (MWh)
1.	PETRONAS CHEMICALS FERTILIZER SABAH SDN. BHD. Sipitang, Sabah.	65.00	Gas Asli Natural Gas	*
2.	FELDA PALM INDUSTRIES SDN. BHD. Lahad Datu, Sabah.	7.50	Tandan Sawit Kosong Empty Fruit Bunch	16,870.84
3.	PALM ENERGY SDN. BHD. Lahad Datu, Sabah.	6.50	Bahan Buangan Pertanian Agricultural Waste	21.00
4.	SABAH FOREST INDUSTRIES SDN. BHD. Sipitang, Sabah.	79.50	Sisa Kayu / Diesel Wood Waste / Diesel	289,667.85

Penjanaaan Persendirian (Kurang Daripada 5 MW)
Self Generation (Less Than 5 MW)

Jadual 12: Kapasiti Berlesen dan Unit Penjanaaan
Table 12: Licensed Capacity and Units Generated

Jenis Bahan Api Fuel Type	Tahun • Year	2008	2009	2010	2011	2012	2013
		Bilangan Lesen • Number of Licences	881	955	969	1,002	971
Gas Asli Natural Gas	Kapasiti Berlesen (MW) • Licensed Capacity (MW)	3.70	5.70	5.70	5.70	-	2.0
	Unit Penjanaaan (MWj) • Units Generated (GWh)	n/a	1.27	1.43	2.96	-	2.92
Diesel	Kapasiti Berlesen (MW) • Licensed Capacity (MW)	523	509	512	499	526	497.19
	Unit Penjanaaan (MWj) • Units Generated (GWh)	n/a	111	99	68	67	77.92
Sisa Sawit Palm Oil Waste	Kapasiti Berlesen (MW) • Licensed Capacity (MW)	108	119	115	122	123	145.61
	Unit Penjanaaan (MWj) • Units Generated (GWh)	n/a	208	222	244	261	226.30
Fotovolta Suria Solar Photovoltaic	Kapasiti Berlesen (MW) • Licensed Capacity (MW)	n/a	n/a	n/a	n/a	1.41	1.60
	Unit Penjanaaan (MWj) • Units Generated (GWh)	n/a	n/a	n/a	n/a	n/a	n/a
Lain-lain Others	Kapasiti Berlesen (MW) • Licensed Capacity (MW)	3.66	1.41	7.13	7.13	9.78	4.33
	Unit Penjanaaan (MWj) • Units Generated (GWh)	0.00	135.08	7,085.39	9,260.69	n/a	5.86
Jumlah Total	Kapasiti Berlesen (MW) • Licensed Capacity (MW)	638.11	635.63	640.50	634.21	659.86	650.72
	Unit Penjanaaan (MWj) • Units Generated (GWh)	0.00	321.36	329.50	324.83	327.99	313.00

Nota • Note:

Lain-lain adalah termasuk hidro, jenis-jenis lain biojisim (hampas padi, hampas tebu, habuk kayu, cip kayu) dan biogas
 Others is inclusive of hydro, other biomass (paddy husk, bagasse, wood dust, wood chip) and biogas

n/a – Tiada maklumat • Not available

Senarai Pengagih Elektrik
List of Electricity Distributors

Jadual 13: Senarai Pengagih Elektrik
Table 13: List of Electricity Distributors

Bil No	Pemegang Lesen & Alamat Perhubungan Licensee & Contact Address	Kawasan Bekalan Area of Supply	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Tarikh Lesen Dikeluarkan Date of Licence Issued
1.	C3 POWER SDN. BHD. 2nd. Floor, U0271, Block F, Jati Commercial Centre P.O. Box 80737, 87017 F.T. Labuan. Tel : 087-411 175 Faks : 087-419 731	Temporary Settlement in some areas in Wilayah Persekutuan Labuan Daerah Kota Kinabalu and Sandakan, Sabah.	5.85	26-08-2010
2.	K.K.I.P. POWER SDN. BHD. Lot A7, Salut Commercial Centre Kota Kinabalu Industrial Park, Jalan Politeknik 88460 Kota Kinabalu, Sabah. Tel : 088-497 801 / 497 802 Faks : 088-498 177	Kota Kinabalu Industrial Park (KKIP) Sabah.	210.00	15-06-1998
3.	PROFOUND HERITAGE SDN. BHD. 1st Floor, Lorong Grace Square Jalan Pantai Sembulan, 88100 Kota Kinabalu, Sabah. Tel : 088-318 801 / 318 802 Faks : 088-233 362	Sutera Harbour Resort Lot 2, LA. 93010260 Kota Kinabalu Sabah.	38.00 *	01-10-2006
4.	EVERGREEN INTERMERGE SDN. BHD. Teck Guan Regency, 318 Jalan St Patrick Off Jalan Belunu, Peti Surat 33, 91007 Tawau, Sabah. Tel : 089-758 955 Faks : 089-760 955	Cacao Paramount Sdn. Bhd. Lot CL 105323797, Km 3 Tanjung Batu Laut, Tawau Sabah.	6.00 *	10-10-2006
5.	SEO ENERGY SDN. BHD. KM 8, Jalan Batu Sapi, Karamunting, P.O. Box 2605 90729 Sandakan, Sabah. Tel : 089-611 011 / 611 012 Faks : 089-611 014 / 617 355	Lot No. 077533754 KM 8, Jalan Batu Sapi Karamunting Sabah.	1.20 *	10-10-2006
6.	ASIAN SUPPLY BASE SDN. BHD. Ranca-Ranca Industrial Estate, P.O. Box 80751 87017 Labuan Federal Territory, Sabah. Tel : 087-411 611 / 411 614 Faks : 087-415 477	Asian Supply Base Lot 206291581, Daerah Labuan Wilayah Persekutuan Labuan Sabah.	12.00	13-11-2006
7.	TSH-WILMAR (BF) SDN. BHD. Bangunan TSH, TB9, KM 7 Apas Road, 91000 Tawau, Sabah. Tel : 089-912 020 / 911 056 Faks : 089-911 093	TSH Edible Oils Sdn. Bhd. PL 26166110 & 246290228 Kunak, Lahad Datu Sabah.	10.00 *	29-12-2006
8.	EKSONS BIOMASS ENERGY SDN. BHD. TB 4327, 2nd Floor Fajar Complex Jalan Haji Karim, 91000 Tawau, Sabah. Tel : 089-757 911 / 757 913 Faks : 089-761 022	Rajang Plywood (Sabah) Sdn. Bhd. CLS 105486762, 105486771 dan PT2000100538 Sungai Umas, Umas Mukim Merotai, Tawau 91000 Sabah.	3.00 *	07-03-2007
9.	PETRONAS METHANOL (LABUAN) SDN. BHD. Kawasan Perindustrian Ranca-Ranca P.O. Box No. 80079, 87010 Wilayah Persekutuan Labuan. Tel : 087-411 211 Faks : 087-413 921 / 425 831	Kawasan Perindustrian Ranca-Ranca Labuan 87010 Wilayah Persekutuan Labuan Sabah.	41.80 *	18-07-2007
10.	1BORNEO MANAGEMENT CORPORATION SDN. BHD. G-600A, Ground Floor, 1Borneo Hypermall Jalan Sulaman 88400 Kota Kinabalu, Sabah. Tel : 088-447 744 Faks : 088-447 743	Kompleks Beli-Belah 1 Borneo Hypermall CL 015607057 Mukim Kuala Menggatal Daerah Kota Kinabalu 88450 Sabah.	20.00	08-04-2008

