Suruhanjaya Tenaga
Energy Commission

ANNUAL REPORT 2010

Keterangan Muka Depan

Rekabentuk unik atrium Bangunan Berlian Suruhanjaya Tenaga membolehkan cahaya semulajadi dimanfaatkan di ruang pejabat. Kubah dilengkapi dengan bidai automatik yang mempunyai enam tatarajah berbeza bagi memastikan tahap pencahayaan yang bersesuaian setiap masa.

Semakin hampir kepada ruang atrium, saiz tingkap semakin besar untuk mengimbangi tahap cahaya siang hari yang rendah di sana. Panel pemantul Tennenbaum turut dipasang di aras 4 dan 5 untuk memasongkan cahaya semulajadi merentasi ruang atrium ke aras 1 dan 2 yang kurang mendapat cahaya sianghari.

Pemantul profil disusun dengan kecondongan 10 darjah dan memantulkan kira-kira 85 peratus pancaran cahaya secara separa terang bagi mengelakkan silauan kepada penghuni bangunan.

CONTENTS

Tilting Façade
The tilting façade (exterior of the ST Diamond Building) allows self shading for the lower floors, protection from direct sun rays into the building and a smaller building footprint, resulting in a larger area for landscaping

CORPORATE INFORMATION

ABOUT THE ENERGY COMMISSION

The Energy Commission (Suruhanjaya Tenaga - ST) is a statutory body established on May 1, 2001 under the Energy Commission Act 2001. It assumed all the functions of the Department of Electricity and Gas Supply that regulated the electricity and piped gas supply industries in Peninsular Malaysia and Sabah. ST was established to enhance the effectiveness of the regulatory function in this sector and its responsibilities are enshrined by the Energy Commission Act (2001) and its subsequent amendments and regulations:

- Electricity Supply Act 1990 (Amendment) 2001
- Gas Supply Act 1993 (Amendment) 2001
- Licensee Supply Regulations 1990 (Amendment) 2002
- Electricity Regulations 1994 (Amendment) 2003
- Gas Supply Regulations 1997 (Amendment) 2000
- Electricity Supply (Compounding of Offences) Regulations 2001
- Gas Supply (Compoundable Offences) Order 2006
- Efficient Management of Electrical Energy Regulations 2008

VISION

To be a highly effective energy regulator and authority on energy matters.

MISSION

The Energy Commission strives to balance the needs of consumers with those of energy suppliers by ensuring safe and reliable supply at reasonable prices, protect public interests, and foster economic development and competitive markets in an environmentally sustainable manner.

CORE VALUES

- Excellence
- Reliability
- Sense of Fairness and Fairplay

FUNCTIONS OF THE ENERGY COMMISSION

- To advise the Minister on all matters concerning the national policy objectives for energy supply activities;
- To advise the Minister on all matters relating to the generation, production, transmission, distribution, supply and use of electricity as provided under the electricity supply laws;
- To advise the Minister on all matters relating to the supply of gas through pipelines and the use of gas as provided under the gas supply laws;
- To implement and enforce the energy supply laws;
- To regulate all matters relating to the electricity supply industry and to protect any person from dangers arising from the generation, production, transmission, distribution, supply and use of electricity as provided under the electricity supply laws;
- To regulate all matters relating to the supply of gas through pipelines and to protect any person from dangers arising from the supply of gas through pipelines and the use of gas as provided under the gas supply laws;
- To promote efficiency, economy and safety in the generation, production, transmission, distribution, supply and use of electricity and in the supply of gas through pipelines and the use of gas supplied through pipelines;
- To promote and safeguard competition and fair and efficient market conduct or, in the absence of a

competitive market, to prevent the misuse of monopoly or market power with regard to the generation, production, transmission, distribution and supply of electricity and the supply of gas through pipelines;

- To promote the use of renewable energy and the conservation of non-renewable energy;

- To promote research into, and the development and the use of, new techniques relating to
  i) the generation, production, transmission, distribution, supply and use of electricity; and
  ii) the supply of gas through pipelines and the use of gas supplied through pipelines;

- To encourage and promote the development of the electricity supply industry and the supply of gas through pipelines including in the area of training;

- To encourage and promote self-regulation in the electricity supply industry and the supply of gas through pipelines;

- To carry out any function conferred by or under the energy supply laws;

- To review the energy supply laws and to make the necessary recommendations to the Minister; and

- To carry on all such activities as may appear to the Commission requisite, advantageous or convenient for the purpose of carrying out or in connection with the performance of its functions under the energy supply laws.

REGULATION AND LAW ENFORCEMENT ACTIVITIES

- Licensing and Certification
- Setting of Performance Standards
- Monitoring and Investigation
- Legal Action
- Information Dissemination

LICENSING AND CERTIFICATION ACTIVITIES

The Energy Commission issues the following licences and attestations for the electricity and piped gas industries:

- Licence to Supply Electricity and Piped Gas
- Certification For Competent PersonsContractor Registration
- Installation Approval and Registration
- Accreditation of Competency Training Institutes
- Approval for Electric Appliances and Piped Gas Equipment
- Energy Efficiency Manager Registration

MEMBERS OF THE ENERGY COMMISSION

The Energy Commission has eleven (11) members appointed by the Minister of Energy, Green Technology and Water with the approval of the Prime Minister. They are the Chairman, Chief Executive Officer, three (3) representatives from the Government and six (6) professional members who are experienced in matters relating to engineering, finance, administration and law.

Seated from the left :

DATO' SRI DR. ALI BIN HAMSA
Director General
Public Private Partnership Unit
Date of Appointment : 1 December 2008

TAN SRI DATUK DR. AHMAD TAJUDDIN BIN ALI
Chairman, Energy Commission
Date of Appointment : 1 April 2010

DATUK LOO TOOK GEE
Interim Chairman
(Up to 31 March 2010)
Secretary General
Ministry of Energy, Green Technology and Water
Date of Appointment : 25 May 2007

Standing from the left :

DATO' M. RAMACHELVAM
Date of Appointment : 1 September 2010

IR. DR. PHILIP TAN CHEE LIN
Date of Appointment : 1 September 2009

DATUK IR. (DR) ABDUL RAHIM BIN HAJI HASHIM
Date of Appointment : 1 September 2009

IR. PETER LAJUMIN
Date of Appointment : 1 September 2010

DATUK PENGIRAN HASSANEL BIN DATUK PENGIRAN HAJI MOHD TAHIR
Permanent Secretary, Ministry of Finance, Sabah
Date of Appointment : 1 September 2009

IR. AHMAD FAUZI BIN HASAN
Chief Executive Officer
Date of Appointment : 1 April 2010

DATO' IR. PUA SHEIN TICK
Date of Appointment : 1 September 2010

DATO' IR. AISHAH BINTI DATO' HAJI ABDUL RAUF
Date of Appointment : 1 September 2009

COMMITTEES AND MEETINGS

FINANCE AND AUDIT COMMITTEE

Chairman: Datuk Ir. (Dr) Abdul Rahim Bin Haji Hashim

Members:
- Dato' Ir. Aishah Binti Dato' Haji Abdul Rauf
- Ir. Dr Philip Tan Chee Lin

LICENSING JOINT COMMITTEE (MANAGEMENT AND ENERGY COMMISSION)

Chairman: Datuk Loo Took Gee

Permanent Members:
- Dato' Sri Dr Ali bin Hamsa
- Dato' Ir. Aishah Binti Dato' Haji Abdul Rauf
- Ir. Ahmad Fauzi Bin Hassan

Invited Members:
- Senior Director, Department of Electricity Supply and Market Regulation
- Director, Department of Gas Safety and Supply Regulation
- Director, Enforcement and Regional Coordination
- Director, Energy Management and Industrial Development

REMUNERATION, QUALITY AND NOMINATION COMMITTEE

Chairman: Datuk Loo Took Gee

Members:
- Datuk Pengiran Hassanel Bin Datuk Pengiran Haji Mohd Tahir
- Datuk Ir. (Dr) Abdul Rahim Bin Haji Hashim
- Ir. Dr Philip Tan Chee Lin

INVESTIGATION CASES SPECIAL COMMITTEE

A Special Committee was established to handle unresolved investigations at the Department of Enforcement and Regional Coordination, co-chaired by **Datuk Ir. (Dr) Abdul Rahim Bin Haji Hashim and Dato' Ir. Aishah Binti Dato' Haji Abdul Rauf**.

MEETING CALENDAR 2010

MEETING CALENDAR 2010		
January	**February** **09** No 1/2010	**March** **29** No 2/2010
April **29** No 3/2010	**May**	**June** **08** No 4/2010
July **12** No 5/2010	**August** **13** No 6/2010	**September** **24** No 7/2010
October **25** No 8/2010	**November** **22** No 9/2010	**December** **16** No 10/2010

COMMITTEE MEETING CALENDAR 2010		
January **28** JKA 1/2010	**February** **08** JKA 2/2010	**March** **02** JKRK&N 1/2010
April **27** JKA 3/2010	**May** **21** JKBP(P&ST) 1/2010 **25** JKRK&N 2/2010	**June**
July	**August** **12** JKA 4 /2010 **27** JKRK&N 3/2010	**September** **17** JKBP(P&ST) 2/2010
October **28** JKKS 1/2010	**November** **12** JKKS 2/2010 **19** JKKS 3/2010	**December** **14** JKA 5/2010

Explanatory Note :

JKA : Finance and Audit Committee
JKBP(P&ST) : Joint Licensing Committee (Management and ST)
JKRK&N : Remuneration, Quality and Nomination Committee
JKKS : Investigation Cases Special Committee

SENIOR MANAGEMENT

IR. AHMAD FAUZI BIN HASAN
Chief Executive Officer
Date of Appointment :
1 April 2010

IR. AZHAR BIN OMAR
Senior Director, Electricity Supply and Market Regulation Department

IR. OTHMAN BIN OMAR
Director, Enforcement and Regional Coordination Department

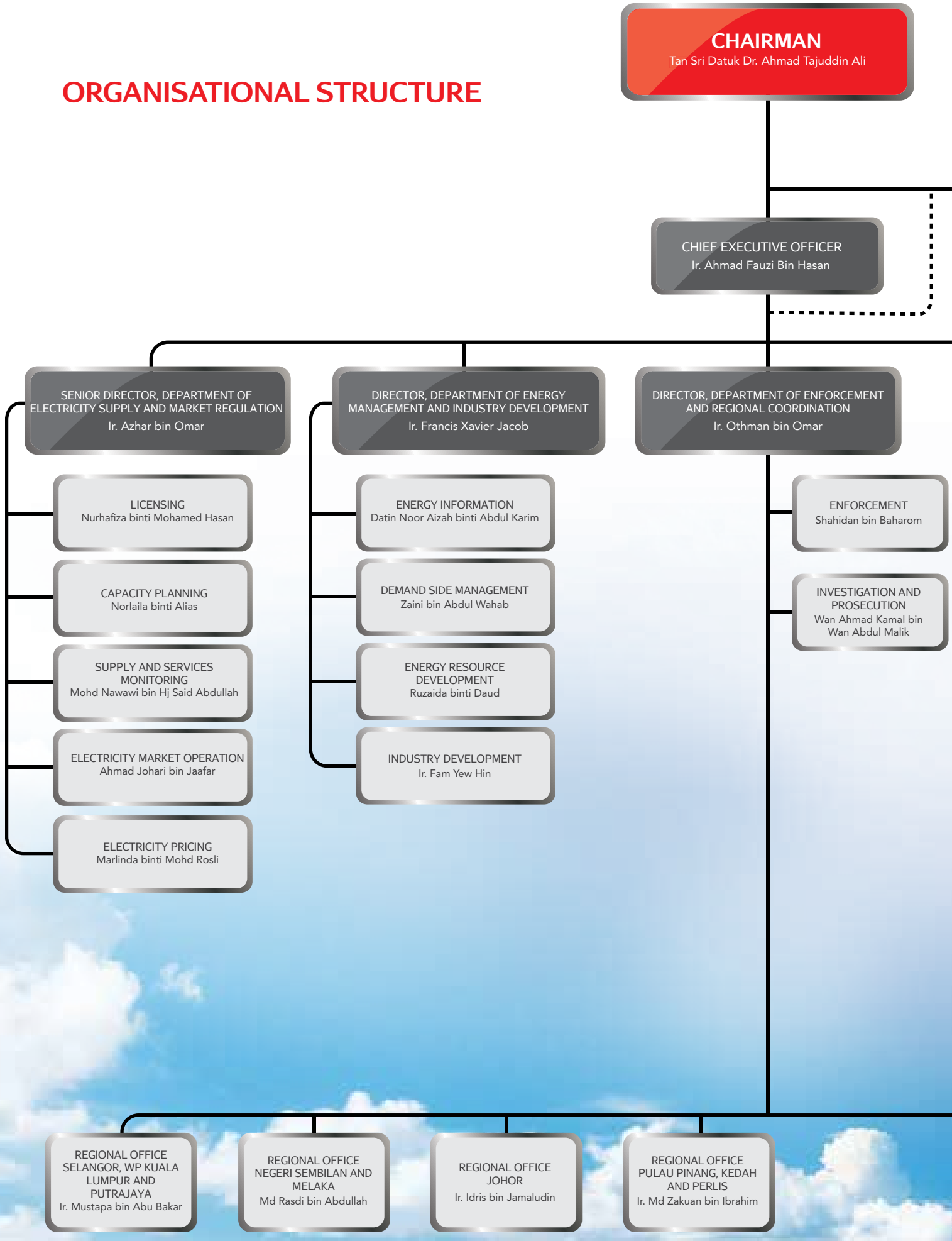
DR. SULAIMAN ABDULLAH
Director, Gas Safety and Supply Regulation Department (up to 16 October 2010)

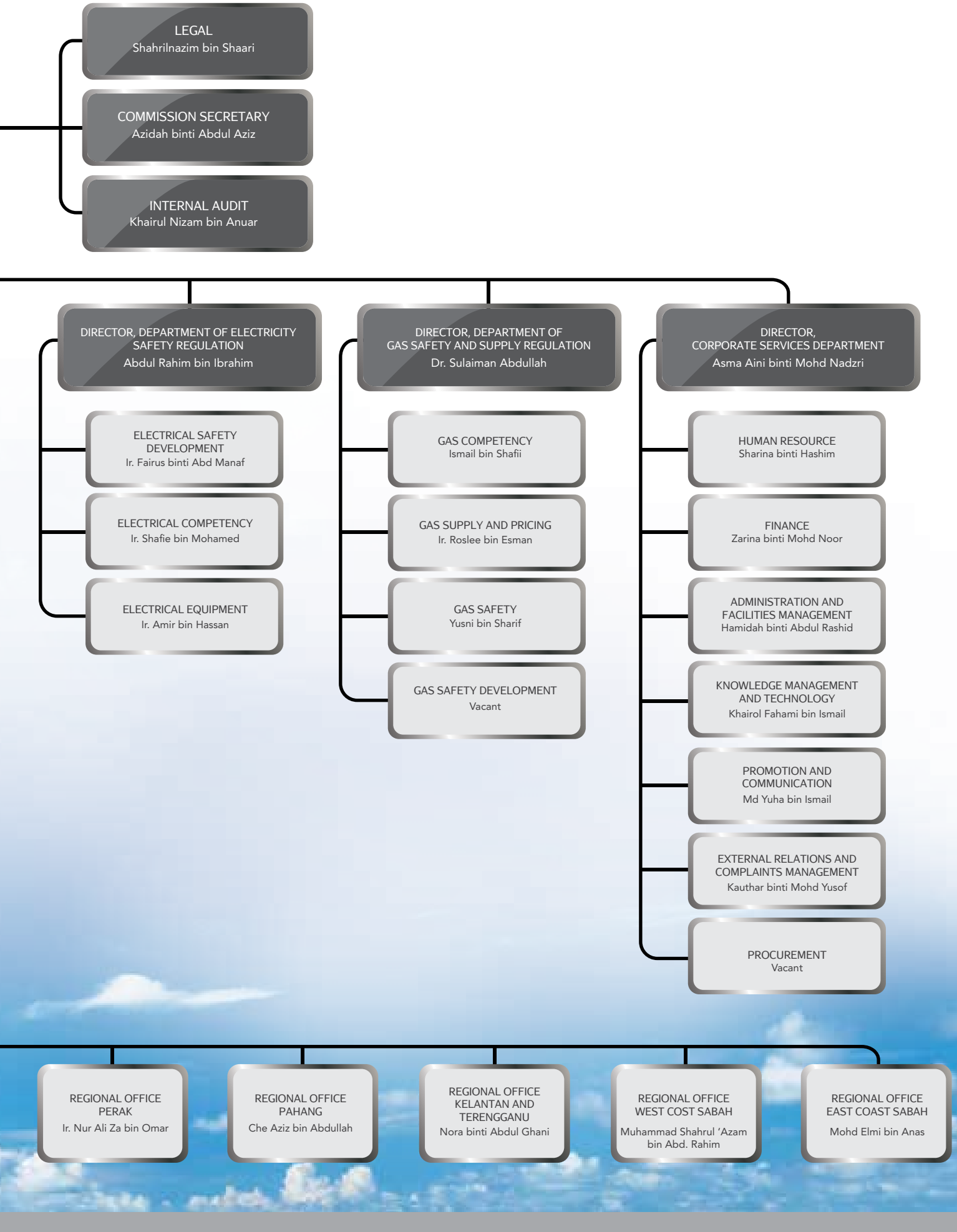
PUAN ASMA AINI BINTI MOHD NADZRI
Director, Corporate Services Department