Bil No	Pemegang Lesen & Alamat Perhubungan Licensee & Contact Address	Kawasan Bekalan Area of Supply	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Tarikh Lesen Dikeluarkan Date of Licence Issued
11.	GCH RETAIL (MALAYSIA) SDN. BHD. Giant Superstore Sandakan, (Complex Management Office) Lot 3, Jalan IJM, Bandar Utama, Batu 6, Off Jalan Utara, 90000 Sandakan, Sabah. Tel : 089-214 219 Faks : 089-214 207	Temporary Settlement in some areas in Wilayah Persekutuan Labuan Daerah Kota Kinabalu and Sandakan, Sabah.	1.70	17-11-2008
12.	IJM BIOFUEL SDN. BHD. Wisma IJM Plantations Lot 1, Jalan Bandar Utama, Batu 6, Jalan Utara BQ 3933, Mail Bag No. 8 90009 Sandakan, Sabah. Tel : 089-616 776 Faks : 089-616 775	IJM Edible Oils Sdn. Bhd. IJMP Integrated Downstream Processing Complex Lot NT. 073019299 Mukim Sungai Mowtas Daerah Sandakan, Poskod 90009 Sabah.	3.60 *	18-06-2009
13.	GCH RETAIL (MALAYSIA) SDN. BHD. Giant Complex Tawau CL105466055, KM 5 1/2, Jalan Chong Thien Yun Off Jalan Apas, 91000 Tawau, Sabah. Tel : 089-911 890 Faks : 089-911 891	Giant Hypermarket Lot CL105466055 Jalan Datuk Chong Fuen Yun 91000 Tawau Sabah.	3.00	10-07-2009
14.	MAKAMEWAH SDN. BHD. 9th Floor, 9-3, Suria Sabah Shopping Mall 1, Jalan Tun Fuad Stephens 88000 Kota Kinabalu, Sabah. Tel : 088-238 949 Faks : 088-239 040	Suria Sabah Shopping Mall Lot T.L. 017539810 Mukim Kota Kinabalu Daerah Kota Kinabalu Sabah.	13.00	27-08-2009
15.	IOI BIO-ENERGY SDN. BHD. KM12, Sungai Mowtas, Jalan Jaya Chip Off Jalan Batu Sapi, P.O. Box 3423 90738 Sandakan, Sabah. Tel : 089- 616 733 Faks : 089-616 734	IOI Edible Oils Sdn. Bhd. IOI Integrated Edible Oils Processing Complex Mukim Sungai Mowtas Daerah Sandakan 90738 Sabah.	15.00 *	20-01-2010
16.	TSH BIO-GAS SDN. BHD. Bangunan TSH, TB 9, KM7, Apas Road 91000 Tawau, Sabah. Tel : 089-912 020 / 911 056 Faks : 089-913 000	Lot CL 105392989 Mukim Kalumpang Daerah Tawau 91000 Sabah.	3.00	11-03-2010
17.	SEH POWER SDN. BHD. No. 2A, 2nd Floor, NKE Building Lorong Kacang Tanah, Jalan Kolombong Off Mile 5 1/2, Jalan Tuaran 88450 Kota Kinabalu, Sabah. Tel : 088-426 332 Faks : 088-424 215	Sandakan Education Hub Lot 01 to 25 Mukim Sungai Batang Daerah Sandakan Sabah.	45.00	11-03-2010
18.	FELDA ENGINEERING SERVICES SDN. BHD. Peti Surat No. 01, Bandar Cenderawasih 91150 Lahad Datu, Sabah. Tel : 089-811 130 Faks : 089-811 140	Gugusan Felda Umas Umas 1, 2, 3 & 4 Mukim Umas, Daerah Tawau Sabah.	2.60	31-03-2010
19.	FELDA ENGINEERING SERVICES SDN. BHD. Peti Surat No. 01, Bandar Cenderawasih 91150 Lahad Datu, Sabah. Tel : 089-811 130 Faks : 089-811 140	Gugusan Felda Sahabat Lot Sahabat 01-54 Mukim Sahabat Daerah Lahad Datu, Sabah.	23.94	31-03-2010
20.	FELDA ENGINEERING SERVICES SDN. BHD. Peti Surat No. 01, Bandar Cenderawasih 91150 Lahad Datu, Sabah. Tel : 089-811 130 Faks : 089-811 140	Gugusan Felda Kalabakan Kalabakan Tengah 01 & 02 Kalabakan Utara Dan Kalabakan Selatan Mukim Kalabakan, Daerah Tawau, Sabah.	1.55	31-03-2010

Bil No	Pemegang Lesen & Alamat Perhubungan Licensee & Contact Address	Kawasan Bekalan Area of Supply	Kapasiti Berlesen (MW) Licensed Capacity (MW)	Tarikh Lesen Dikeluarkan Date of Licence Issued
21.	UNTUNG RIA SDN. BHD. 12A, Jalan Teluk Likas 88450 Kota Kinabalu, Sabah. Tel : 088-393 257 / 393 258 Faks : 088-393 169 / 718 399	Lot No. CL 135193752 dan CL 135366139 Kg. Ulu Patikang Keningau Sabah.	4.00	09-08-2010
22.	SUARA WIRA SDN. BHD. Ground Floor, Lot 3 Blk. E, Donggongan New Township, Penampang 89500 Kota Kinabalu, Sabah. Tel : 088-712 792 Faks : 088-710 792	Lot TL 217501874 & TL 217502086 Mukim Donggongan New Township Daerah Penampang Sabah.	4.05	27-09-2010
23.	MALAYSIA AIRPORTS SDN. BHD. Pejabat Pengurusan, Aras 5 Bangunan Terminal Lapangan Terbang Antarabangsa Kota Kinabalu Beg Berkunci 134 88740 Kota Kinabalu, Sabah. Tel : 088-325 555 Faks : 088-325 511	Lapangan Terbang Antarabangsa Kota Kinabalu Lot PT 92010207, TK1, TK2 & TK3, Mukim Kota Kinabalu dan PT 92210081 Mukim Penampang, Daerah Kota Kinabalu Sabah.	5.50	03-11-2010
24.	MALAYSIA AIRPORTS SDN. BHD. Lapangan Terbang Tawau P.O. Box 60132, 91011 Tawau, Sabah. Tel : 089-950 777 Faks : 089-950 781	Lapangan Terbang Tawau Lot TK1, Mukim Apas Balong Daerah Tawau Sabah.	2.50	03-11-2010
25.	MALAYSIA AIRPORTS SDN. BHD. Lapangan Terbang Sandakan P.O. Box 730, 90009 Sandakan, Sabah. Tel : 089-667 784 Faks : 089-667 778	Lapangan Terbang Sandakan Lot TK1, Mukim Sandakan Daerah Sandakan Sabah.	2.50	03-11-2010
26.	ICSD VENTURES SDN. BHD. Harbour Mall Sandakan, Management Office Level 5, Sandakan Harbour Square 90000 Sandakan, Sabah. Tel : 089-276 888 Faks : 089-276 999	No. Lot T.L. 077579394 Daerah Sandakan Sabah.	4.00	08-06-2011
27.	SAGAJUTA (SABAH) SDN. BHD. F-925, 1st Floor, Auto City 1Borneo Hypermall, Jalan Sulaiman 88450 Kota Kinabalu Sabah. Tel : 088-447 288 Faks : 088-447 788	Bangunan Parcel 1 Phase 1 Shoplex (Tingkat Bawah - Tingkat 2, 106 unit) No. Lot CL. 015080145 dan CL. 015026392 Mukim Kuala Menggatal Daerah Kota Kinabalu Sabah.	3.22	30-04-2012