IR. FRANCIS XAVIER JACOB
Director, Energy Management and Industry Development Department

TUAN HAJI ABDUL RAHIM IBRAHIM
Director, Electricity Safety Regulation Department

ORGANISATIONAL STRUCTURE




LEGAL
Shahrilnazim bin Shaari
COMMISSION SECRETARY
Azidah binti Abdul Aziz
INTERNAL AUDIT
Khairul Nizam bin Anuar
DIRECTOR, DEPARTMENT OF ELECTRICITY SAFETY REGULATION
Abdul Rahim bin Ibrahim
ELECTRICAL SAFETY DEVELOPMENT
Ir. Fairus binti Abd Manaf
ELECTRICAL COMPETENCY
Ir. Shafie bin Mohamed
ELECTRICAL EQUIPMENT
Ir. Amir bin Hassan
DIRECTOR, DEPARTMENT OF GAS SAFETY AND SUPPLY REGULATION
Dr. Sulaiman Abdullah
GAS COMPETENCY
Ismail bin Shafii
GAS SUPPLY AND PRICING
Ir. Roslee bin Esman
GAS SAFETY
Yusni bin Sharif
GAS SAFETY DEVELOPMENT
Vacant
DIRECTOR, CORPORATE SERVICES DEPARTMENT
Asma Aini binti Mohd Nadzri
HUMAN RESOURCE
Sharina binti Hashim
FINANCE
Zarina binti Mohd Noor
ADMINISTRATION AND FACILITIES MANAGEMENT
Hamidah binti Abdul Rashid
KNOWLEDGE MANAGEMENT AND TECHNOLOGY
Khairol Fahami bin Ismail
PROMOTION AND COMMUNICATION
Md Yuha bin Ismail
EXTERNAL RELATIONS AND COMPLAINTS MANAGEMENT
Kauthar binti Mohd Yusof
PROCUREMENT
Vacant
REGIONAL OFFICE PERAK
Ir. Nur Ali Za bin Omar
REGIONAL OFFICE PAHANG
Che Aziz bin Abdullah
REGIONAL OFFICE KELANTAN AND TERENGGANU
Nora binti Abdul Ghani
REGIONAL OFFICE WEST COST SABAH
Muhammad Shahrul 'Azam bin Abd. Rahim
REGIONAL OFFICE EAST COAST SABAH
Mohd Elmi bin Anas

Elements Of The Building
The ST Diamond Building showcases technologies that substantially reduce energy and water consumption, harness sustainable building materials and provide an enhanced indoor environmental quality.

CHAIRMAN'S MESSAGE

The year 2010 was a challenging one. The surge in international fuel prices especially of oil and coal, and declining local gas supply were causes for concern throughout 2010. Despite this difficult operating landscape, electricity producers succeeded in improving their supply performance and fulfilled the growing demand for electricity, which showed an increase of 5.8% in Peninsular Malaysia and 6% in Sabah in the year 2010.

The year also recorded a reduction of gas in the generation mix. This shortfall was compensated by an increase in other fuels, especially of coal. The generation mix for 2010 stood at 52.4% gas, 41.6% coal 5.1% hydroelectric and 0.4% other sources compared to 58.0% gas, 32.4% coal, 5.9% hydroelectric and 3.6% other sources in 2009.

In early 2010, the Prime Minister set a *System Average Interruption Duration Index* (SAIDI) target of 700 minutes/customer/year for Sabah. To achieve this target, the government allocated RM419 million to enhance the state's electricity supply system – for generation, transmission and distribution. As at 31 December 2010, the overall SAIDI for Sabah dropped significantly by 76% to 687.39 minutes/customer/year.

SAIDI for Peninsular Malaysia, meanwhile, registered a decline from 66.1 minutes/customer/year in 2009 to 62.9 minutes/customer/year.

Throughout 2010, the Energy Commission and *MyPower* implemented several transformation initiatives to strengthen and liberalise the electricity industry by 2020. One of the initiatives was competitive bidding, which was introduced to ensure that new power plants are developed at competitive prices in the future. A *Request for Proposal* (RFP) was issued in November 15, 2010 to select the party that will develop the coal powered 1000 MW power plant which is scheduled to begin operation on March 1, 2016.

The Government has also agreed in principle for the Energy Commission to implement an *Incentive Based Regulation* (IBR) approach in regulating the energy industry and when formulating electricity and gas tariffs. Based on this approach, operational cost savings achieved in the utility operation costs when providing services to consumers that is based on the service standards that have been set, will be shared between the utilities and consumers.

Construction of the Energy Commission's Headquarters, called the Diamond Building, was completed during the year and became available for occupation on March 15, 2010. On June 28 2010, the Energy Commision officially began operations at its new headquarters. The sustainable 8-storey building was conceptualised and built with energy efficiency in mind. It has been designed to achieve a building energy index not exceeding 85kWh/m2/year in comparison to a typical office building in Malaysia with an everage building energy index of 250kwh/m2/year. The construction of this building is the Energy Commission's contribution towards the government's initiative of promoting energy efficiency and green technology in the building industry. For this, the building has won two platinum accolades from Green Mark Singapore and the Green Building Index Malaysia.

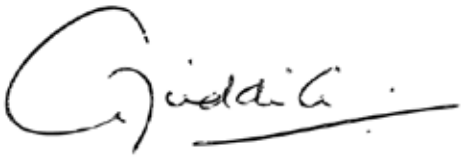
When the amendment to the Energy Commission Act 2001 became effective on February 11, 2010, there was a well defined separation of duties between the role of the Chairman and the Chief Executive Officer of the Energy Commission. At the same time, the position of the Chief Operating Officer was abolished and the position of the Director for the Electricity Supply Department was upgraded to Senior Director. The Energy Commission's organisational structure was further strengthened with the establishment of new units and positions to ensure more efficient and effective management, in line with current developments in the industry.

The role of the Energy Commission as a regulatory body of the energy sector depends on the professionalism and integrity of its workforce. As a result, the Transformation Plan 2011-2020 was drawn up to chart the Commission's future direction for industrial development and regulation. The objectives of the Transformation Plan can only be achieved with the support of highly competent and effective staff.

On behalf of the Energy Commission, I would like to express my sincere appreciation to YB Dato' Sri Peter Chin Fah Kui, Minister of Energy, Green Technology and Water, for his advice and continuous support. I would also like to thank the officials at the Ministry of Energy, Green Technology and Water, the Economic Planning Unit and other agencies for their support and contributions that have enabled the Energy Commission to function more effectively as the regulator of the national energy sector.

I would also like to extend my condolences to the family of our former Chairman, the late Datuk Ir. Mohd Annas Hj Mohd Nor, who passed away on 15 November 2010. He led the Energy Commission from 2001 to 2006. His contributions in building a strong foundation for the Energy Commision as aspired at its founding is very much appreciated.

Last but not least, I would like to thank all members and employees of the Energy Commision for their hard work in making the organisation a strong and competent one.



TAN SRI DATUK DR. AHMAD TAJUDDIN BIN ALI
Chairman, Energy Commission


Suruhanjaya Tenaga

CHIEF EXECUTIVE OFFICER'S REPORT

In 2010, the maximum demand for electricity in Peninsular Malaysia grew to 15,072 MW, from 14,245 MW in 2009; and, in terms of energy, from 94,748 GWh to 102,139 GWh. The increase reflects the country's strong economic recovery in 2010. At the same time, the intensity of electrical energy in Malaysia rose by 0.5% from 185 kWh per thousand RM of GDP to 186 kWh per thousand RM of GDP in 2010.

The energy sector on average received a daily gas supply totalling 1,139 mmscfd from Petronas compared to TNB's daily average requirement of 1,224 mmscfd. The decline in gas supply from Petronas to the energy sector is due to the supply constraints, which rose from 102 days in 2009 to 122 days in 2010. Out of this total, 69 days were planned while the rest were unplanned.

In Sabah, the maximum demand for electricity grew by 8.5% to 779.7 MW, from 718.8MW in 2009. The total amount of electrical energy consumed used in 2010 was 14.8 GWh, an increase of 4.2% compared to 14.2 GWh in 2009.

In 2010, the electricity supply shortage continued to be a major challenge. The need to increase generation capacity is becoming more critical to meet the rapidly rising demand of electricity, especially from the commercial and domestic sectors. The situation was further exacerbated by the termination of the coal-based power generation project in the East Coast of Sabah whose goal was to enhance electricity supply security in the state. Some areas in Sabah's East Coast still depend on ageing diesel power plants with waning reliability. Shortages in supply affected the performance of power stations, and they could not be maintained according to schedule. This had a negative impact on the reliability of these stations, which faced high down time and much lower available capacity compared to their full generation capacity. In an environment with a low margin of operations, several operational steps such as load management and load relief was implemented frequently throughout 2010 to stabilise the system when the load increased.

Following the Prime Minister's 700 System Average Interruption Duration Index (SAIDI) target for the state of Sabah in 2010, the industry rose to the challenge and recorded a substantial SAIDI drop - from 2,868 minutes in 2009 to 687.39 minutes in 2010.

In Peninsular Malaysia, there was an improvement in supply continuity performance for TNB. Overall, SAIDI fell to 62.9 minutes, while the number of electricity supply disruptions for every 1,000 consumers in 2010 declined by 15.6%, from 13.39 disruptions compared to 15.87 disruptions in 2009.

On 21 December 2010, the new Grid Code and Distribution Code were officiated by the Minister of Energy, Green Technology and Water. The 2010 Grid Code is an extension of the 1994 Grid Code, which was enhanced in line with the changes in the electricity supply industry in Peninsular Malaysia in the last 16 years. The 2010 Distribution Code is being used for the first time by the electricity distribution sector in the Peninsula to improve transparency and reliability in the process of planning, developing and operating the electricity supply system. Both new Codes were effective from January 1, 2011.

The Energy Commission has also started taking steps to establish Grid Codes specifically for Sabah and Labuan and is conducting comprehensive research on the grid system in Sabah. These are part of the effort to enable Sabah to have a safe, strong and reliable industry structure.

The Energy Commission completed the review of the service performance standards of TNB in 2010, especially for the types of service that were sources of consumer dissatisfaction. In line with this review, two categories of service performance have been identified: *Guaranteed Service Levels* which involve the provision of rebates to the consumers for levels that are not achieved, and also the *Minimum Service Levels*.

Based on the findings of a study - the *Electricity and Gas Tariff Structure in Peninsular Malaysia and Sabah*, the Energy Commission took the necessary steps to introduce the concept of *Incentive-Based Regulation* (IBR) to formulate electricity and piped gas tariffs that enhances the effectiveness of economic regulation of the country's main utility providers. The IBR framework involves changes in the mechanism to determine and review electricity and gas

tariffs structure which promotes operational efficiency of the utilities. Through the IBR mechanism, a separate regulatory account will be created based on supply activities, enabling the Energy Commission to evaluate more accurately the actual performance of the utilities according to financial performance, operational expenditure and capital expenditure estimates submitted to justify a tariff review. For this purpose, eleven (11) Regulatory Implementation Guidelines for the electricity supply and piped gas distribution sectors are being developed.

The Energy Commission was entrusted by the Ministry of Energy, Green Technology and Water (MEGTW) to prepare a National Energy Balance (NEB) Report from 2010. To produce the report, the Commission updated the national energy database. Prior to this, the NEB report was prepared by the Malaysian Energy Centre (MEC), now known as the Malaysian Green Technology Corporation (GreenTech Malaysia). To implement this new function, the Commission established the Energy Information Unit that is responsible for gathering, storing and providing information on all energy data of the country. With the national energy database under its purview, the Commission will be better served to fulfill its role of planning and legislating the national energy policies.

With regards to energy efficiency, the Commission's industrial regulation function is guided by the Efficient Electricity Management Regulations 2008, where emphasis is given to ensuring that there are sufficient Electrical Energy Managers to meet the needs of the industry. As of the end of 2010, 132 individuals were registered as Electrical Energy Managers. The labelling programme for refrigerators, television, domestic fans and air-conditioners was also intensified, with the number of labelled products models rising to 1,097. In addition, the energy efficiency rating for electrical appliances now covers the perlite insulator.

The country's initiative to enhance the use of renewable energy sources for power generation registered marginal improvement. Only *two Small Renewable Energy Programme* (SREP) projects with a total capacity of grid connection 6.2 MW commenced in 2010, i.e. a 1.7 MW biogas project and a 4.5MW mini-hydro project. The slow progress in the development of SREP projects in 2010 could be due to project owners preferring to wait for the implementation of the *Feed In Tariff* (FIT).

The Commission is also actively involved in the national initiative for nuclear energy development via the Nuclear Power Legislative Development Coordination Working Committee (JKPPPKN). The Energy Commission co-chairs the JKPPPKN together with the Atomic Energy Licensing Board (LPTA).

There is room for improvement in electrical safety performance. In 2010, the industry recorded 33 cases of fatal accidents and 36 cases of non-fatal accidents compared to 35 fatal and 21 non-fatal cases in 2009 in the Peninsula and Sabah. Overall, the rate of victims per million of electricity consumers in 2010 rose to 8.77, from 7.37 in 2009.

To reduce electrical accidents, the Commission increased the number of awareness programmes via the electronic and print media. There were also nationwide programmes targeting those involved in electricity safety standards, which urged vigilance and monitoring of tradesmen, contractors, electricity and gas installation workers, and also those involved in the sale of electrical appliances. In addition, a study was commissioned to evaluate their level of compliance with the Electricity Supply Act 1990 and Electricity Regulations 1994.

In law enforcement, electricity theft was a priority. The Commission collaborated with TNB, SESB and the Royal Malaysia Police to conduct operations to prevent this crime.

To achieve its vision to become an effective regulator for the country's energy sector, the Commission's management developed the Energy Commission Transformation Programme that consists of three action plans: (a) Economic, Technical and Safety Regulation Action Plan; (b) Regulation Framework Rationalisation Plan; and (c) Corporate Development Plan. The Transformation Plan will be implemented from 2011 to 2020.

I would like to express my sincere appreciation and thanks to the members of the Commission for their guidance and support to the management. I would also like to extend my deepest condolences to the family of our former Chairman, the late Datuk Ir. Mohd Annas Hj Mohd Nor who passed away on November 15, 2010. He made immense contributions in shaping the Energy Commission during his tenure as Chairman and Chief Executive Officer from 2001 to 2006, and this was very much appreciated by all its employees.

May Allah bless his soul and place him among the righteous.

I would also like to extend my deepest gratitude and thanks to all staff for their cooperation and support in successfully implementing the Commission's diverse programmes and activities in 2010. Thank you.

IR. AHMAD FAUZI HASAN
Chief Executive Officer

CALENDAR OF EVENTS

JANUARY - MARCH

January 11, 2010
Senior Managers Workshop on Economic Regulation Principles, Quality Hotel, Kuala Lumpur

January 15, 2010
Energy Efficiency Convention, 1 Borneo, Kota Kinabalu, Sabah

February 18, 2010
Working Visit to TNB, Kuala Lumpur

March 6, 2010
Electrical Safety Awareness Seminar organised by TNB in Sg Besar, Selangor

March 8, 2010
Workshop on Economic Regulation Reform of the Energy Sector

March 12, 2010
ST Briefing on Electricity Supply in Sabah

APRIL

April 03, 2010
Booth at the Electrical Safety Awareness Seminar in Permatang Pauh, Penang

April 10, 2010
Electrical Safety Awareness Seminar in Ayer Keroh Malacca

April 17, 2010
Electrical Safety Awareness Seminar in Rompin, Pahang, jointly organised by the ST, TNB and the Ministry of Education

April 20, 2010
Tan Sri Datuk Dr Ahmad Tajuddin Bin Ali reporting as the new Chairman of ST

April 21, 2010
The Minister's visit to Hulu Selangor in conjunction with the "Touchpoint" programme to promote electrical safety and encourage the efficient use of electricity

April 28, 2010
Energy Consultation Panel (PPT) Meeting

MAY

May 10, 2010
Metering, Billing/ CRM Asia 2010 in Shangri La, Kuala Lumpur

May 10, 2010
The Launch of SMART Meter 2010

May 14, 2010
Courtesy visit by TNB to ST

May 15 – 16, 2010
Miri Job Expo 2010 at the Miri Indoor Stadium

May 19, 2010
Seminar on the safety of the Piped Gas system

May 20, 2010
Seminar on Applicable Coal Price Way Forward

JUNE - JULY

June 9, 2010
The Minister's visit to the Diamond Building

June 16-19 2010
ST participates in the Kelantan Fiesta in Kota Bharu, Kelantan

July 5, 2010
Dialogue between ST and TNB

July 16, 2010
Foreign delegates visit the ST Diamond Building

July 24 - 25, 2010
Participation in the main programme of the National Consumer Month 2010 at Dataran Pahlawan, Malacca

AUGUST - SEPTEMBER

August 6, 2010
Morning Assembly and Presentation of the Excellent Service Award 2010

August 9, 2010
National Energy Forum, jointly organised by MGA-ST-ECOM

August 13, 2010
Buka Puasa (Breaking fast) function

September 4, 2010
RTM Hujung Minggu Malaysia – a talkshow segment on electrical safety with ST Director of Electrical Safety

September 8, 2010
ST engaged in a talkshow segment on electrical safety on Malaysia Hari Ini, TV3

OCTOBER

October 7, 2010
Briefing/Dialogue between the Electrical Safety Department and REDHA

October 5 2010
ST's Hari Raya Function

October 18, 2010
Official Opening of the Asia Pacific Regional Conference and Exhibition on Energy Efficiency (APACEEE 2010) in Berjaya Times Square Hotel, KL by the Chairman

October 14-17, 2010
International Greentech and Eco Products Exhibition & Conference (IGEM) in KLCC

NOVEMBER

Nov 1, 2010
Discussing Energy Efficiency Labelling for electrical appliances in a segment on *Wanita Hari Ini*, TV3

Nov 20, 2010
Interview with the Director of Electrical Safety in the Nasi Lemak Kopi O show on TV9

Nov 24, 2010
Incentive-Based Regulation Workshop

26 Nov 2010
Puspanita Working Visit to the ST's Diamond Building

November 29 – December 3, 2010
APEC Peer Review on Energy Efficiency (PREE) Meeting

DECEMBER

Dec 01, 2010
Briefing / Dialogue with TEEAM

Dec 17, 2010
ST's Appreciation Ceremony

December 21, 2010
Launching ceremony for the New Grid Code and Distribution Code for the Electricity Supply Industry

Recycling Of Water Usage
Recycling is one of the major concepts applied in the ST Diamond Building, including the recycling of water

ACTIVITY AND PERFORMANCE REPORT

ENSURING RELIABLE AND EFFICIENT ENERGY SUPPLY AT REASONABLE PRICES

ELECTRICITY SUPPLY AND DEMAND SITUATION

INSTALLED GENERATION CAPACITY IN PENINSULAR MALAYSIA

In 2010, the installed generation capacity in Peninsular Malaysia was maintained at the 21,817 MW level as no new capacity was added. TNB's installed generation capacity remained at 7,040 MW, 32.3%, while 67.7% was provided by Independent Power Producers (IPP).

Although the reserve margin stood at approximately 45% in 2010 compared to 53% in 2009, it was still at a comfortable level with current generation capacity sufficient to fulfil rising annual electricity demand.

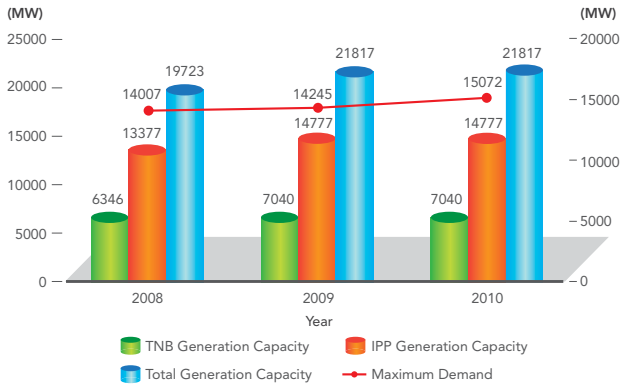
Installed generation capacity in Malaysia

Type of Power Plant	Main Fuel	MW
Combined Cycle Gas Turbine	Gas	9,373
Conventional Thermal	Coal	7,170
Conventional Thermal	Gas/Oil	840
Open Cycle Gas Turbine	Gas	2,455
Open Cycle Gas Turbine	Distillate	68
Hydroelectric	Hydro	1,911
Total Installed Capacity		**21,817**

MAXIMUM DEMAND

The maximum demand on the grid system rose from 14,245 MW in 2009 to 15,072 MW in May 24, 2010, an increase of 5.8%.

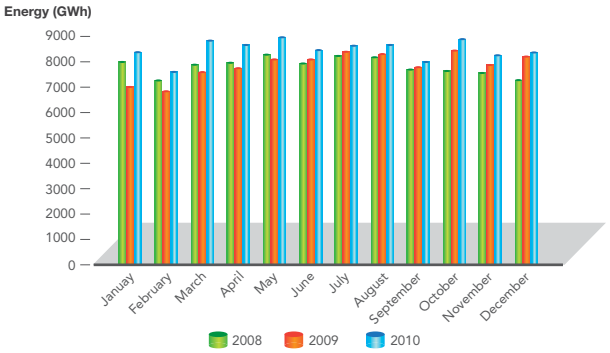
Installed Generation Capacity and Maximum Demand in Peninsular Malaysia in 2010



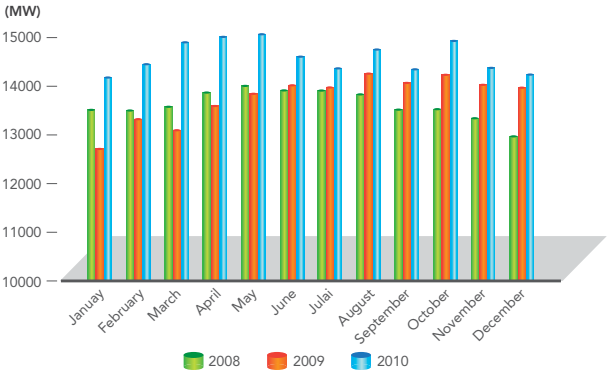
ELECTRICITY DEMAND IN PENINSULAR MALAYSIA

The overall annual energy demand rose at 7.8%, from 94,748 GWh in 2009 to 102,139 GWh in 2010. Energy sales in 2010 also increased to 90,770 GWh, 8.8% higher from 83,411 GWh in 2009.

Comparative Monthly Energy Demand for 2008, 2009 and 2010



Comparative Monthly Maximum Demand for 2008, 2009 and 2010



INSTALLED CAPACITY IN SABAH

As of 31 December 2010, the installed generation capacity for the whole of Sabah totalled 1,216.4 MW, while dependable capacity stood at 1,111.1 MW compared to an installed generation capacity of 1,061.2 MW and dependable capacity of 978.2 MW for 2009.

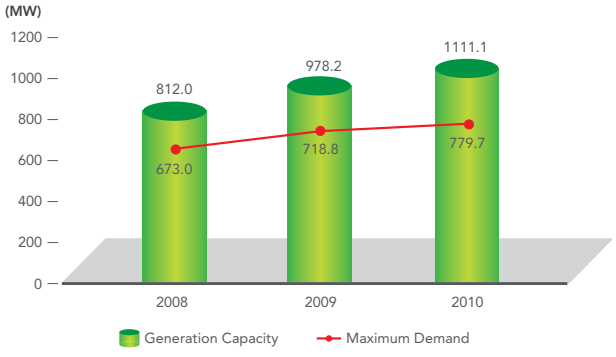
Breakdown of Installed Generation Capacity and Dependable Capacity by Main Fuel Sources and Areas

Fuel	Installed Generation Capacity (MW)	Reliable Capacity (MW)		Total Dependable Capacity (MW)	Percentage (%)
		West Coast (MW)	East Coast (MW)		
Gas	563.0	526.5	0	526.5	47
Medium Fuel Oil (MFO)	181.5	47.5	127.9	175.4	16
Diesel	357.4	97.8	201.9	299.7	27
Hydroelectric	76.5	74.5	2.0	76.5	7
Biomass	38.0	0	33.0	33.0	3
Total	**1,216.4**	**746.3**	**364.8**	**1,111.1**	**100**

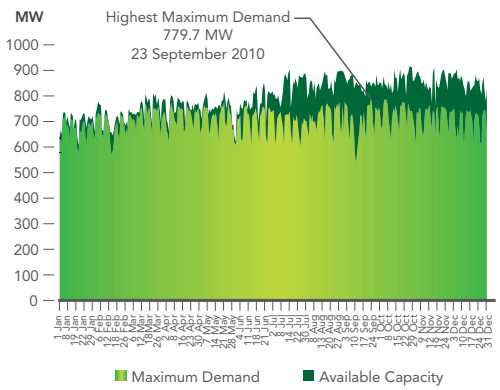
MAXIMUM DEMAND

The maximum demand on the Sabah grid system in 2010 rose by 8.5%, from 718.8 MW recorded in 2009 to 779.7 MW in 2010.

Comparison of Dependable Generation Capacity and Maximum Demand in Sabah for 2008, 2009 and 2010



Daily Maximum Capacity & Available Capacity

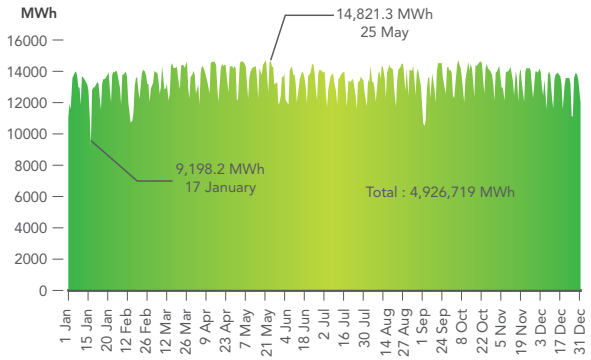


ELECTRICITY DEMAND IN SABAH

As in the previous years, the shortage of electricity supply in Sabah in 2010 was still a major issue. The need to increase generation capacity was becoming more critical due to the rapid growth in energy demand especially from the commercial and domestic sectors. This could be clearly seen through the continued increase in demand in the first half of 2010 although the economy was just starting to recover during that period

Overall, the annual demand for electricity increased 4.2% from 14.2 GWh in 2009 to 14.8 GWh in 2010. Energy sales in 2010 also grew by 8.1%, i.e. from 3,818 GWh in 2009 to 4,127 GWh in 2010.

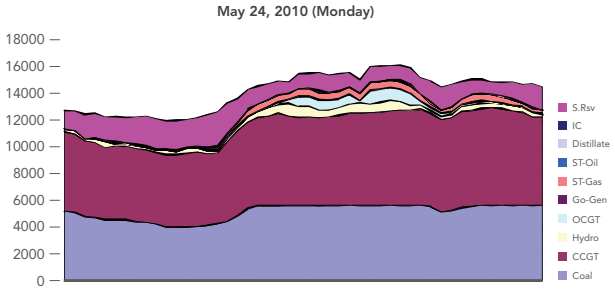
Electricity Demand Trend in 2010



GRID SYSTEM OPERATIONAL STATUS – PENINSULAR MALAYSIA

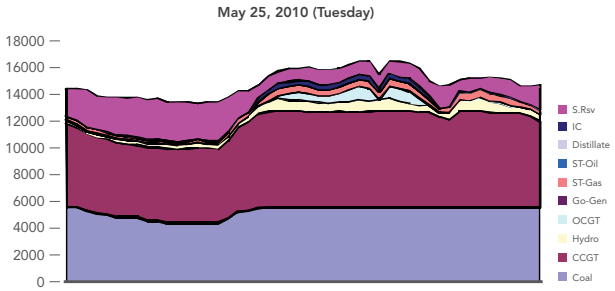
MAXIMUM DAILY DEMAND FOR 2010

The generation profile in May 24, 2010 recorded a maximum demand for 2010 i.e. 15,072MW at 4:00 pm. This was an increase of 5.8% compared with the highest demand recorded at 14,245 MW in 2009.



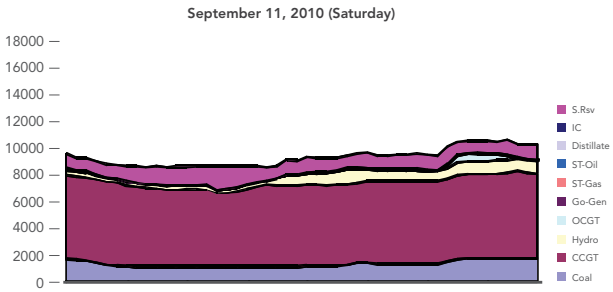
HIGHEST ENERGY DEMAND THROUGHOUT 2010

The generation profile for May 25, 2010 showed the highest daily energy demand, at 311.5 GWh.



LOWEST MAXIMUM DEMAND, DAILY ENERGY DEMAND AND MINIMUM DEMAND (THROUGH) FOR 2010

The generation profile for September 11, 2010 recorded the lowest maximum demand, daily energy demand and minimum demand for 2010. Generally, the lowest maximum energy demand and minimum daily demand are recorded on the second day of Aidilfitri.

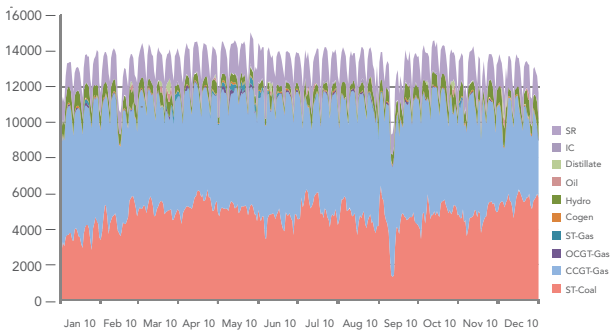


Comparison of Lowest Maximum Demand, Daily Energy Demand and Minimum Demand for 2009 and 2010.

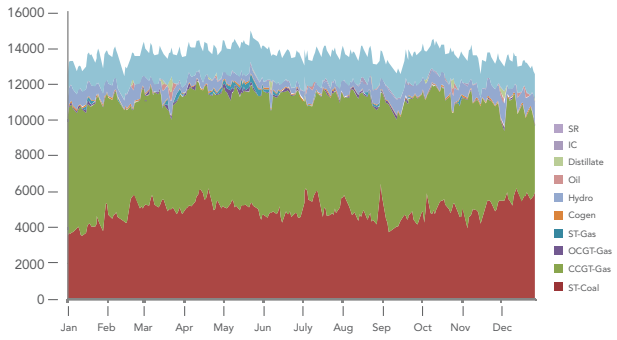
	Maximum Demand (MW)	Energy Demand (GWh)	Minimum Demand (MW)
2009	8,596	172.8	6,208
2010	9,605	194.8	6,807

DAILY GENERATION PROFILE THROUGHOUT 2010

Daily Generation Profile 2010



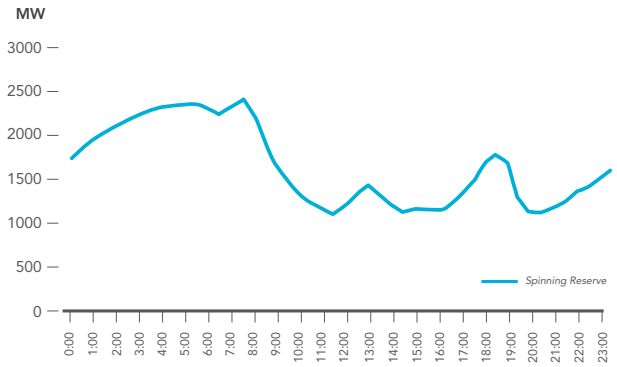
Daily Generation Profile (Excluding Saturdays, Sundays and Public Holidays) for 2010



RESERVE MARGIN

A comfortable reserve margin in Peninsular Malaysia enabled the daily operation of the Grid System to be planned and handled according to the regulations and standards stipulated. This can be seen from the following graph and table:

Spinning Reserve Average Profile;



Availability Status For 2010

	MW	%
Maximum Demand	13,423	61.5
Available Reserve	1,604	7.4
Non-spinning reserve	3,888	17.6
Scheduled Work Outage	683	3.1
Unscheduled Work Outage	1,675	7.7
Derated Capacity	544	2.5

Comparison of Installed Generation Capacity, Maximum Demand and Reserve Margin for Five Years

	2006	2007	2008	2009	2010
Installed Generation Capacity (MW)	18,323	19,723	19,723	21,817	21,817
Maximum Demand (MW)	12,990	13,620	14,007	14,245	15,072
Reserve Margin (%)	**41.1**	**44.8**	**40.8**	**53.2**	**44.8**

In 2010, gas was still the main source of generation fuel. However, the gas generation mix decreased from previous years. This contributed to the increase in coal fuel generation which was due to the shortage and irregularity of gas supply faced by the power generation sector.

Comparative Generation Mix Percentage for 2008, 2009 dan 2010

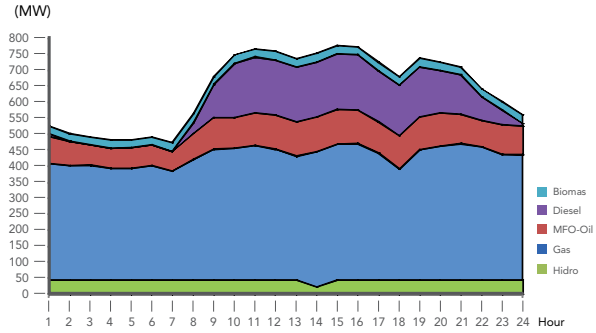
Fuel	2008	2009	2010
Gas	63.9	61.7	52.8
Coal	29.1	31.8	41.6
Hydroelectric	6.9	6.2	5.1
Others	0.1	0.3	0.4

GRID SYSTEM OPERATIONAL STATUS - SABAH

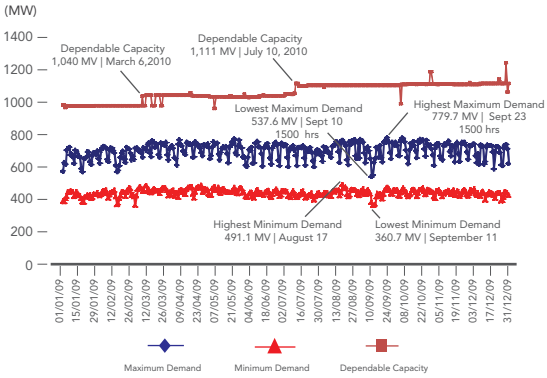
GENERATION PROFILE FOR THE HIGHEST MAXIMUM DEMAND FOR 2010

The Generation profile for September 23, 2010 recorded the highest daily maximum readings for 2010 at 779.7MW.