Nota • Note:

* Menjana dan mengagih elektrik

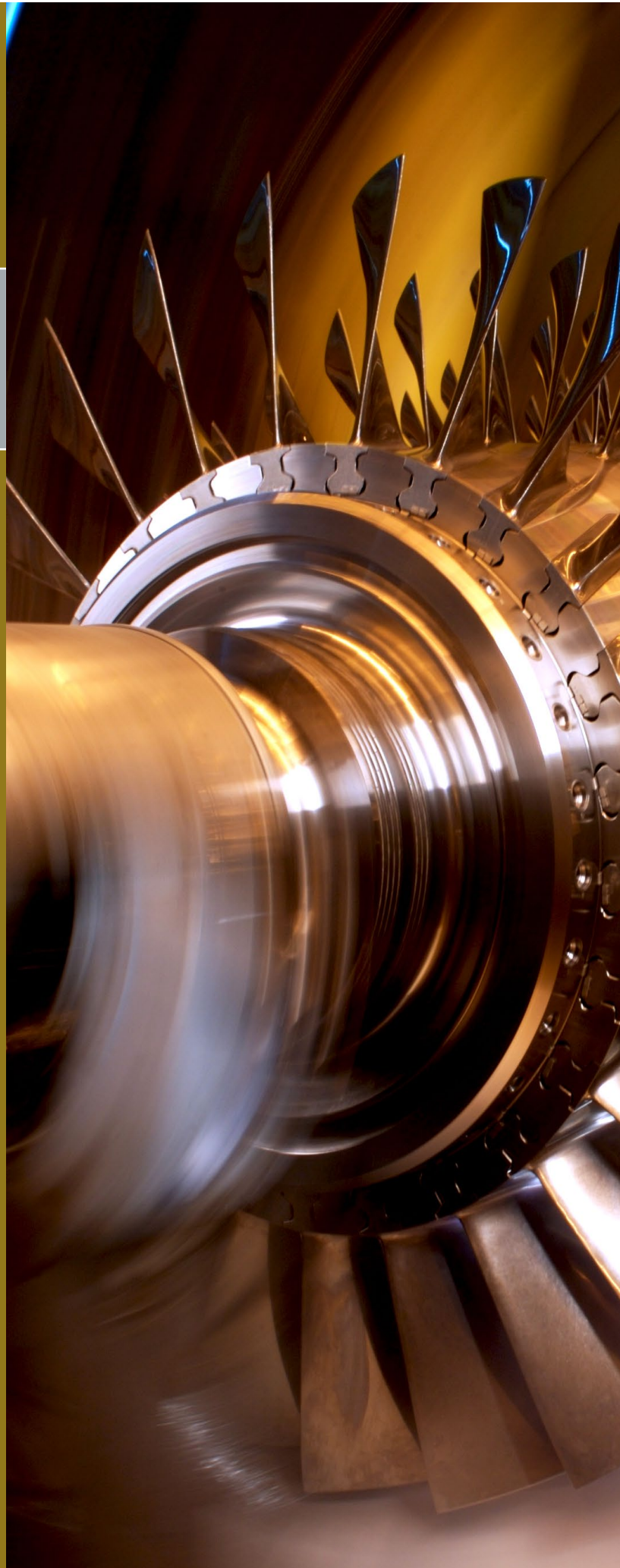
* Generating and distributing electricity

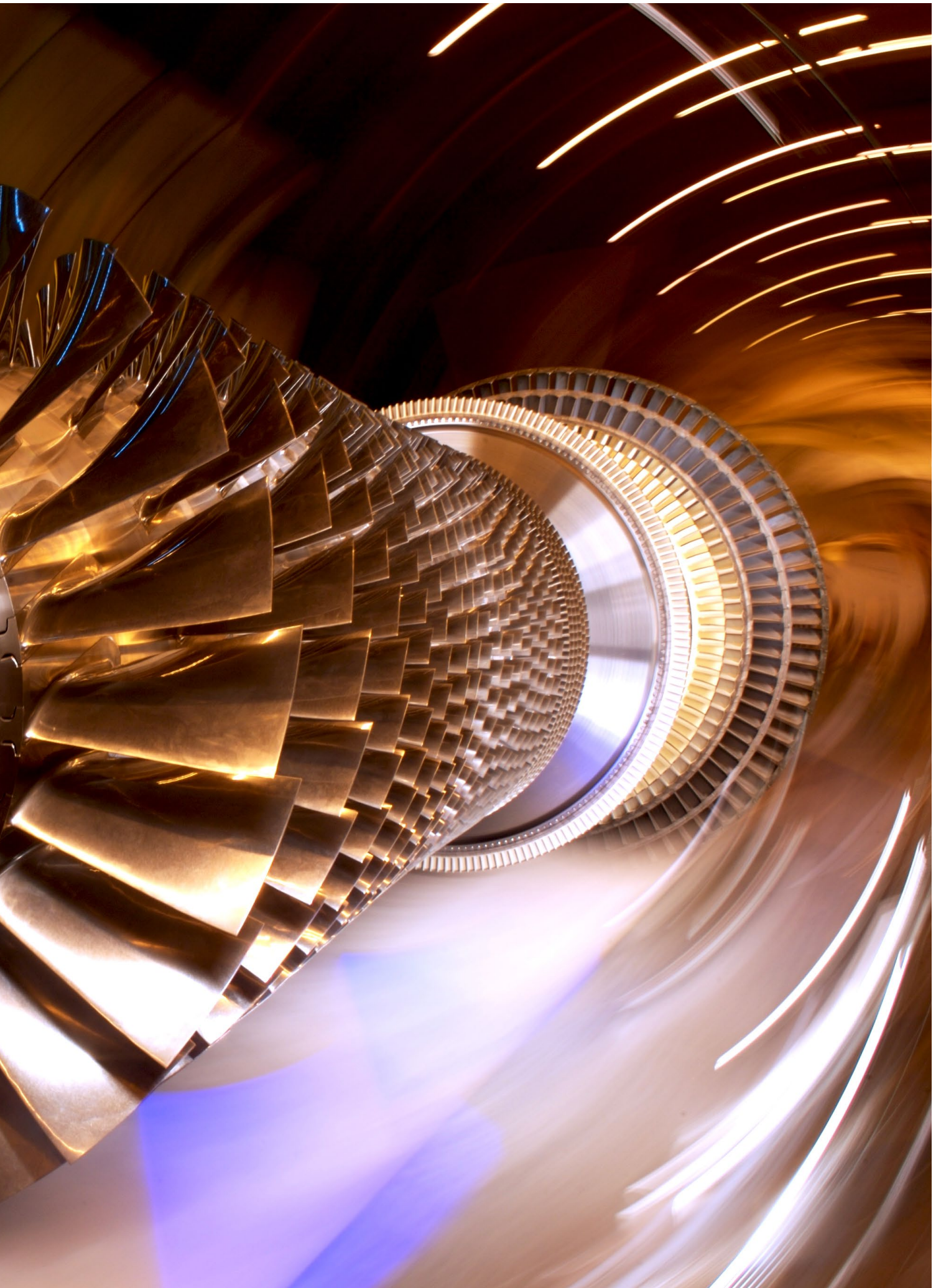
Maklumat dan Statistik Industri Pembekalan Elektrik