Average Generation Profile on September 23 2010



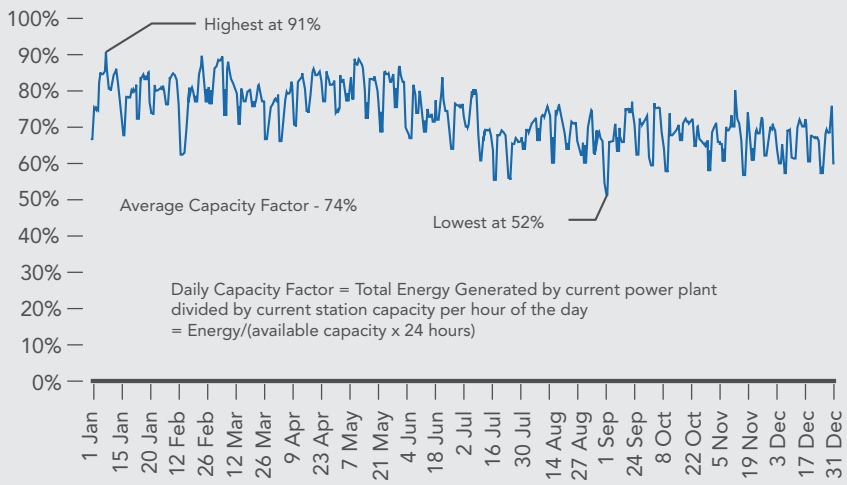
Sabah Maximum and Minimum Demand in 2010



DAILY CAPACITY

In line with the increase in average dependable capacity at 1,057 MW, system availability also recorded a good average of 789.9 MW or 74.7%

Daily Capacity Factor for 2010



SYSTEM GENERATION CAPACITY

The main source of power supply for the East Coast of Sabah comes from diesel power plants which were mostly ageing and prone to frequent breakdowns. This had caused the system to operate at a low reserve margin in the first half of 2010. The problem was alleviated with the addition of several units of mobile diesel powered generators to fulfil electricity demand in Sabah. Meanwhile, in the West Coast of Sabah, most of the power plants are in good operating condition except for the combined cycle power plant in Patau-Patau that had a generator turbine problem and faced difficulties in obtaining spare parts.

CAPACITY ADDITION

On March 6, 2010, Ranhill Powertron II (RPII) began operating the GT1 plant with a capacity of 65MW followed by the commencement of GT2 also with a capacity of 65 MW on July 10 to fulfil increasing demand for electricity. The additions enhanced dependable capacity to 1,111.1 MW for the Sabah grid system. Overall, total capacity of 160.5 MW were added by Sabah power plants in 2010. Other additions include 20MW from the mobile generator in POIC Lahad Datu, Sabah, 6 MW from the Teck Guan biomass plant and the 4.5 MW from Sg. Pangapuyan mini hydro plant. They were added to the Sabah grid system from January to December 2010. Furthermore, two power stations based on renewable energy commenced operations with a production capacity of 10.5 MW.

The Seguntor and Kina Biopower biomass power plants have started to show consistent generation performance. In 2010, average daily operation reserve stood at 23%, while the highest reserve recorded was at 40%, with most of the capacity being provided by the Ranhill Powertron (RPII) power plant.

List of Power Plants That Commenced Operations In 2010

No	Power Plant	Main Fuel	Commencement Date	Capacity (MW)
1	Ranhill Powertron II – Phase I (Open Cycle Gas Turbine) Kota Kinabalu, Sabah	Gas	March 2010	65
2	POIC (Palm Oil Ind. Cluster) Lahad Datu, Sabah	Diesel	June 2010	20
3	Ranhill Powertron II – Phase II (Open Cycle Gas Turbine) Kota Kinabalu, Sabah	Gas	July 2010	65
4	Tech Guan Poer Plant, Tawau, Sabah	Biomass	October 2010	6
5	Mini Hydro SREP, Sg. Pangapuyan, Kota Murudu, Sabah (Esajadi Power)	Hydro	December 2010	4.5
	Total			**160.5**

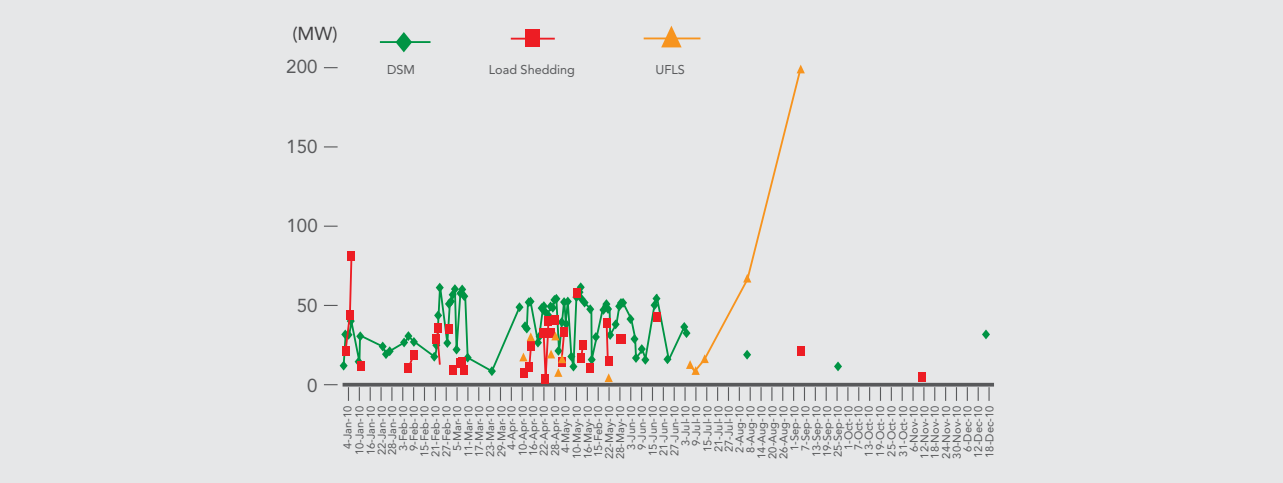
PLANNED AND UNPLANNED OUTAGE

On average, the availability of IPP power plants stood at 86% compared to SESB power plants which were operating at 58%. The low availability was due to ageing plants and the fact that generation units could not be maintained on schedule due to insufficient capacity. This led to a high rate of unplanned outage at 21.7% (240.8 MW) as opposed to planned outage of 1.6% (18MW). In comparison, the planned and unplanned outage for Peninsular Malaysia in 2010 stood at 3.1% and 7.7% respectively.

LOAD MANAGEMENT

With low margin of operations, several measures were taken to stabilize the system when faced with increased load to avoid interruptions in system operations. From January to June 2010, measures such as demand side management (DSM), load shedding and under frequency load shedding (UFLS) were frequently implemented. Load reduction through DSM, load shedding and UFLS were conducted less often after the 130 MW capacity Ranhill Powertron II commenced operations.

DSM and Reduced Load Shedding After July 2010



GAS SUPPLY INTERRUPTIONS IN SABAH

Throughout 2010, power plants in the West Coast of Sabah faced intermittent gas supply interruptions. When the problem occurred, they switched to diesel to fulfil demand. A total of 11 and 8 gas supply disruptions were reported respectively by the Sepangar Bay Power Corporation and Ranhill Powertron power plants.

ELECTRICITY SUPPLY SYSTEM PERFORMANCE

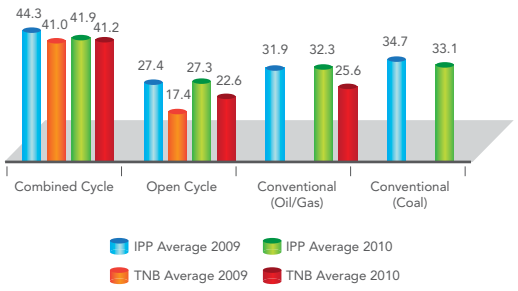
GENERATION SYSTEM PERFORMANCE

THERMAL EFFICIENCY

In 2010, the thermal efficiency was consistent for TNB's combined cycle power plant, but there was an increase for the open cycle power plant. The increase was due to a more comprehensive measurement of thermal efficiency compared to the previous year when TNB Pasir Gudang power plant generated power only in September and October 2009. Thermal efficiency for the combined cycle and open cycle power plants for IPPs' was consistent in 2010 compared to the previous years.

The thermal efficiency for TNB's oil and gas power plants increased in 2010 from the previous year due to the lack of generation activity at the Pasir Gudang TNB power plant in 2009. However, generation activity recommenced in 2010 and thermal efficiency was measured at 25.6%. For the coal fuelled plants, the average thermal efficiency was at 33.1% in 2010. Thermal efficiency was influenced by several factors, including generation type, site condition, delivery level, maintenance, duration and method of operation.

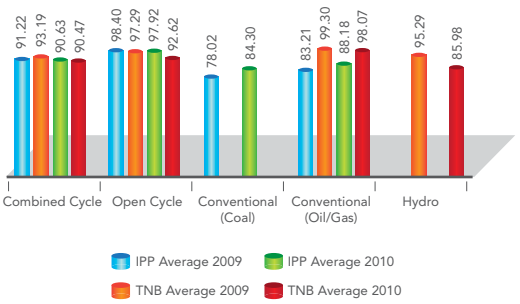
Average Thermal Efficiency for IPP and TNB Power Plants in 2009 and 2010



PLANT EQUIVALENT AVAILABILITY FACTOR- EAF

Generally, an EAF performance of 90% and above indicates that the IPP and TNB power plants are performing at good levels. Overall, most power plants achieved an EAF of more than 90% in 2010 except for coal fuelled plants, oil/gas fuelled plants and hydroelectric power plants.

Average Plant Equivalent Availability Factor (EAF) for IPP and TNB Power Plants in 2009 dan 2010

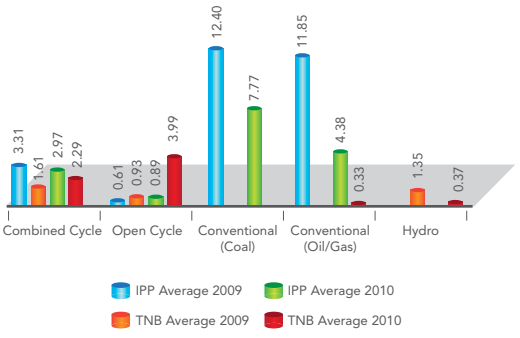


EQUIVALENT UNPLANNED OUTAGE FACTOR - EUOF

The EUOF target stood at 4% for the combined cycle and open cycle plant and 6% for oil/gas fuelled plants. The performance of combined cycle and open cycle for TNB power plants declined while the IPPs' power plants recorded an improvement except for the open cycle plants.

Overall, the combined cycle and open cycle power plants operated at a better level compared to coal and oil/gas fuelled conventional power plants.

Average Equivalent Unplanned Outage Factor (EUOF) for IPP and TNB Power Plants in 2009 dan 2010

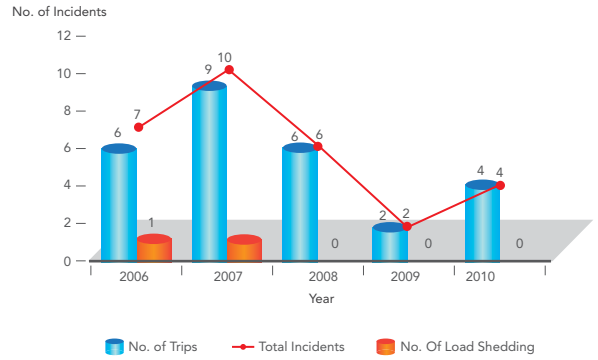


PERFORMANCE OF TRANSMISSION SYSTEM IN PENINSULAR MALAYSIA

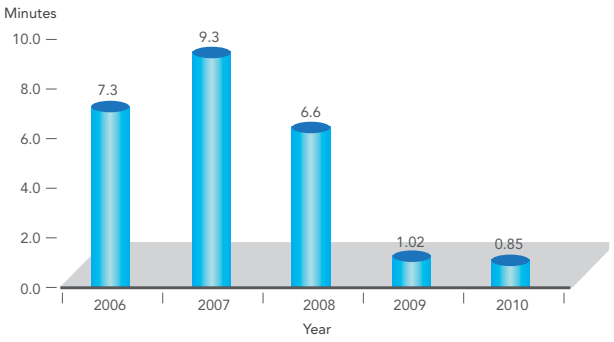
Four tripping incidents with a load loss of 50 MW and above were reported in the Peninsular Malaysia transmission system in 2010, compared to two incidents in 2009. This indicate that the transmission system performance in Peninsular Malaysia declined slightly compared to 2009. However there were no load shedding incidents reported in 2010. The amount of unsupplied electricity increased slightly to 310.7MWh from 158.3 MWh in 2009.

In 2010, TNB Delivery Point Unreliability Index (DePUI)-System Minutes in Peninsular Malaysia recorded a decline of 17% to 0.85 minutes from 1.02 minutes in 2009.

Transmission System Trip with Load Loss of 50 MW and above from 2006 to 2010



Comparison of *DePUI Index– System Minutes* over 5 year Period

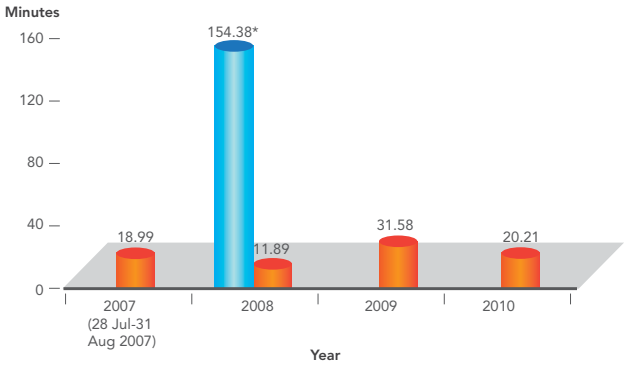


TRANSMISSION SYSTEM PERFORMANCE IN SABAH

Lack of generation capacity and reliability of existing ageing plants have caused frequent operational disruptions to the Sabah electricity supply system with load shedding incidents occuring from time to time. In 2010, there was one tripping incident reported in the Sabah grid system with a load loss of 50 MW compared to 8 incidents in 2009, a drop of 87.5%. However, the number of load shedding incidents surged to 76 incidents from 55 in 2009.

In 2010, DePUI for the grid system in Sabah declined by 36% to 20.21 minutes from 31.58 minutes in 2009.

Delivery Point Unrealibility Index (DePUI) – System Minutes for the Sabah Grid

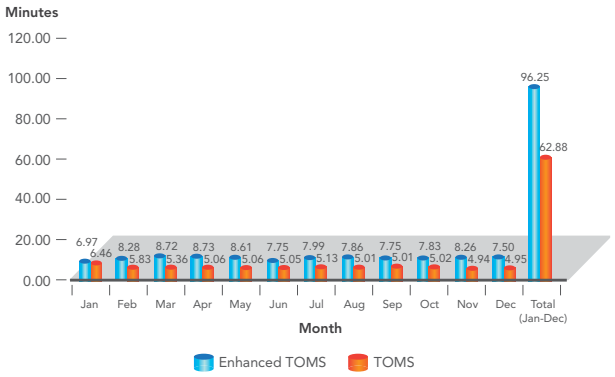


SAIDI (SYSTEM AVERAGE INTERRUPTION DURATION INDEX) FOR PENINSULAR MALAYSIA

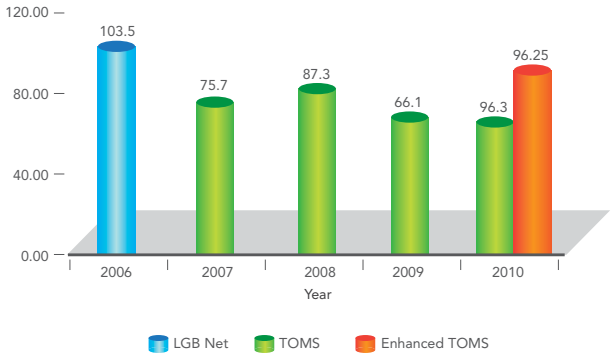
In January 2010, TNB took steps to improve the SAIDI reporting system to achieve higher accuracy by integrating the TOMS *(TNB Outage Management System), eCIBS (Electronic Customer Information System)* and *ERMS (Enterprise Resource Management System)* software. The new software is called *Enhanced TOMS* to replace the old *TOMS* system. The integration made SAIDI reporting more precise whereby the number of consumers involved in each supply disruption is taken automatically from *Enhanced TOMS* as opposed to using data estimates from the previous years.

With the new system, TNB's total SAIDI for 2010 increased by 45.7%, from 66.1 minutes/customer/year in 2009 to 96.3 minutes/customer/year. The higher SAIDI revealed that the duration of interruption in a year per customer who was affected by supply disruption has risen, indicating a lower performance from previous years. SAIDI in 2010 was higher than the target set of 60 minutes/customer/year. However, when calculated with the old software, the 2010 SAIDI was at 62.9 minutes/customer/year. Compared to the 2009 SAIDI of 66.1 minutes/customer/year, a reduction of 4.8% was achieved.

Monthly SAIDI Comparison Calculated Using the New *Enhanced TOMS* software and the old *TOMS* software for 2010



SAIDI (Minutes/Customer/Year) in Peninsular Malaysia from 2006 to 2010



STEPS TO REDUCE SAIDI OF THE MEDIUM VOLTAGE SYSTEM IN PENINSULAR MALAYSIA

The medium voltage systems is the highest contributor to SAIDI compared to low voltage systems. As part of the effort to reduce SAIDI in Peninsular Malaysia, the following measures have been implemented by TNB in 2010 especially on the medium voltage system:

a) Reducing the load of the medium voltage supply to below 50% of the supply's capability level;
b) Identifying and replacing problematic cable connections through the Partial Discharge Mapping test programme;
c) Implementing condition monitoring at the Main Distribution Substations using *infra-red thermography dan ultrasonic detection techniques;*
d) Introducing the Pre-Moulded Joint Cable connection;
e) Conducting clearing works on rentice areas;
f) Expanding the implementation of SCADA/DA *(supervisory control and data acquisition/ data acquisition)*

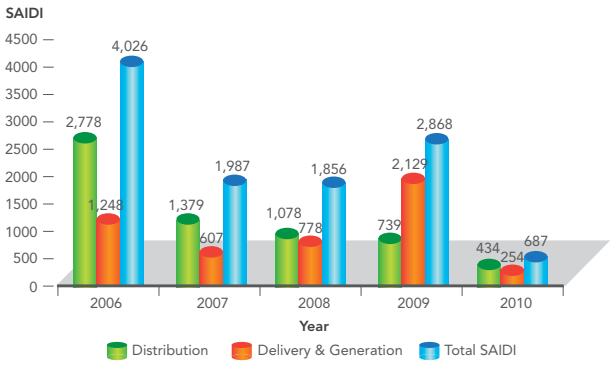
SAIDI FOR SABAH

In early 2010, the Prime Minister set a SAIDI target of 700 minutes/customer/year for Sabah. To achieve this target, RM419 million was allocated by the government to implement and upgrade the electricity supply system in Sabah in the generation, transmission and distribution sectors.

As of 31 December 2010, total SAIDI for the whole of Sabah was reduced by 76% from the level in 2009 to 687.39 minutes/customer/year. Generation SAIDI stood at 217.58 minutes/customer/year, transmission SAIDI at 36.14 minutes/customer/year and distribution SAIDI at 433.67 minutes/customer/year. SAIDI in May 2010 was the highest compared to other months at 138.0 minutes/customer/year. Meanwhile, November registered the lowest SAIDI of 23.7 minutes/customer/year.

SAIDI for the distribution system decreased by 41% from the previous year. Meanwhile, SAIDI for the generation and transmission system was also lowered by 88% in 2009.

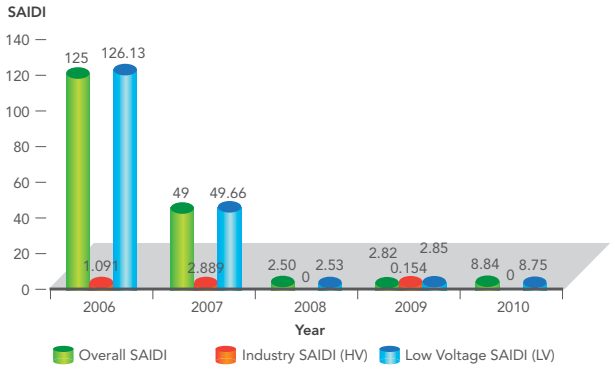
Annual SAIDI (Minutes/Customer/Year) for Sabah from 2006 to 2010



SAIDI FOR KULIM HI-TECH PARK (KHTP)

Overall SAIDI for KHTP in 2010 stood at 8.44 minutes/customer/year, higher than in 2009. The increase was due to the malfunction in NUR Distribution Sdn Bhd's internal systems in January 2010, causing an operational disruption to 12 main high-tech industrial users.

SAIDI (Minutes/Customer/Year) Breakdown for NUR Distribution from 2006 to 2010

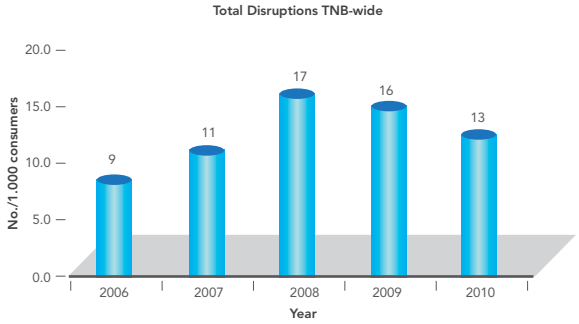


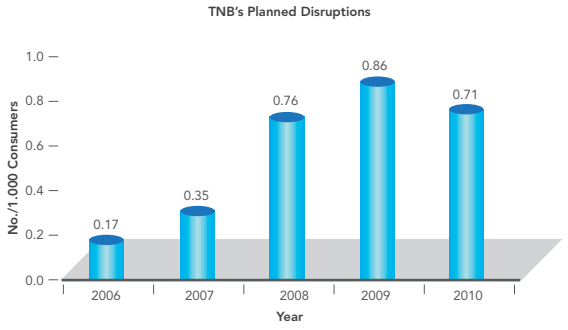
ELECTRICITY SUPPLY DISRUPTIONS IN PENINSULAR MALAYSIA

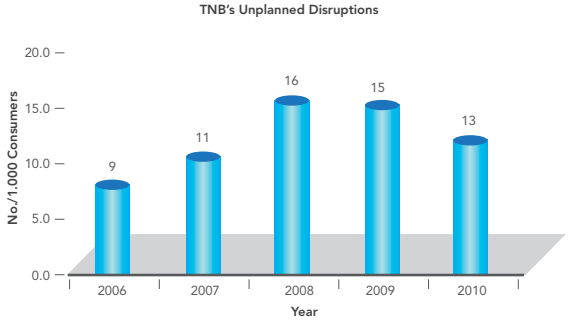
Overall, the number of electricity supply disruptions per 1,000 consumers which affected the TNB supply system in 2010 was reduced by 15.6%, to 13 disruptions from 16 disruptions in 2009.

Unplanned disruptions declined by 15.5% to 13 per 1,000 consumers, from 15 in 2009. However the percentage of unplanned disruptions was high at 94.7% compared to 5.3% for planned disruptions that occurred in 2010.

TNB Electricity Supply Disruptions –Per 1,000 Consumers From 2006 to 2010





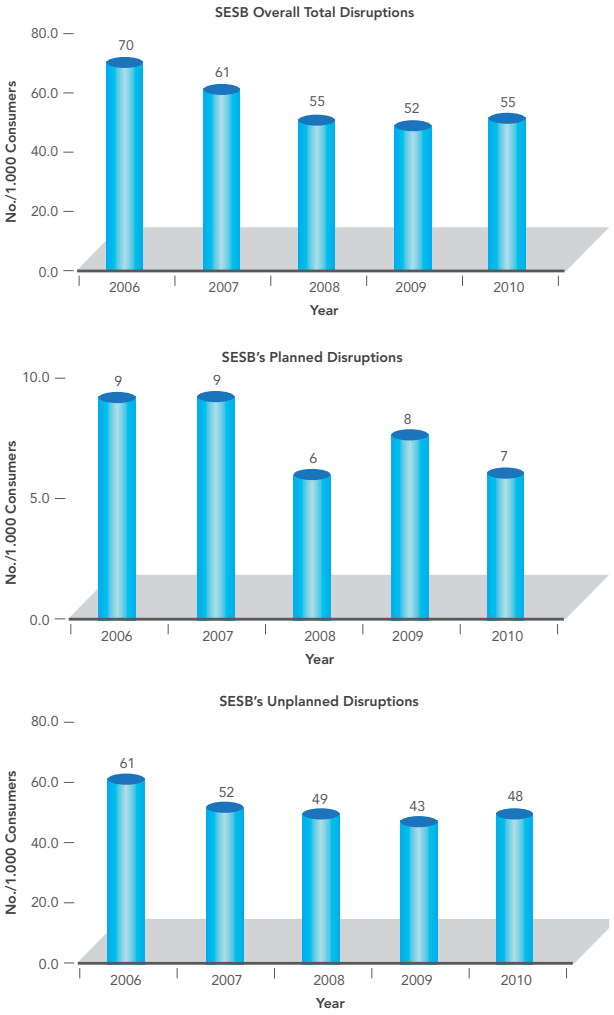


ELECTRICITY SUPPLY DISRUPTIONS IN SABAH

The number of electricity supply disruptions per 1,000 consumers in 2010 increased slightly to 55 disruptions from 52 disruptions in 2009 which affected the SESB supply system.

Unplanned disruptions represented a high percentage at 88%, as opposed to planned disruptions of only 12% in 2010. However, unplanned disruptions increased by 10.7% to 48 per 1,000 consumers, from 43 per 1,000 consumers in 2009.

SESB Electricity Supply Disruptions – Per 1,000 Consumers for 2006 to 2010



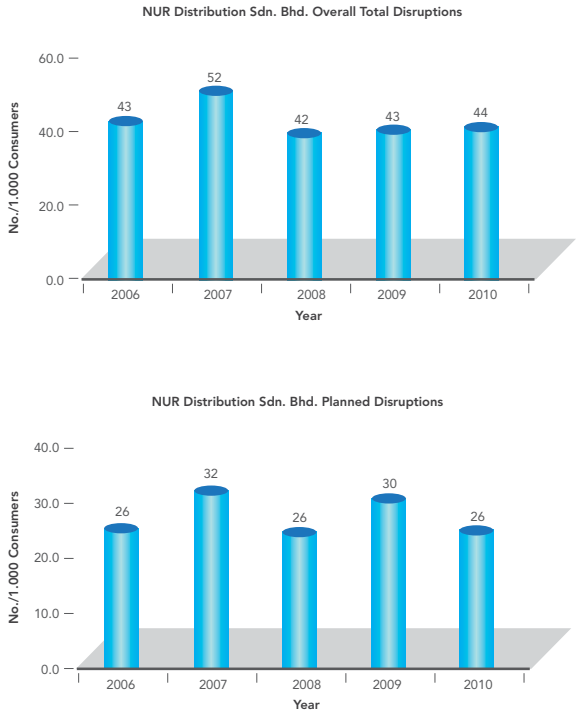
Note : Excluding disruptions to the distribution and generation systems

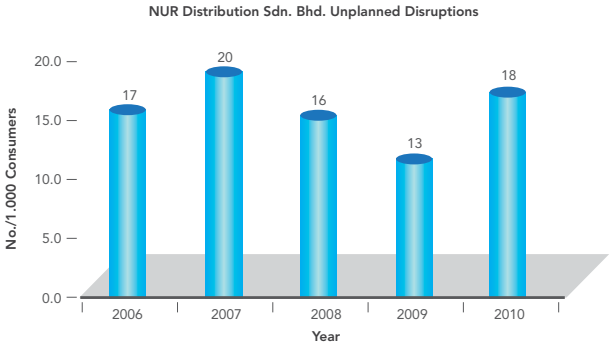
ELECTRICITY SUPPLY DISRUPTIONS IN KULIM HIGH-TECH PARK

Overall, total electricity disruptions per 1,000 consumers in Kulim Hi-Tech Park (KHTP) reported by NUR Distribution Sdn. Bhd. in 2010 rose slightly from 43 to 44 disruptions. The number of disruptions also increased slightly from the previous years.

Unplanned disruption increased by 39% to 18 per 1,000 consumers, from 13 per 1,000 consumers in 2009. However, planned disruption resulted in a high percentage at 59% compared to unplanned disruption at 41% in 2010. This showed that planned outage for maintenance work should be conducted more frequently to prevent bigger disruptions.

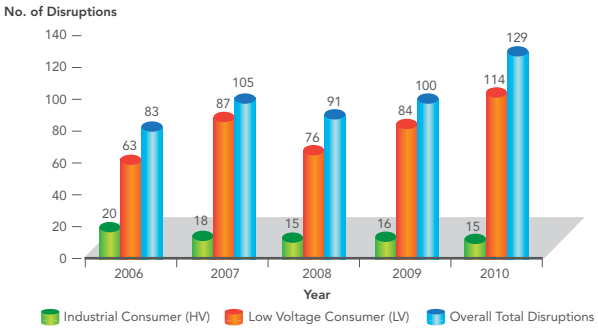
NUR Distribution Sdn Bhd Electriciy Supply Disruptions – Per 1,000 Consumers in KHTP from 2006 to 2010

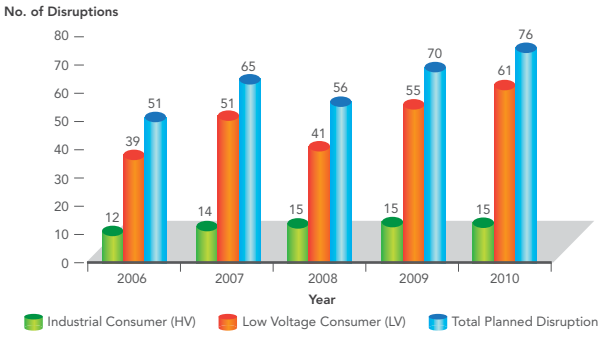


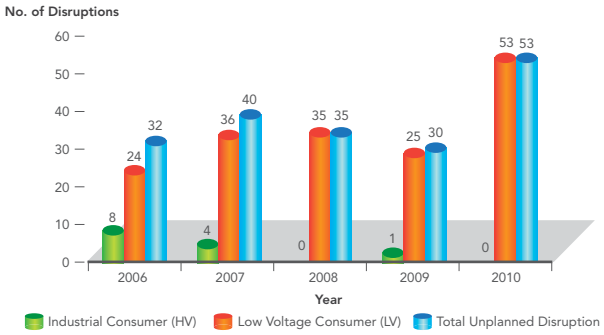


The breakdown in the number of disruptions by consumer category showed that most of the disruptions involved low voltage consumers, i.e. domestic and commercial consumers. Most industrial consumers received high voltage supply and the number of disruptions on the high voltage system was minimal.

NUR Distribution Sdn Bhd Electricity Supply Disruptions by breakdown of Consumer for 2006 to 2010







POWER QUALITY

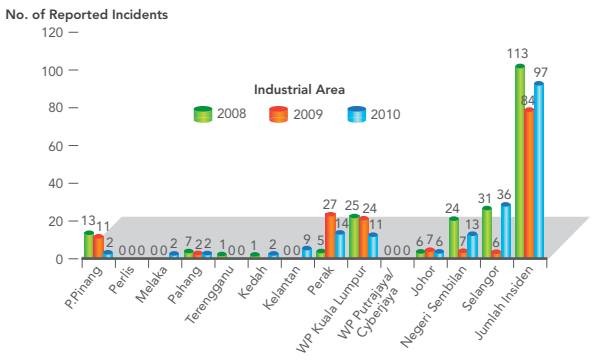
VOLTAGE DIP INCIDENTS IN THE TNB SYSTEM

The number of voltage dip incidents reported in major industrial areas in Peninsular Malaysia for 2010 did not decline. Statistics show that 97 incidents occurred in 2010 compared to 113 incidents in 2008 and 84 incidents in 2009. Selangor recorded the highest number of incidents at 36 among all the states.

The number of consumers involved in the voltage dip incidents also increased by 63.6% to 175 from 107 in 2009. Again, Selangor registered the highest total with 91 consumers affected compared to other states.

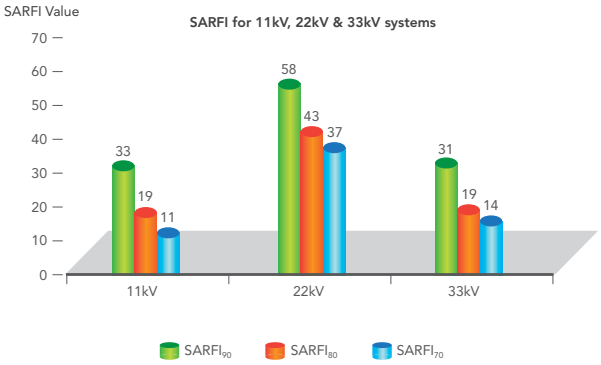
Several factors have been identified as the cause of the voltage dips including malfunction to the supply system, connection or large load switching, transmission line trip, cable damage, transient problems, lightning etc.

Voltage Dip Incidents Reported in Major Industrial Areas in Peninsular Malaysia from 2008 to 2010

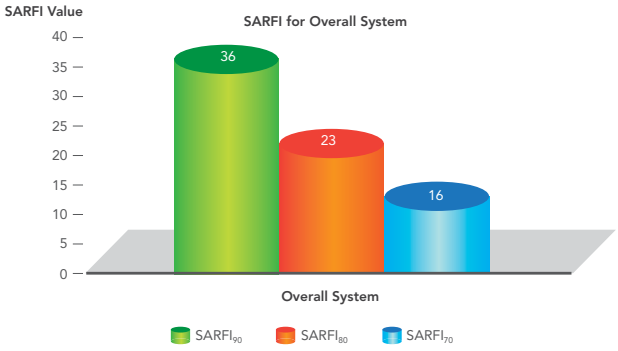


SARFI *(System Average RMS Frequency Index)* is used to record the number of voltage dip incidents, taking into account the voltage percentage value and duration of occurrence. Based on statistical analysis of voltage dip incidents recorded in 94 main substations (PMU) in Peninsular Malaysia Perlis, Perak, Johor and Kedah recorded the highest SARFI70 compared to the other states for 2010.