Information and Statistics on Electricity Supply Industry

Maklumat dan Statistik Industri di Sarawak Industry Information and Statistics in Sarawak

- 110. Sarawak Energy Berhad (SEB)
- 112. Penjana-Penjana Kuasa Bebas (IPP)
Independent Power Producers (IPPs)





Sarawak Energy Berhad (SEB)

Jadual 1: Sorotan Prestasi

Table 1: Performance Highlights

Petunjuk • Indicator	2008	2009	2010	2011	2012	2013
Kehendak Maksimum (MW) Maximum Demand (MW)	860	996	1,091	1,278	1,229	1,466
Jumlah Unit Penjanaan (GWj) ¹ Total Units Generated (GWh) ¹	2,555	2,234	2,321	7,279	7,025	6,572
Jumlah Unit Jualan (GWj) ² Total Units Sold (GWh) ²	4,421	4,540	5,728	6,486	7,587	10,420
Hasil Jualan Elektrik (RM Juta) Sales of Electricity (RM Million)	1,289	1,342	1,518	1,673	1,862	2,266
Kapasiti Penjanaan Terpasang (MW) ³ Installed Generation Capacity (MW) ³	546	530	530	1,358	1,352	1,332
Jumlah Kakitangan Number of Employees	2,143	2,212	2,242	3,529	3,882	4,040
Hasil Jualan Setiap Kakitangan (RM Juta/Kakitangan) Sales of Electricity per Employee (RM Million/Employee)	0.60	0.61	0.68	0.47	0.48	0.56
Unit Jualan Setiap Kakitangan (GWj/Kakitangan) Units Sold per Employee (GWh/Employee)	2.06	2.05	2.55	1.84	1.95	2.58
Kapasiti Penjanaan Setiap Kakitangan (MW/Kakitangan) Installed Capacity per Employee (MW/Employee)	0.25	0.24	0.24	0.38	0.35	0.33
Jumlah Unit Pembelian (GWj) Total Units Purchased (GWh)	2,851	3,643	4,672	759	2,712	5,414
Jumlah Unit Eksport (GWj) Total Units Exported (GWh)	-	-	-	-	-	-
Jumlah Unit Import (GWj) Total Units Imported (GWh)	-	-	-	-	-	-

Nota • Note:

¹ Jumlah Unit Penjanaan (Jumlah Campuran Penjanaan) bagi SEB tidak termasuk IPP di Sarawak

² Jualan Tenaga Elektrik bagi SEB termasuk pembelian dari IPP di Sarawak

³ Jumlah Kapasiti Penjanaan Terpasang SEB tidak termasuk IPP di Sarawak

¹ Generation Mix for SEB excluding IPPs in Sarawak

² Sales of Electricity for SEB includes the energy purchased from IPPs in Sarawak

³ Installed Generation Capacity for SEB excluding IPPs in Sarawak

Jadual 2: Kapasiti Terpasang (MW)

Table 2: Installed Capacity (MW)

Jenis Bahan Api • Fuel Type	2008	2009	2010	2011	2012	2013
Hidro Hydro	101	101	101	101	101	101
Gas Asli Natural Gas	271	271	271	675	608	588
Arang batu Coal	-	-	-	480	480	480
Medium Fuel Oil (MFO)	-	-	-	-	-	-
Diesel	174	158	158	102	163	163
Lain-lain Others	-	-	-	-	-	-
Jumlah • Total	546	530	530	1,358	1,352	1,332

Jadual 3: Campuran Penjanaan (GWj)
Table 3: Generation Mix (GWh)

Jenis Bahan Api • Fuel Type	2008	2009	2010	2011	2012	2013
Hidro Hydro	527	461	542	424	433	363
Gas Asli Natural Gas	1,672	1,479	1,516	3,243	2,777	3,014
Arang batu Coal	-	-	-	3,368	3,037	3,046
Medium Fuel Oil (MFO)	-	-	-	-	-	-
Diesel	356	294	263	244	778	147
Lain-lain Others	-	-	-	-	-	2
Jumlah • Total	2,555	2,234	2,321	7,279	7,025	6,572

Jadual 4: Jualan Tenaga Elektrik (GWj)
Table 4: Sales of Electricity (GWh)

Sektor • Sector	2008	2009	2010	2011	2012	2013
Domestik Domestic	1,132	1,249	1,335	1,423	1,584	1,722
Komersial Commercial	1,497	1,623	1,735	1,846	2,026	2,169
Industri Industry	1,726	1,606	2,593	3,151	3,904	6,457
Lampu Awam Public Lighting	66	62	64	66	73	72
Perlombongan Mining	-	-	-	-	-	-
Eksport Export	-	-	-	-	-	-
Lain-lain Others	-	-	-	-	-	-
Jumlah • Total ⁴	4,421	4,540	5,728	6,486	7,587	10,420

Nota • Note:

⁴Jualan Tenaga Elektrik bagi SEB termasuk pembelian tenaga elektrik daripada IPP di Sarawak

⁴Sales of Electricity for SEB includes the electricity purchased from IPPs in Sarawak

Jadual 5: Bilangan Pengguna
Table 5: Number of Consumers

Sektor • Sector	2008	2009	2010	2011	2012	2013
Domestik Domestic	391,875	406,119	424,550	444,340	461,422	483,106
Komersial Commercial	67,480	70,040	72,921	76,222	79,278	82,160
Industri Industry	900	905	923	947	970	985
Lampu Awam Public Lighting	6,149	6,507	6,811	7,042	7,383	7,699
Perlombongan Mining	-	-	-	-	-	-
Eksport Export	-	-	-	-	-	-
Jumlah • Total	466,404	483,571	505,205	528,551	549,053	573,950

Jadual 6: Keupayaan Sistem Penghantaran
Table 6: Transmission System Capacity

Talian/Kabel Sistem Penghantaran Transmission System Lines/Cables	2008	2009	2010	2011	2012	2013
500kV (km)	-	-	-	-	-	-
275kV (km)	765	765	765	867	1,086	1,188
132kV (km)	138	225	225	235	383	398
66kV (km)	-	-	-	-	-	-
Pencawang Penghantaran • Transmission Substations						
Bilangan • Number	22	23	24	22	25	27
Keupayaan (MVA) • Capacity (MVA)	4,726	4,806	4,886	5,206	5,876	6,356
Prestasi • Performance						
Bilangan Kejadian Pelantikan • Number of Tripping Incidents	9	4	7	8	16	20
Tenaga yang Tidak Dibekal (MWh) • Unsupplied Energy (MWh)	662	57	191	507	421	6,018