SARFI Comparison for the 11 kV, 22 kV and 33 kV systems in 2010 for Peninsular Malaysia



SARFI for the Overall System in 2010



The 22 kV system recorded a high number of $SARFI_{90}$ (58), $SARFI_{80}$ (43) and $SARFI_{70}$ (37) incidents compared to the 11 kV and 33 kV systems. For the overall, $SARFI_{90}$ registered the highest number of incidents at 36 compared to $SARFI_{80}$ (23 incidents) and $SARFI_{70}$ (16 incidents).

In an effort to provide customers with a better understanding of power quality, several dialogue or seminar sessions on power quality were held by TNB in several locations in Peninsular Malaysia, particularly for large power consumers. The Energy Commission was also involved in all briefings.

$SARFI_{70}$ Index Comparison and Overall Consumer Complaints

State	$SARFI_{70}$ on Voltage (kV)				Complaints
	33	22	11	All	
Kuala Lumpur	4	X	X	4	20
Putrajaya/Cyberjaya	9	X	10	9	-
Selangor	15	X	X	15	97
Johor	X	28	8	22	6
Malacca	X	X	11	11	2
Negeri Sembilan	X	X	9	9	18
Kelantan	7	X	X	7	13
Pahang	X	X	8	8	4
Terengganu	X	X	11	11	-
Kedah	27	X	16	24	2
Perak	3	60	20	23	23
Perlis	59	X	X	59	-
Penang	6	X	X	6	3

Note :
x No monitoring at that voltage level
- No incidents or complaints

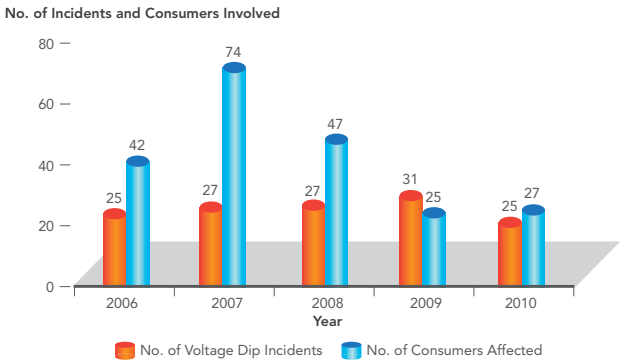
Based on the statistics of the number of customer complaints on voltage dips, Selangor reported the highest number with 97 incidents compared to the other states. For the period from January to December 2010, 39 customers from several industrial companies in Peninsular Malaysia were given power quality services by TNB, i.e. Negeri Sembilan (4), Perak (3), Johor (8), Penang (4), Selangor (13), Kedah (2), Malacca (1), Kuala Lumpur (3) and Kelantan(1).

VOLTAGE DIP INCIDENTS IN KHTP

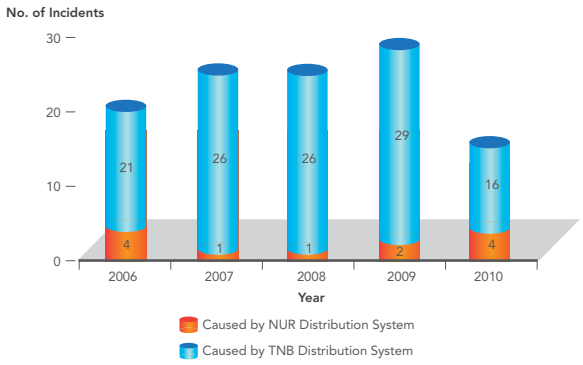
Kulim Hi-Tech Park (KHTP) is an industrial area that hosts international class companies undertaking high technology activities. In total, there are 34 companies undertaking industrial activities in KHTP. These companies have raised the issue of power quality in KHTP which they claim to be unsatisfactory, leading to operational disruptions and causing losses. NUR Distribution Sdn Bhd (Appointed Receiver and Manager) is the licenced holder responsible for supplying electricity in KHTP. To ensure dependable electricity supply, the NUR Distribution Sdn Bhd system which receives supply from Nur Generation Sdn Bhd's power plant, has also been connected to the National Grid owned by TNB.

Power quality problems such as voltage dips would cause electricity supply to be disconnected for several milliseconds and subsequently affect sensitive operations in the premises of these enterprises. Incidents such as lightning, damage to the transmission system, switching activities, third party disruptions including cable damage during digging work, were the main causes of voltage dip incidents although the incidents occur in lines or cables located far from the affected consumers.

Voltage Dip Incidents in Kulim Hi-Tech Park



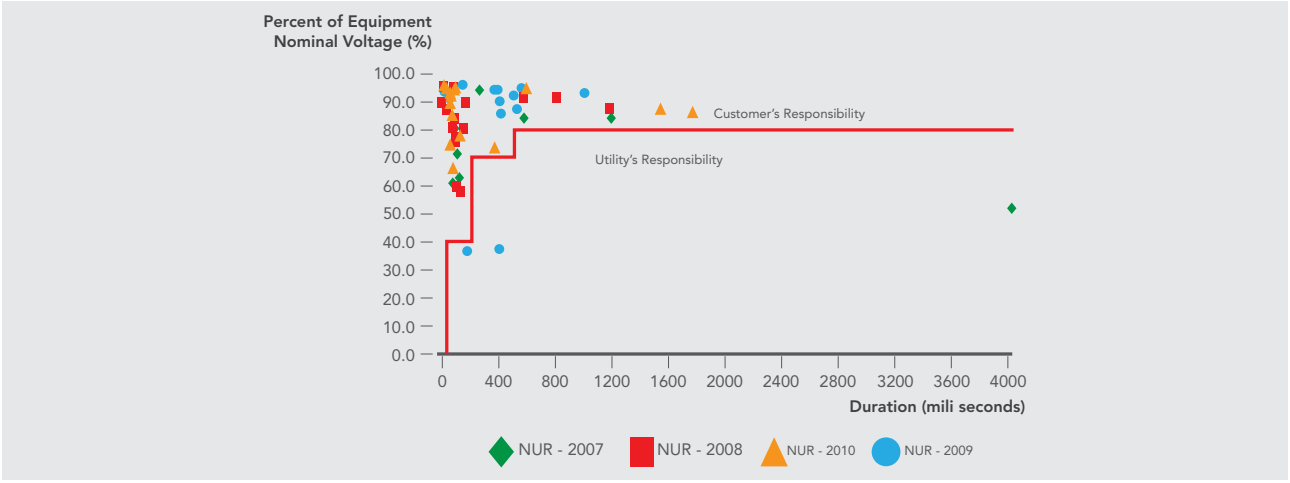
Statistics on Voltage Dip Incidents Reported That Affected Supply to Consumers from 2006 to 2010



Based on ST's observations, the number of incidents affecting supply to industrial consumers in 2010 was lower than the previous years. Based on the statistics, 27 incidents were reported in 2008, 31 incidents in 2009 and 20 incidents in 2010 respectively. The number of consumers involved in the voltage dip incidents increased slightly from 25 consumers in 2009 to 27 in 2010. The largest number of consumers affected was reported in January 2010, when 12 major high-tech industrial customers in KHTP faced disruptions. The incident was caused by a breakdown of the internal NUR system. Upon further analysis, most of the voltage dip incidents were due to the supply system or the TNB grid system which also affected the NUR Distribution Sdn Bhd distribution system in KHTP. However, in 2010, the number of voltage dip incidents due to the TNB Grid system declined from the previous year.

If these incidents are evaluated based on IEC 61000-4-11 (Class 3) standard, most of the incidents during the last four years were found to be above the curve as shown in the graph (left). A large proportion of the voltage dip incidents that occurred in 2010 was beyond the responsibility of the Utility hence consumers should ensure that their equipments used are compatible with the supply of electricity.

Breakdown of Voltage Dip Incidents in KHTP from 2007 to 2010 based on IEC 61000-4-11 (Class 3) Standard



THE SITUATION AND DEVELOPMENTS OF GAS SUPPLIES-THROUGH PIPELINES

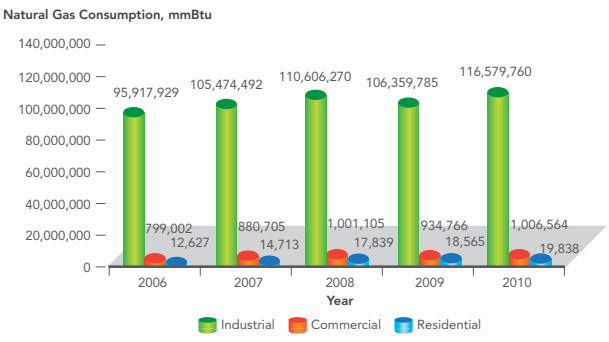
GAS SUPPLY IN PENINSULAR MALAYSIA

In 2010, the volume of natural gas supplied by the Gas Utility Licensees in Peninsular Malaysia continued to increase due to the government's decision to reallocate 100mmscfd of natural gas from the energy sector to the non-energy sector in order to fulfil industrial demand. The rise in demand was due to the natural gas tariff being far lower than the price of alternative fuels such as medium fuel oil (MFO), diesel and LPG. The average natural gas tariff stood at RM15.00/mmBtu, lower than alternative fuel prices, which are correlated to the world price of oil.

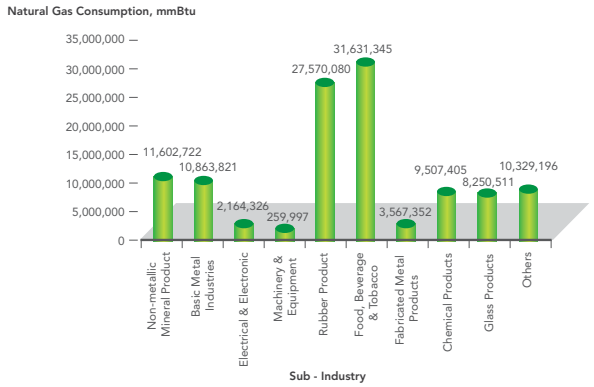
The additional natural gas supplied to the industry was for a period of 2 years and would end in December 2011. The increasewas in addition to gas quantity supplied by Petroliam Nasional Berhad to the Gas Utility Licensees totalling 300 mmscfd. The industrial sector was the main consumer of natural gas and the total consumption in 2010 increased to 116,579,760 mmBtu from 106,359,785 mmBtu in 2009.

The increase in additional natural gas supply volume did not add to the length of the gas pipeline, as the higher natural gas volume was distributed to existing consumer premises and new consumers who were located near to the existing pipelines. The increase in gas supply volume saw a rise in the number of industrial consumers in 2010 to 686 from 640 in 2009.

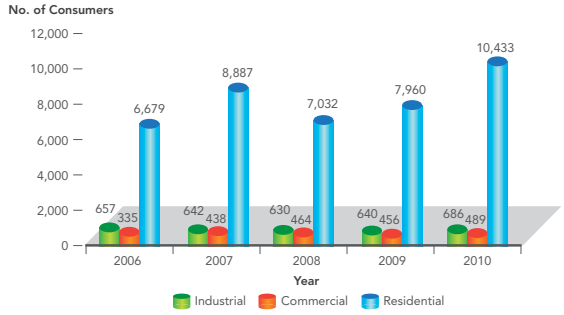
Total Natural Gas Consumption in Peninsular Malaysia



Consumption of Natural Gas Based on Sub-Industry Categories in Peninsular Malaysia



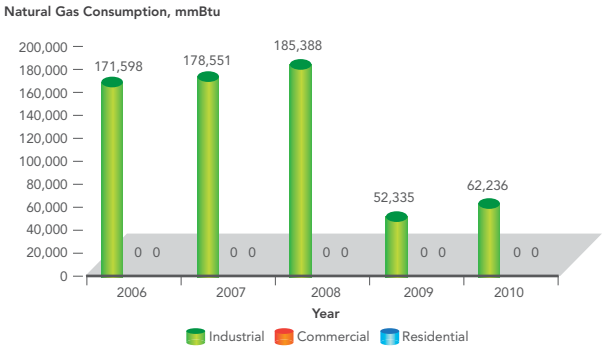
Natural Gas Consumers in Peninsular Malaysia



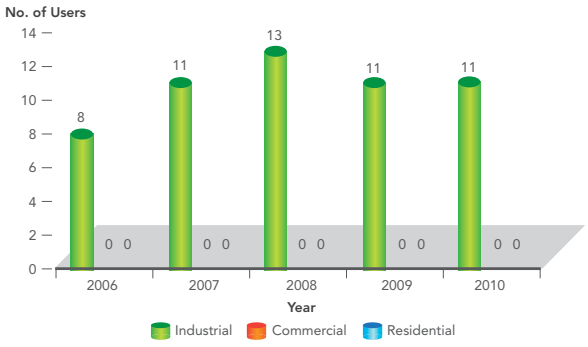
GAS SUPPLY IN SABAH AND LABUAN

The supply of natural gas in Sabah and Labuan by Sabah Energy Corp. Sdn Bhd (SEC) did not show any significant increase from the previous year due to competition from alternative fuels.

Total Natural Gas Consumption in Sabah



Natural Gas Consumers in Sabah and Labuan



SERVICE QUALITY AND SAFETY OF GAS SUPPLIED THROUGH PIPELINES

A total of 353 complaints were received by Gas Utility Licensees in 2010. The increase in the number of complaints was due to the rise in the number of industrial, commercial and residential gas consumers. Complaints received were divided into two categories namely supply disruption and leakage.

The majority of complaints related to gas supply disruptions at the consumer's premise were due to shut valves, malfunctioning meters or pressure regulators. The licensee took immediate action to rectify the situation within the stipulated period in the Client Charter. Meanwhile, complaints relating to gas supply leakage were due to pipe connection especially at the union connection, meter and pressure regulator. All leakage complaints reported were for small leakages occurring at consumer premises and were rectified immediately by the licensees.

Complaints Received by Gas Utility Licensees

Pipeline System	Supply Disruptions			Leakages			Total
	Industrial	Commercial	Residential	Industrial	Commercial	Residential	
Natural Gas	5	4	28	33	7	17	94
LPG	-	17	60	-	18	164	259
Total	5	21	88	33	25	181	353

The overall supply stability and safety performance by gas utility licensees is highlighted in the table below. To improve performance, gas utility licensees have taken further action by increasing checks and maintenance on the natural gas pipeline system and LPG. Subsequently, licensees have also identified and implemented more effective preventive steps to increase public awareness on the safety of piped gas supply. Among the steps taken include organising safety awareness programmes for local authorities and utility contractors. Also, the ST has increased monitoring activities and awareness campaigns involving targeted groups.

Performance Indicator	Unit	Index 2010
SAIDI	minutes/customer	0.6299
SAIFI	disruptions/customer	0.0037
CAIDI	minutes/disruption	169.27
Leakage throughout the gas pipeline per 1000km	no. of leakage/1000km	7.2343
Leakage at the station and consumer premises per 1000 customers	no. of leakage /1000 customers	6.7983

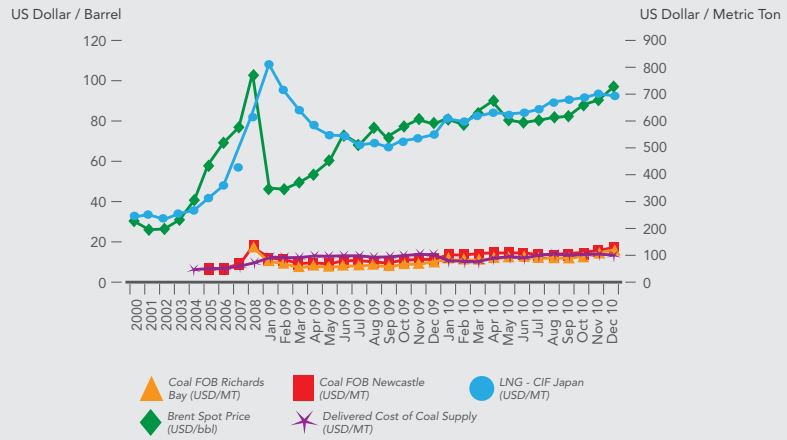
Note:
SAIDI : Supply Average Interruption Duration Index
SAIFI : Supply Average Interruption Frequency Index
CAIDI : Customer Average Interruption Frequency Index

WORLD FUEL PRICE MOVEMENTS

OIL AND COAL PRICE MOVEMENTS

The international benchmark indicator, Brent Spot Price, has recorded more stable levels in 2010 i.e from USD75 to USD85 per barrel compared to the volatile prices seen in 2008 and 2009. Consequently, the prices of other fuels such as Medium Fuel Oil (MFO) and coal also had similar movements as shown in the graph below.