Jadual 7: Keupayaan Sistem Pengagihan
Table 7: Distribution System Capacity

Talian/Kabel Sistem Penghantaran Transmission System Lines/Cables	2008	2009	2010	2011	2012	2013
Talian Atas (km) • Overhead Lines (km)	18,565	19,147	19,803	20,254	21,030	22,350
Kabel Bawah Tanah (km) • Underground Cables (km)	5,422	5,709	6,087	6,450	6,680	6,969
Pencawang Pengagihan • Distribution Substations						
Bilangan • Number	8,290	8,500	8,685	9,130	9,588	10,365
Keupayaan (MVA) • Capacity (MVA)	6,217	3,218	3,321	3,490	3,744	4,002
Prestasi • Performance						
Bilangan Gangguan Bekalan • Number of Supply Interruptions	8,124	7,868	8,003	7,759	7,507	8,460

Penjana-penjana Kuasa Bebas (IPP)
Independent Power Producers (IPPs)

Jadual 8: Kapasiti Berlesen, Unit Penjanaan dan Unit Jualan
Table 8: Licensed Capacity, Units Generated and Units Sold

Bil No	Pemegang Lesen & Lokasi • Licensee & Location	Jenis Loji Plant Type	Kapasiti Berlesen Licensed Capacity (MW)	Unit Penjanaan (GWj) Units Generated (GWh)	Unit Jualan (GWj) Units Sold (GWh)
1.	SARAWAK HYDRO SDN. BHD. Bakun, Sarawak	Hidro Hydro	2,400	5,467	5,386

Nota • Note:

Bakun dimiliki dan dikendalikan oleh sebuah entiti di bawah Kerajaan Persekutuan Sarawak, Sarawak Hidro Sdn. Bhd.
 Bakun is owned and operated by Sarawak Hidro Sdn. Bhd. which is an entity under the Federal Government of Sarawak.

Ringkasan Maklumat Industri Pembekalan Elektrik di Malaysia

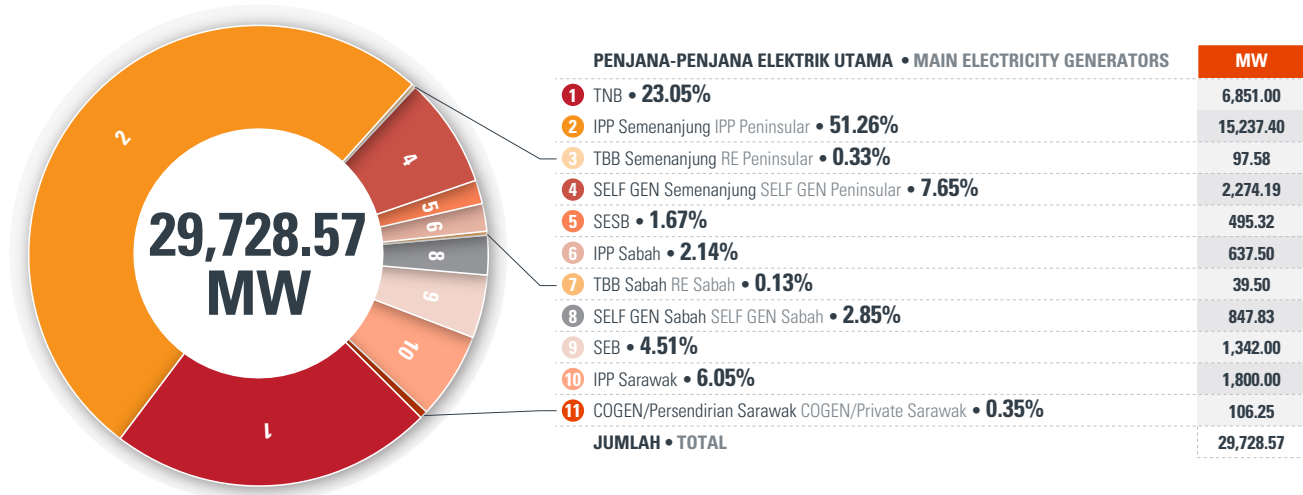
Summary of Information on
Electricity Supply Industry
in Malaysia



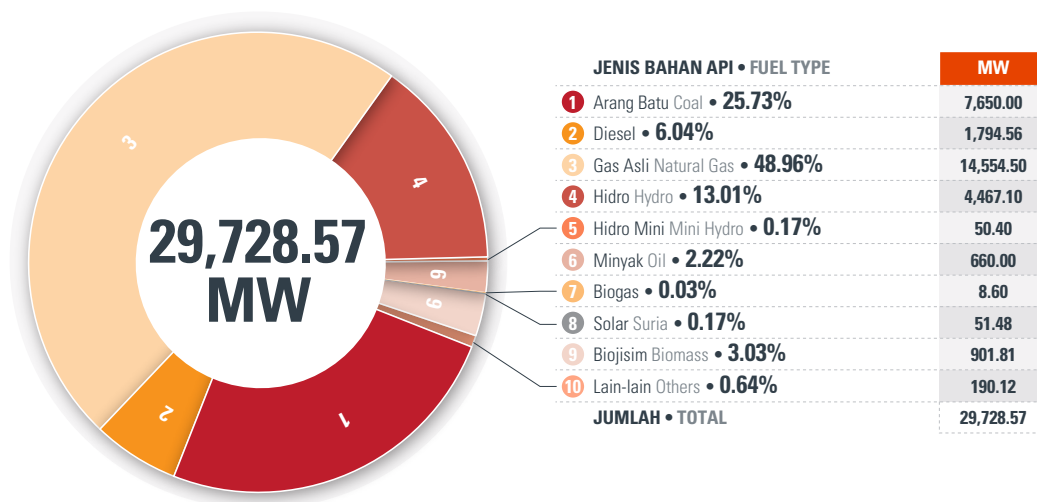
Ringkasan Maklumat Industri Pembekalan Elektrik di Malaysia

Summary of Information on Electricity Supply Industry in Malaysia

Carta 1: Kapasiti Penjanaan Terpasang di Malaysia
Chart 1: Installed Generation Capacity in Malaysia



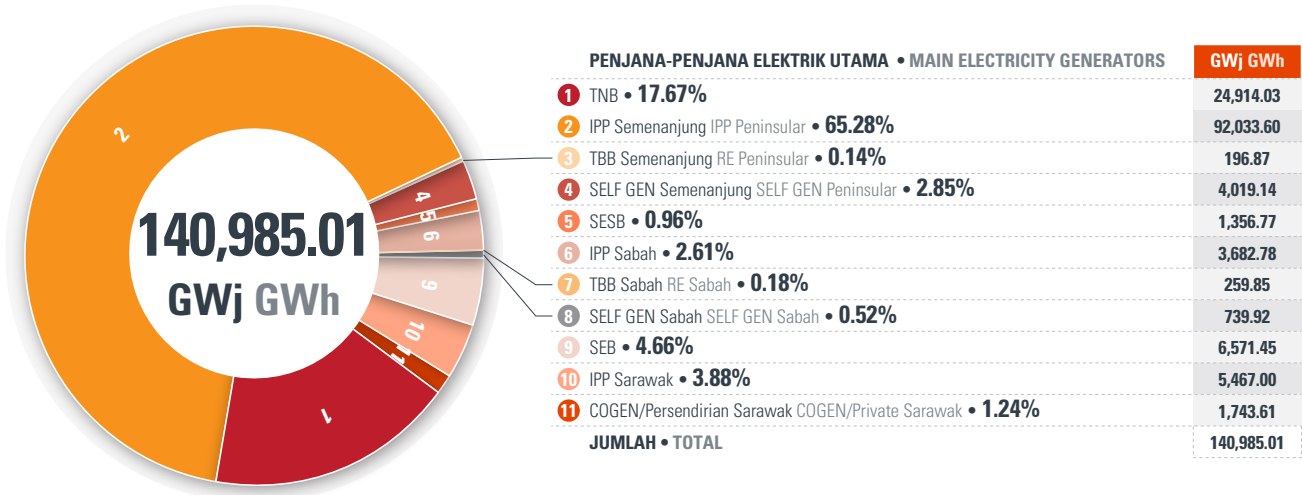
Carta 2: Kapasiti Penjanaan Terpasang di Malaysia mengikut Jenis Bahan Api
Chart 2: Installed Generation Capacity in Malaysia by Fuel Type



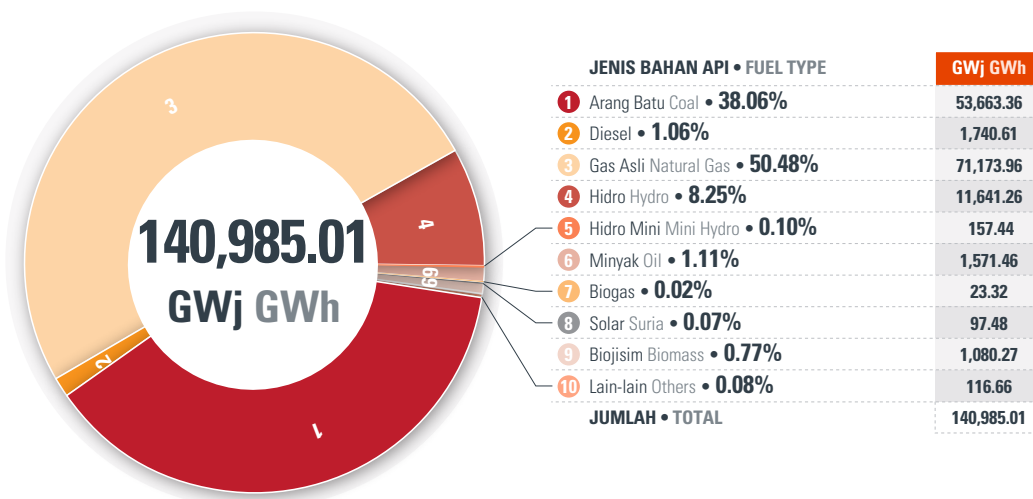
Nota: Jumlah kapasiti penjanaan terpasang tidak termasuk kapasiti penjanaan terpasang bagi stesen janakuasa yang belum beroperasi dan yang baru mula beroperasi pada bulan Disember 2013.

Note: Total installed capacity does not include power stations that are not operating yet and those that began their operation in December 2013.

Carta 3: Campuran Penjanaan di Malaysia
Chart 3: Generation Mix in Malaysia



Carta 4: Campuran Penjanaan di Malaysia mengikut Jenis Bahan Api
Chart 4: Generation Mix in Malaysia by Fuel Type



Carta 5: Penggunaan Tenaga Elektrik di Malaysia Mengikut Sektor (%)

Chart 5: Electricity Consumption in Malaysia by Sector (%)

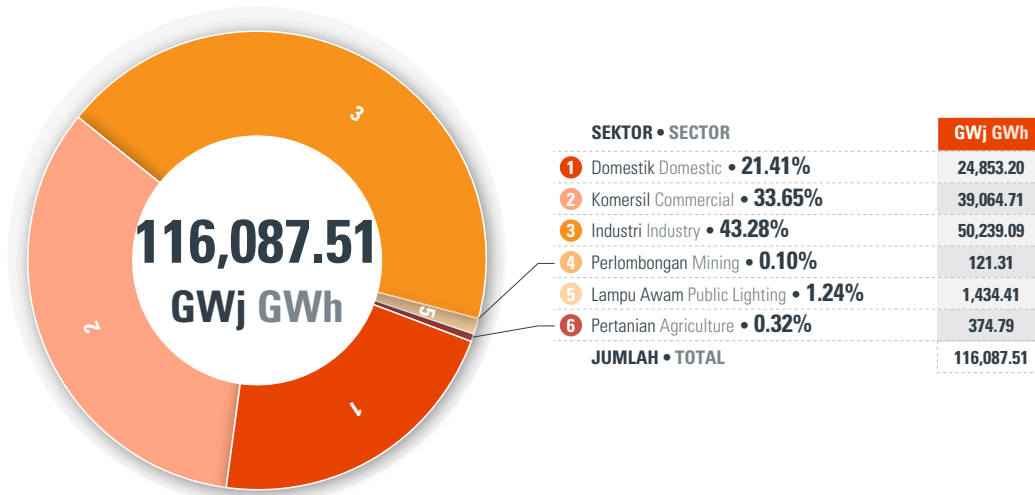
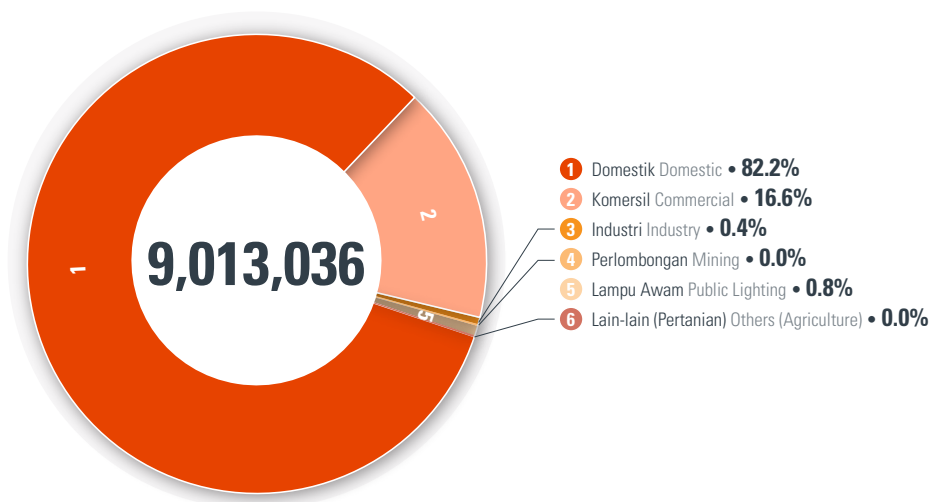
**Carta 6: Pengguna-pengguna Elektrik di Malaysia Mengikut Sektor (%)**

Chart 6: Electricity Consumers in Malaysia by Sector (%)