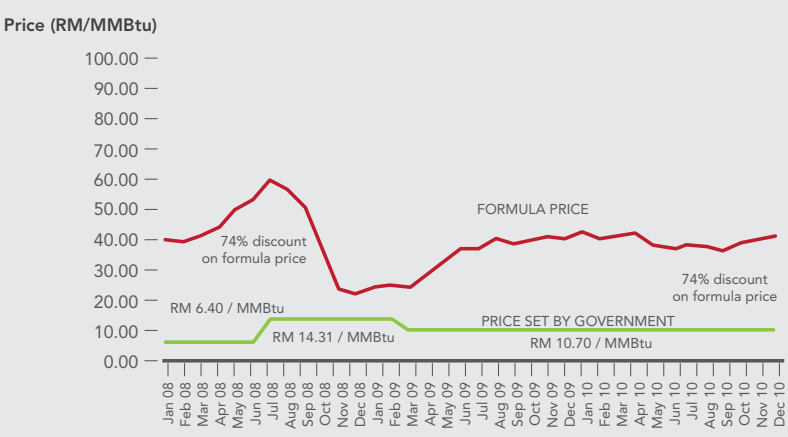
Average World Fuel Prices



DIFFERENCE BETWEEN THE GAS PRICE BASED ON CALCULATED FORMULA AND THE PRICE OF GAS SET BY THE GOVERNMENT

The last electricity tariff adjustment was in March 2009, when the average electricity tariff rate in Peninsular Malaysia was adjusted from 32.50 sen/kWh to 31.31 sen/kWh, i.e. a decrease of 3.7%. Although it was proposed that the electricity tariff should be reviewed every 6 months, this was not implemented as the Government undertook to give huge subsidies on the price of natural gas to maintain the electricity tariff in order not to burden the people. As of December 2010, the Government provided a discount of 74% on the gas price to the power generation sector to enable the electricity tariff to be maintained at 31.31 sen/kWh.

Gas Price for the Energy Sector



NATURAL GAS TARIFF AND LPG PRICE

The world price of crude oil trended upwards and reached USD89.15/bbl in December 2010 and indirectly led to an increase in the price of natural gas and liquefied natural gas (LPG) in Malaysia. However, the plan to review the natural gas price every 6 months, namely in September 2009, March 2010 and September 2010 was postponed by the government. Hence, the average natural gas tariff for consumers of natural gas supplied by the Gas Utility Licensees in Peninsular Malaysia was maintained at RM15.00/mmBtu throughout 2010.

Meanwhile, the price of natural gas supplied by Gas Utility Licensees in Sabah and Labuan was based on the agreement signed by licensees and consumers.

LPG price for the housing sector supplied by the gas utility licensees were divided into two categories where the LPG price for low cost housing premises was set at the same level as the 12kg or 14 kg LPG cylinder subsidy provided by the government. On the other hand, LPG price for medium cost and high end homes was based on market prices.

Natural Gas Tarrif in Peninsula Malaysia

Tariff Category	Gas Consumption Range (mmBtu/year)	Tariff (RM/mmBtu)
A - Housing	-	18.22
B - Commercial	0-600	19.24
C - Commercial and Industry	601-5,000	13.05
D - Commercial and Industry	5,001-50,000	13.64
E - Commercial and Industry	50,001-200,000	15.00
F - Commercial and Industry	200,001-750,000	15.00
L - Industry	750,000 and above	15.35

ELECTRICITY AND GAS TARIFF STRUCTURE REVIEW FOR PENINSULAR MALAYSIA AND SABAH

As a response to the proposal submitted by TNB and Sabah Electricity Sdn Bhd (SESB) to the government for a review of electricity tariff, the Energy Commission took several initiatives to rationalise and balance the tariff proposal. The main objective is to set the electricity tariff at a reasonable and fair level for consumers and at the same time provide reasonable profits for the utilities. To help undertake the study, the Energy Commission engaged the services of a consulting firm, SAHA International Limited (now known as *Deloitte Touche Tohmatsu*) from Australia to review and to evaluate the proposal. The review began in October 2009 and ended in March 2010. The main aim of the study was to achieve the following objectives:

a) Review the proposal for tariff revision submitted by TNB, SESB and Gas Malaysia Sdn Bhd (GMSB);
b) Develop an electricity and piped gas tariff structure which is cost reflective, efficient, transparent and realistic for implementation;
c) Review the economic regulation framework and propose steps to strengthen it; and
d) Prepare policy guidelines towards a more effective economic regulation regime.

Among the important aspects of this study was capacity building. With regard to this, a series of workshops was conducted throughout 2010 on the following topics:

- *Workshop on Economic Regulation Principles*
- *Workshop on Economic Regulation for Senior Managers*
- *Workshop on Regulation in Practice*
- *Stakeholder Workshop on Economic Regulation*
- *Workshop on Generation*
- *Workshop on Weighted Average Cost of Capital (WACC)*
- *Workshop on Modelling the Revenue Requirement*
- *Workshop on Tariff Setting and Structure*

Roof Light Trough
The light trough in the 7th floor of the ST Diamond Building gives the lounge area a unique ambience. The indirect daylight drawn from the roof channeled to the lounge area below makes it bright as though being lighted.

ENSURING A SECURE ENERGY SUPPLY

ELECTRICITY SUPPLY PLAN IN PENINSULAR MALAYSIA

The planning to ensure an adequate energy supply to fulfil demand until year 2030 has been entrusted to the Electricity Supply and Tariff Planning and Implementation Working Committee (JPPPET) which was chaired by the ST's gradually.

The Plan was drawn up to ensure there is adequate energy supply to fulfil the demand for the country up to 2030. In 2010, there were two JPPPET meetings, which were chaired by the Minister, and they were held in May and December. The following decisions were made at the meetings:

- Based on the projected electricity demand on November 2010, additional generation capacity of 7,372MW is needed for 2015 to 2020 while additional capacity of 15,724MW would be required from 2021 to 2030;

- Electricity demand was updated by taking into account the annual Gross Domestic Product growth projection of 5.5 – 6.0 % during the period of the Tenth Malaysia Plan. A comparison of the GDP growth rate and the maximum electricity demand as indicated at the JPPPET meeting is shown in the table below:

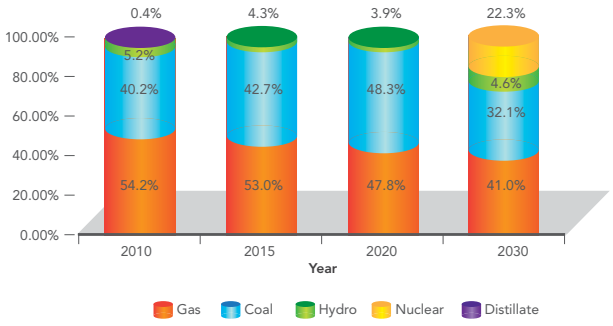
Comparison of GDP and Maximum Electricity Demand Growth Rates

Period	*Compounded Average Growth Rate - Gross Domestic Product (% per year)*		*Compounded Average Growth Rate - Maximum Demand (% per year)*	
	April 2010 Projection (JPPPET 1/2010)	Nov 2010 Projection (JPPPET 2/2010)	April 2010 Projection (JPPPET 1/2010)	Nov 2010 Projection
2010-2015	4.2	(JPPPET 2/2010)	3.3	(JPPPET 2/2010
2010-2020	4.6	5.2	3.2	3.5
2010-2030	4.7	5.7	2.6	2.7

Additional Generation Capacity till 2020

Year	Additional Generation Capacity	
2015	Hulu Terengganu (Hydro)	250MW
	1 Coal Power Plant	1,000MW
2016	Ulu Jelai (Hydro)	372MW
	1 Coal Power Plant	1,000MW
2017	2 CCGT	1,500MW
2018	2 CCGT	1,500MW
2019	1 CCGT	750MW
2020	1 Coal Power Plant	1,000MW
Total		**7,372MW**

Generation Mix Forecast in Peninsular Malaysia from 2010 to 2030



- After 2020, new gas, hydro and nuclear fuelled plants would be needed to fulfil demand. Nuclear power generation with a capacity of 2,000 MW is required by 2021 and additional capacities of 1,000MW will be required in 2024, 2029 and 2030;

- The generation mix projection based on the approved generation plan show that by 2020, gas and coal would be the two main fuel for the country's generation sector. This is based on the assumption that:

    - The supply of gas to the electricity sector is set at the rate of 1250 mmscfd from 2010 to 2011 and at 1350 mmscfd from 2012 to 2018 with gas prices pegged at market rates, starting from the year 2015;

    - Part of the gas capacity will be fulfilled with the extension of the TNB and IPP agreement which ends in 2014. The agreement will be extended for 5 - 10 years after taking into consideration the ongoing renegotiation of the PPAs with first generation IPPs and the study to extend the lifespan of TNB power plants;

    - Electricity supply from Sarawak will not be distributed to Peninsular Malaysia and will be replaced with the construction of coal power plants in 2015 and 2016; and

    - The Hulu Terengganu hydroelectric plant and the Janamanjung 4 (1000MW) coal power plant will commence operations in 2015, while the Ulu Jelai hydroelectric plant and a second coal power plant (1000MW) will commence operations in 2016.

PLANNING ISSUES

The capacity planning analysis for Peninsular Malaysia conducted by ST has taken into consideration the increased generation capacity requirements, current reserve margin, electricity demand growth projections, availability of fuel sources, the increase in the cost of fuel, retirement of power plants, optimum generation mix and other issues. Presently, the planned national fuel mix should consider the long term sustainability of the country's natural resources. In this regard, a fuel mix policy plan should be developed to look into the following supply security issues:

- Volatility of fuel markets including oil, gas and coal;
- Overdependence on gas as a fuel source that would lead to the country's depletion in gas reserves; and
- Reducing the risk of dependence on imported fuel sources which could compromise the integrity of the electricity supply system due to disruptions in fuel supply.

To address these issues, a special committee chaired by MEGTW, with members from the Economic Planning Unit, ST, MyPower, PETRONAS and TNB had been established to commission a study on the electricity generation fuel mix in Malaysia and propose a suitable fuel mix model.

ELECTRICITY SUPPLY PLAN IN SABAH

In Sabah, as in previous years, inadequate electricity supply was still a major issue. The system reserve margin cannot be taken as a benchmark due to the low availability and dependability of some plants, especially the ageing diesel fuelled plants.

Currently, electricity supply in Sabah, especially in the East Coast of Sabah, still depends on ageing diesel power plants which are unreliable. The insufficient supply situation has led to other plants not being able to undergo scheduled maintenance and this has caused a negative effect on the performance and dependability of these stations, including high outages and low available capacities compared to their dependable capacities.

Overview of the Sabah Supply Situation

	West Coast	East Coast	Total
Peak Demand (MW)	510	259	769
Dependable Capacity (MW)	738	363	1101
Reserve Margin (%)	44.7	40.1	43.2
Available Capacity (MW)	588	299	887
Operations Reserve (%)	15.3	15.4	15.3

Note : Data recorded on September 1, 2010

Based on the analysis by the ST after taking into account on the performance of ageing diesel power plants, there is a need to increase generation capacity from 2010 to 2012 for all new generation projects except for the Ranhill Powertron project, which will only commence operations in 2013.

The following are some of the short term measures to be taken by 2012, 2013 and 2015 to prevent insufficient generation capacity:

- The relocation of the TNB owned gas power plant in Teluk Ewa with a capacity of 64MW to the East of Sabah. The plant is expected to begin operations in 2012, depending on price viability;
- Postponing the operational expiry of SESB owned power plants with a total capacity of 45MW in the West of Sabah until the SPR and Kimanis Power plants begin operations in 2014;
- Maintaining the mobile generator sets in the West and East of Sabah, and also temporary generation units in Sutera Harbour with a capacity of 20 MW, until the year 2014;
- Delaying the expiry date of diesel power plants owned by SESB with a total capacity of 125MW in the East Coast of Sabah until the coal power plant with a capacity of 300MW, commences operations in 2016; and
- Additional capacity of 73MW would be required by 2013, and capacity could be sourced from the Lahad Datu Biomass SREP (40MW) or by installing mobile generators via rental or buy back schemes.

List of Approved Generation Projects

No.	Project	Capacity	Target Year
1.	Ranhill Powetron II Power Plant project	190MW	2010-2011
2.	SPR Energy Power Plant project	100MW	2013
3.	Kimanis Power Plant project	300MW	2013-2014
4.	Coal Power Plant project	300MW	2015-2016
5.	Upper Padas Hydro Electric Power Plant project	150MW	2018
6.	Tenom Pangi Hydro Electric power plant project	26MW	2019

STRENGTHENING THE EAST COAST GRID

Apart from power generation projects, Sabah's East Coast and West Coast Grids had to be strengthened to ensure that the electricity supply from the new power plants can be distributed to underserved areas. In addition, the construction of the 275kV South Grid from Kimanis to Kalumpang, totalling 410km, is necessary to enhance the stability of the distribution system from the West Coast to the East Coast of Sabah, especially with the addition of a new energy source from Upper Padas and Sarawak.

THE FAILURE OF THE COAL FUELLED PLANT PROJECT IN THE EAST COAST OF SABAH TO OBTAIN EIA APPROVAL

The failure of Lahad Datu Energy (LDE) to obtain the Environmental Impact Assessment (EIA) approval for a 300 MW coal power plant project had caused uncertainty in the status of the project, including the date of commercial operations. Subsequently, LDE has been asked to revise and resubmit their report by adhering to additional conditions set by the Department of Environment, including a study on the 100km high voltage delivery line. Due to the delay, LDE could not issue a Notice To Proceed (NTP) to its EPC contractors on August 31, 2010 according to schedule. Based on the new timeline of the LDE project, the commencement date of commercial operations of the first 75MW unit is expected to be delayed to June 2015 from March 2013 in the earlier plan. Following the protest faced by the coal power plant project, the Government is studying other viable alternatives to be implemented including using Renewable Energy which includes solar, hydroelectricity, biomass and geothermal energy.

LIWAGU HYDROELECTRIC PROJECT

Other than the two approved hydroelectric projects in Upper Padas and Tenom Pangi, a feasibility study on the Liwagu Hydroelectric project has also been conducted.

Based on the Social Impact Study undertaken by ST, there were problems in resolving issues related to the relocation of people in 8 villages who refused to move to other areas. Thus, to minimise relocation of residents, ST will conduct socioeconomic studies to determine whether the development of the Liwagu hydroelectric plant through the run-of-river method can be implemented in the area as opposed to the earlier proposal of building a dam.

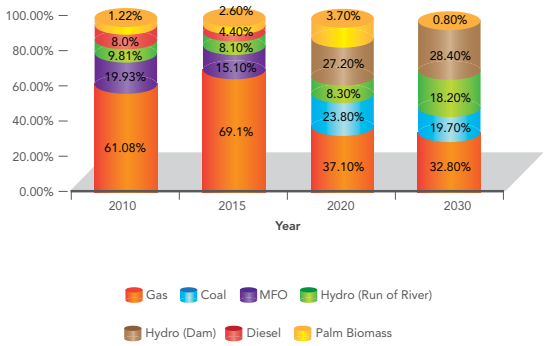
THE OPTION OF HYDRO SOURCES FROM LIMBANG, LAWAS AND TRUSAN

This option requires further study in view of the information from the Sarawak Ministry of Public Amenities (KKAS) showing that the electricity generated from Limbang is insufficient for distribution in Sabah.

GENERATION MIX PROJECTION IN SABAH

By 2020, gas, coal and hydro will be the main sources of fuel for power generation in Sabah while the use of diesel and MFO will be discontinued.

Generation Mix Projection in Sabah from 2010 to 2030



ALTERNATIVE GENERATION OPTIONS

Alternative generation options should be considered to offset the shortfall in generation capacity from 2014 to 2017 due to the delay faced by the 300 MW coal power plant project in Felda Sahabat. Among the power generation options being considered by ST to enhance generation capacity, especially in the East Coast of Sabah, include:

i. The 40 MW power generation project fuelled by biomass and biogas from the oil palm industry in 3 locations i.e. Kinabatangan (20MW), Kunak (10MW) and Lahad Datu (10MW) in 2015;

ii. Geothermal project in Apas Kiri, Tawau with a capacity of 60MW;

iii. HFO/bio-oil power plant using the reciprocating engine with a capacity of 210MW (2 x7x15MW);

iv. Sodium sulphur (NaS) battery system; and

v. Development of a gas based combined cycle power plant with the supply of natural gas or LNG to the East Coast of Sabah.

PROGRESS OF POWER GENERATION PROJECTS

The progress of a planned power plant project within the generation development plan is monitored via project progress reports. The progress report is submitted by the parties developing the power plant project. The list of proposed new power generation projects in the generation development plan are as follows:-

List of New Power Generation Projects

No.	Project Name	Capacity	Type/Fuel	Target Year
1.	Hulu Terengganu Hydroelectric Project, Terengganu	250 MW	Hydro	2015
2.	Ulu Jelai Hydroelectric Project, Pahang	372 MW	Hydro	2016
3.	Coal Power Plant Project, Janamanjung	1,000 MW	Coal	2015
4.	SPR Energy	100 MW	Gas	2013
5.	Kimanis Power	300 MW	Gas	2013 - 2014
6.	New Coal Power Plant Projects (via competitive bidding process)	1,000 MW	Coal	2016

In early 2010, the project to supply electricity from Bakun, Sarawak to Peninsula Malaysia with a capacity of 1600MW could not proceed as planned. Instead, the electricity generated from the Bakun hydroelectric plant was utilised to develop the ***Sarawak Corridor on Renewable Energy (SCORE)*** project at the request of the Sarawak State Government. Subsequently, a new coal power plant will have to be developed to fulfil the capacity requirements due to insufficient gas supply. The development of the first coal power plant with a capacity of 1x1000MW has been awarded to TNB and its operations will commence in 2015. Meanwhile, the project developer for the second unit of the coal power plant which is expected to begin operation in 2016 will be selected through a competitive bidding process whereby bidding shall be opened only to the owners of existing coal power plants (brownfield site) i.e. Malakoff Corporation Berhad and Jimah Energy Ventures.