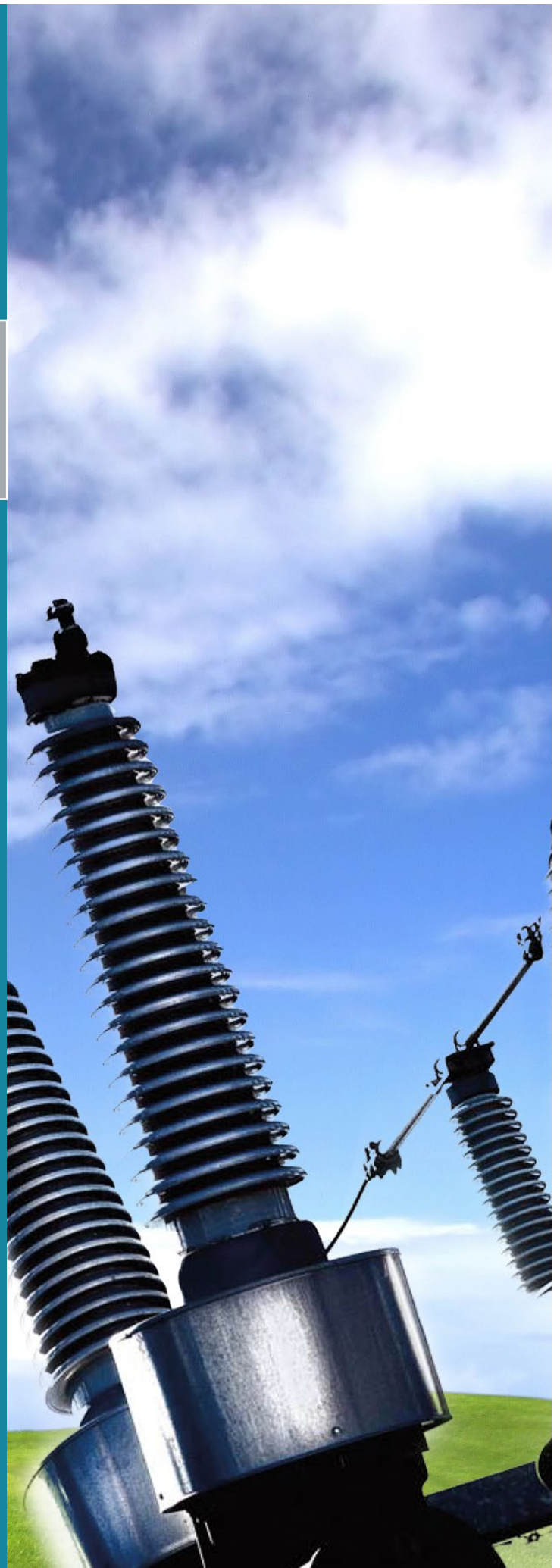


Bilangan Pengguna • Number of Consumers = 9,013,036 pengguna consumers

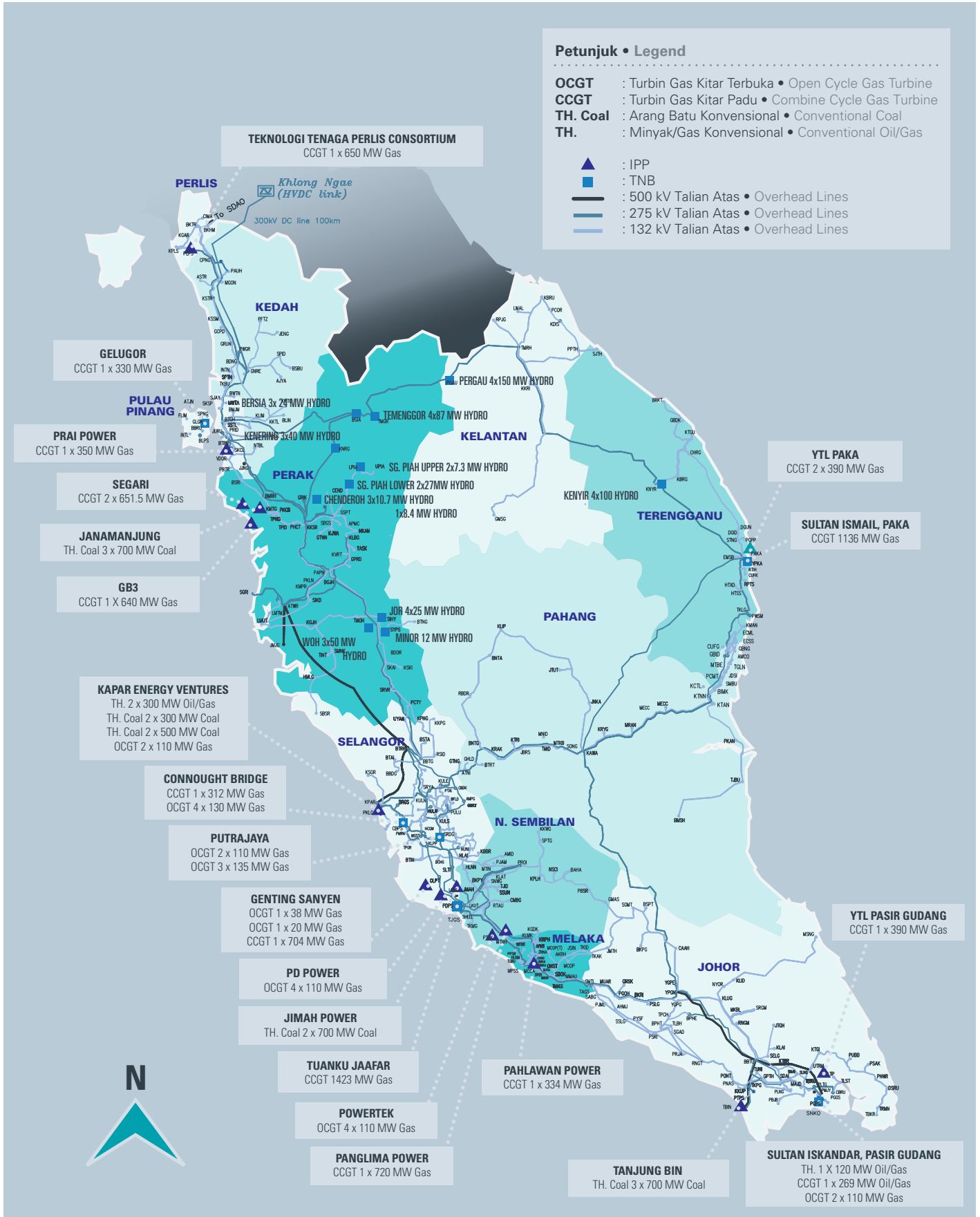
Peta Lokasi Stesen-stesen Janakuasa Utama & Sistem Grid di Malaysia

Location Maps of Major Power Stations & Grid System in Malaysia

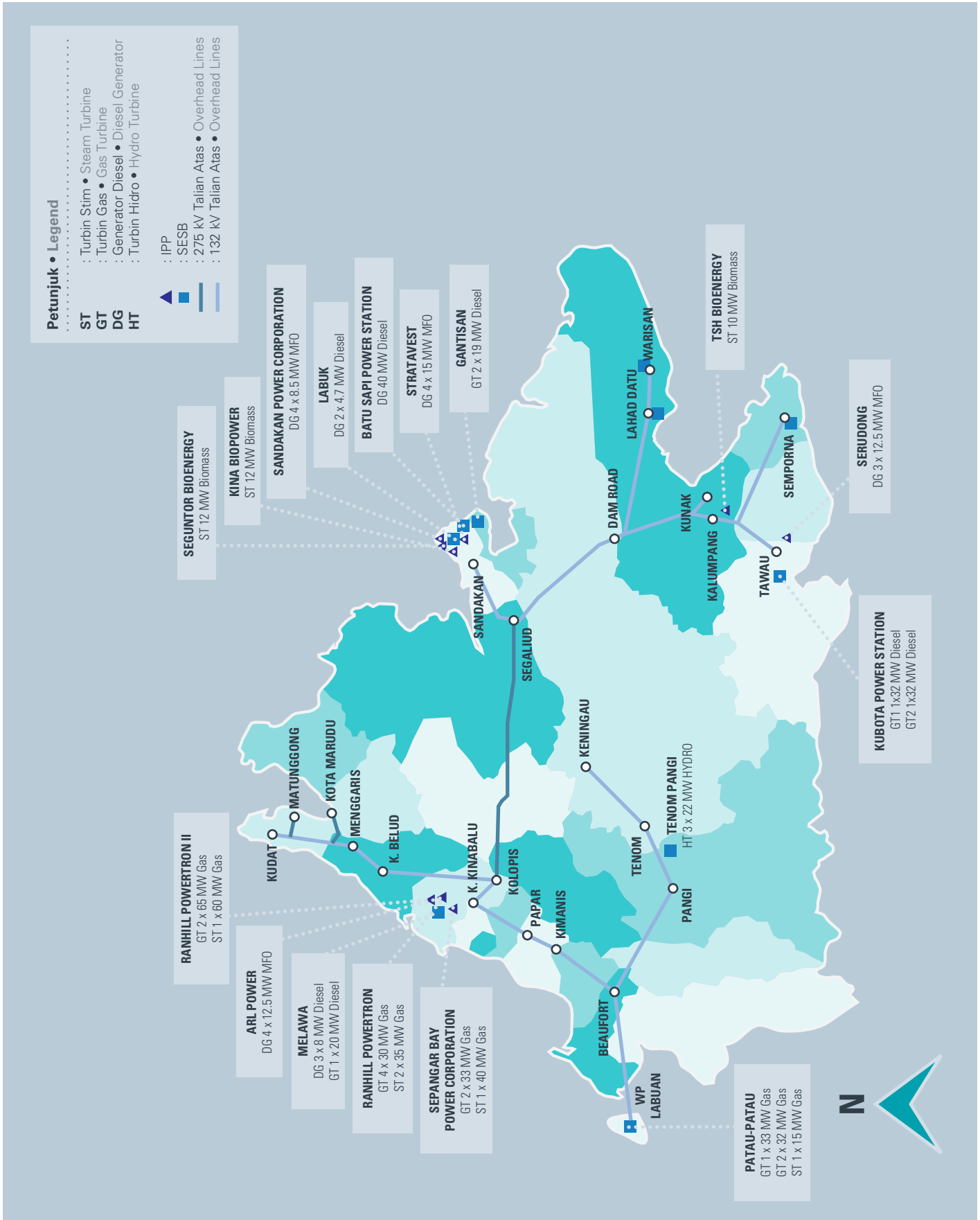
- 118.** Peta Lokasi Stesen-stesen Janakuasa Utama dan Sistem Grid di Semenanjung Malaysia
Location Map of Major Power Stations and Grid System in Peninsular Malaysia
- 119.** Peta Lokasi Stesen-stesen Janakuasa Utama dan Sistem Grid di Sabah
Location Map of Major Power Stations and Grid System in Sabah
- 120.** Peta Lokasi Stesen-stesen Janakuasa Utama dan Sistem Grid di Sarawak
Location Map of Major Power Stations and Grid System in Sarawak



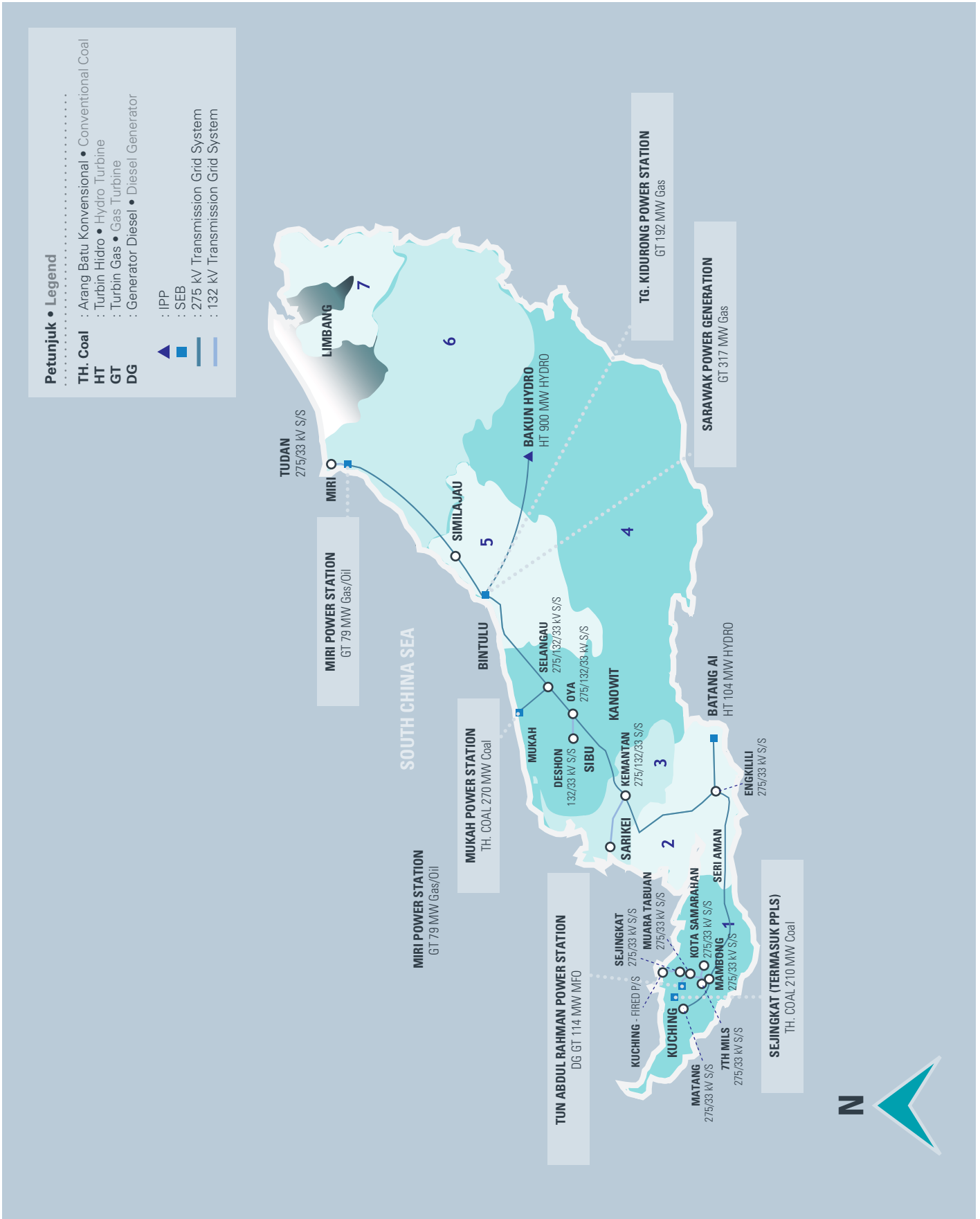
1. Peta Lokasi Stesen-stesen Janakuasa Utama dan Sistem Grid di Semenanjung Malaysia Location Map of Major Power Stations and Grid System in Peninsular Malaysia



2. Peta Lokasi Stesen-stesen Janakuasa Utama dan Sistem Grid di Sabah Location Map of Major Power Stations and Grid System in Sabah



3. Peta Lokasi Stesen-stesen Janakuasa Utama dan Sistem Grid di Sarawak Location Map of Major Power Stations and Grid System in Sarawak



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