CURTAILMENT OF GAS SUPPLY TO THE GENERATION SECTOR

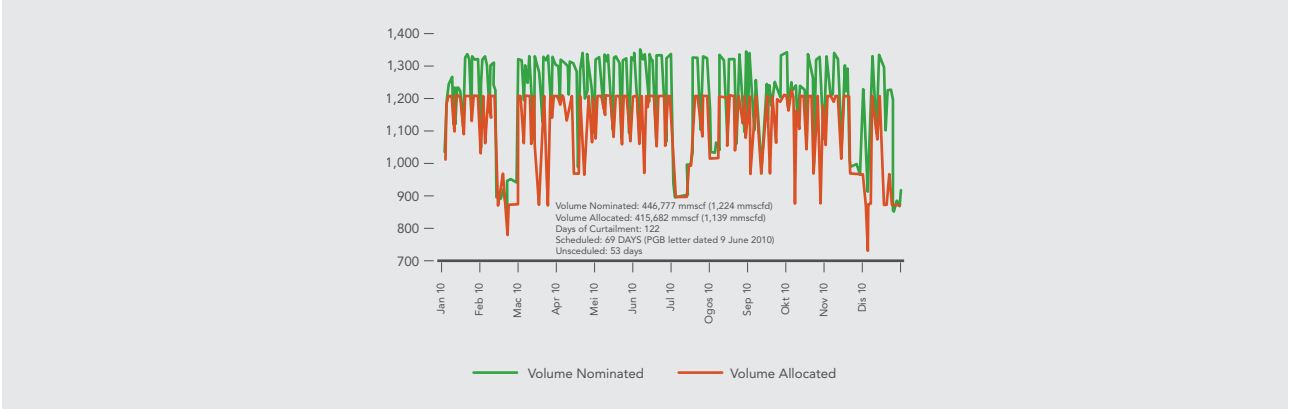
Throughout 2010, the energy sector received an average gas supply of 1,139 mmscfd from PETRONAS compared to TNB's daily demand requirement of 1,224 mmscfd. The average demand requirement for 2009 stood at 1,224 mmscfd compared to 1,270 mmscfd in 2008. The decline in gas distribution from PETRONAS was due to the increase in the number of curtailment days from 102 in 2009 to 122 in 2010. Out of that total, 69 days were scheduled curtailment days while the rest were unscheduled.

Meanwhile, at the end of 2010, the supply of gas from PETRONAS was further hampered when the Bekok C platform caught fire on December 14 2010, causing the loss of 160 mmscfd liquefied gas for the energy sector. The actual production of Bekok C was only at 47 mmscfd, but it was the hub for the Tiong A, Guntong A and Bekok A platforms (gas production platforms). The fire that damaged 6 major areas on the platform forced PETRONAS to use swing gas to fulfil the demand of the energy sector. Bekok C was expected to resume its operations in late 2011. Supply from platform Tiong A, Guntong A and Bekok A totalling 100 mmscfd wass expected to be reconnected when the work to bypass Bekok C was completed in June 2011.

Gas Distribution

Gas Demand Requirement Average Volume	1,224 mmscfd
Average Distributed Gas Volume	1,139 mmscfd
Total Nominated Volume	446,777 mmscf
Total Distributed Volume	415,682 mmscf
Total Production (Kerteh and JDA)	766,353 mmscf
JDA Average Production	326 mmscfd
Kerteh Average Production	1,774 mmscfd
Total Curtailment Days	122

Generation Sector Gas Supply: Nominated vs Allocated



GAS SUPPLY TO THE GENERATION SECTOR

Gas requirement for the electricity supply sector was set at 1250 mmscfd till 2011, and will be increased to 1350 mmscfd from 2012 to 2018. The liberalisation of the gas market will be implemented by PETRONAS from 2015 to accommodate the decline in gas supply from local fields by setting the gas price at market rates from 2015. Through this method, third party access will be allowed whereby gas suppliers other than PETRONAS can bring in gas to consumers in Peninsular Malaysia. After 2018, the amount of gas to be supplied by PETRONAS to the electricity sector has not been finalised as it depends on its current efforts to locate sources of gas supply.

Domestic gas sources is depleting and currently, 26% of the Peninsular Malaysia gas supply is imported from Indonesia, Vietnam and Thailand. PETRONAS also plans to import liquefied natural gas (LNG) from foreign countries at international market prices, including LNG from Australia beginning 2015. If gas prices are set at market rates, PETRONAS is expected to be able to import more gas and LNG which will ensure sufficient gas supply to the electricity generation and industrial sectors.

FEASIBILITY STUDY OF THE PIPED GAS SYSTEM IN SABAH

As a result of the cancellation of the 300MW coal-fired power plant in Lahad Datu due to protests by various parties especially Non Governmental Organisations, ST has proposed that a combined cycle 300MW power plant serves as a replacement.

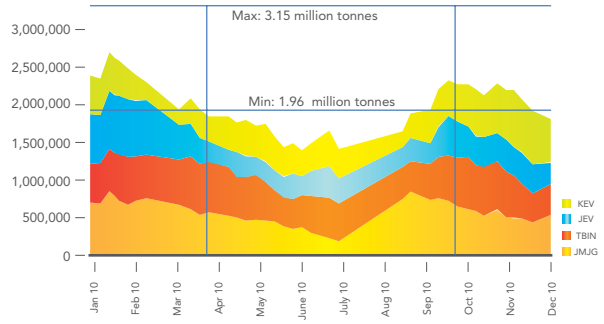
ST has proposed that a gas pipeline be constructed from Kimanis to Sandakan for the purpose of supplying the gas. ST has also analysed various aspects of the construction of a gas pipeline from the economic and technical perspective which includes investment cost and tariff comparison, demand for electricity and gas in the long run, and its effect on the environment.

The proposal was presented at the Energy Commission Meeting and approval will depend on the willingness of PETRONAS to implement it. Also, the Commission has met with representatives of PETRONAS and was informed that Sabah is facing gas supply curtailment.

COAL SUPPLY FOR THE GENERATION SECTOR

The instability of gas supply from PETRONAS has forced the coal units to operate at a high level and this had impacted average stock throughout the year. The level of overall coal stock for Peninsular Malaysia was below the minimum stipulated in the PPA between April and October, a period of high energy demand.

Level of Coal Stock in Coal Power Plants in Peninsula Malaysia



Almost 19 million metric tonnes of coal for coal fuelled power plants in Peninsular Malaysia is imported from overseas. Out of that total, Indonesia is the highest contributor supplying 76.7% followed by South Africa at 12.3% and Australia at 11.0%

In 2010, the generation sector faced a coal supply crisis when there was major flooding in Queensland in December. The Queensland region fulfils demand for global thermal coal at 60 million metric tonnes annually and the supply disruption from the region caused the spot price to increase 17% to almost USD 130/per tonne. Several mine and rail operators had to declare *force majeure*. The Kalimantan region was also affected by bad weather and flooding in mine areas and haulage routes. The impact from weather problems in both regions were also felt in Peninsular Malaysia, as supplies could not be delivered on time and almost led to zero stock at the Tanjung Bin Plant.

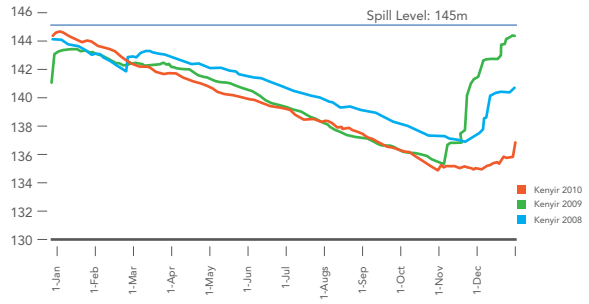
Coal Supplying Countries for Coal Power Plants in Peninsula Malaysia

Station	Indonesia (metric tonnes)	Australia (metric tonnes)	South Africa (metric tonnes)	Total (metric tonnes)
Kapar	978,420	1,068,110	854,920	2,901,450
Manjung	6,367,472	-	403,694	6,771,166
Tanjung Bin	4,422,825	1,014,340	643,079	6,080,244
Jimah	2,705,977	-	414,070	3,120,047
Total	**14,474,694**	**2,082,450**	**2,315,763**	**18,872,907**

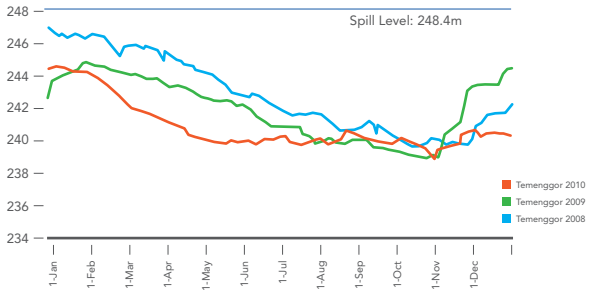
HYDRO SUPPLY FOR THE GENERATION SECTOR

The lake level at the main hydroelectric plants in Kenyir and Temenggor showed similar trends as previous years. As usual, the water level rose at the start and the end of the year, coinciding with the rainy season. However, the impact of shortages in gas and coal supply resulted in increased electricity generated using hydro power. This caused a sudden reduction in the lake level in 2010. The lack of rainfall in the catchment areas of both the Kenyir and Temenggor dams also affected the lake level which reached its lowest since 2008.

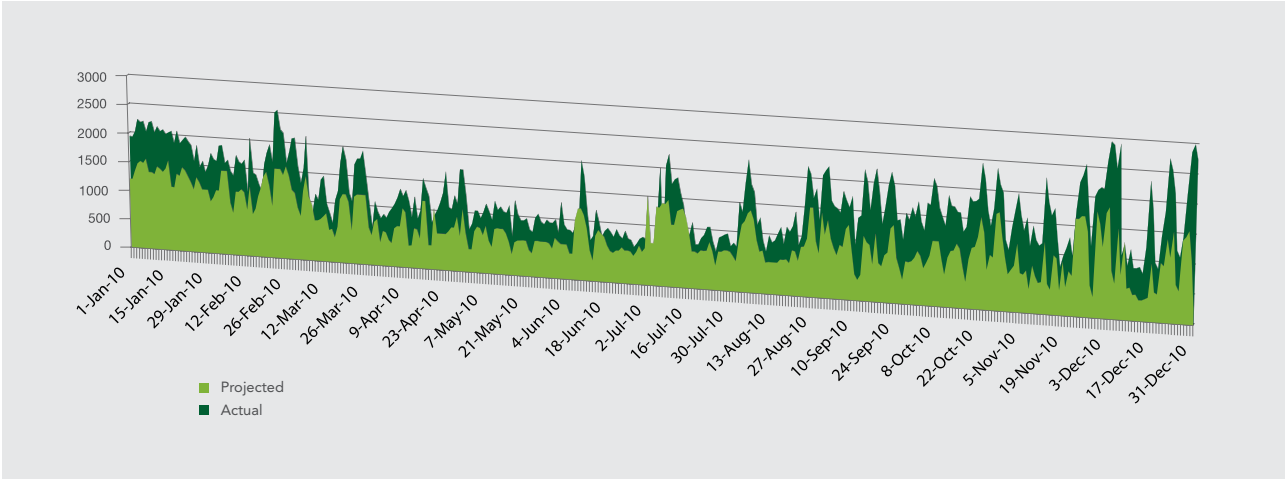
Lake Level at the Kenyir Hydroelectric Dam 2008–2010



Lake Level at the Temenggor Hydroelectric Dam 2008 – 2010



Hydro Supply: Projection Vs Actual Despatch



EXTENDING THE LIFESPAN OF CURRENT PLANTS

The extension of the concession period for the five first generation Independent Power Plants (IPP), including the decision to switch the Powertek and PD Power plants to combined cycle, depends on the PPA renegotiation between MyPower, KeTTHA and ST. The following are the five first generation IPPs which have a combined capacity of 4105 MW:

- YTL Power Generation Sdn. Bhd. (1170 MW)
- Genting Sanyen Power Sdn. Bhd. (762 MW)
- Segari Energy Ventures Sdn. Bhd. (1303 MW)
- Port Dickson Power Bhd. (436 MW)
- Powertek Bhd. (434 MW)

The extension of the period of operation for TNB owned power plants and the development of new power plants including the option to use the 220MW gas turbine owned by TNB that is currently not utilised, will contribute an additional capacity of 3750 MW up to 2020. However, the extension of TNB owned power plants is subject to detailed studies on the lifespan of the plants.

DEVELOPMENT OF RENEWABLE ENERGY

SECRETARIAT OF THE SMALL RENEWABLE ENERGY PROGRAMME-SREP

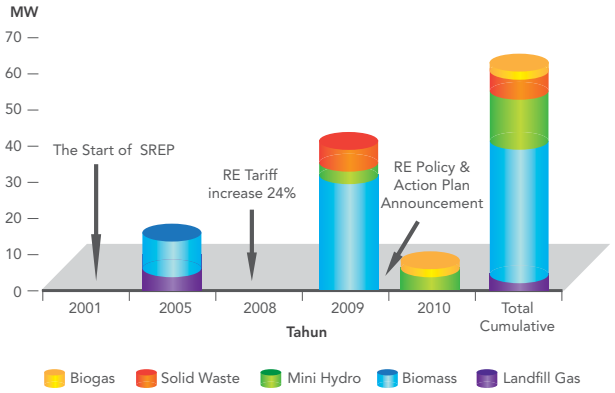
ST is responsible for promoting the development and streamlining the implementation of SREP projects apart from conducting technical and financial evaluation of SREP applications that are submitted to them. Subsequently, it presents the proposal to the Special Committee on Renewable Energy (SCORE) for approval.
The following are the achievements of the SREP Programme in 2010:

- Two SREP projects with a total grid connected capacity of 6.2 MW have been commissioned and operational in 2010, i.e. a biogas project (1.7 MW) and a mini-hydro project (4.5 MW).
- The total number of SREP projects operational up to the end of 2010 stood at 11 with a grid connected capacity of 61.2 MW
- Throughout 2010, a total of 4 new projects with a capacity of 37 MW obtained SCORE's approval.

Overall statistics of SREP projects by fuel sources for 2010

No.	Fuel Source		No. of Approved Projects	Capacity to Grid (MW)	Status
1	Biomass	Empty Fruit Bunch (EFB)	18	178	4 projects with a total capacity of 40MW were operational
		Wood Waste	1	5	Project approved in Nov 2010
		Rice Husk	1	10	
		Solid Waste	1	5	The project is operational
2	Landfill Gas			3	1 project with a capacity of 2MW is operational
3	Biogas (agro-based)		6	15.85	1 project with a capacity of 1.7 MW is operational
4	Mini-hydro		14	80.2	4 projects with a total capacity of 12.5MW are operational
5	Wind and solar		0	0	No applications received
	TOTAL		**43**	**297.05 MW**	**11 projects with a total capacity of 61.2 MW capacity were operational**

Progress of SREP commissioned projects



The graph below shows the progress of SREP projects that have been commissioned since the start of the programme. Eleven projects have commenced operations to date, with a total capacity of 61.2MW.

ISSUES AND CHALLENGES

ST was directly involved in the discussions and drafting of the Renewable Energy Act (RE Act) and the Sustainable Energy Development Authority Act (SEDA Act),tabled for the first time at the Dewan Rakyat on December 15, 2010. In the Act, the *Feed-in-Tariff* (FiT) mechanism was introduced which will see RE entrepreneurs enjoying premium tariffs per unit of electrical energy generated using RE sources stated in the Act.

Throughout 2010, ST received various requests from interested parties to develop RE projects. This was probably the result of increasing interest from the public due to the publicity given to the FiT mechanism which will be implemented in 2011. Although there were many applications received for the SREP project, some of them were incomplete which made the assessment process more difficult.

With the establishment of SEDA as the agency to implement the FiT mechanism, the function of the Special Committee on Renewable Energy (SCORE) and the ST Secretariat will cease. Ongoing discussions between SEDA and ST is expected to continue during the commencement of FiT to ensure an orderly transition of job scope.

Generally, the increase in the electricity sales tariff for biomass and biogas to 21 sen/kWh which was announced on August 2008 boosted the development of SREP programmes. This could be clearly seen in 2009 when 7 projects with a capacity of 43 MW commenced operations successfully.

In 2010, the implementation of SREP projects declined from the previous years and this could be due to some project entrepreneurs preferring to wait for further developments in the FiT mechanism.

DEVELOPMENT OF NUCLEAR ENERGY

ST also undertook activities related to the development of nuclear energy in line with the government's aspiration of using nuclear energy as one of the electricity generation options post 2020, especially in Peninsular Malaysia. ST played a major role in coordinating the Nuclear Power Legislative Development Coordination Working Committee Meeting (JKPPPKN) in 2010 in view of ST's role as the co-chair of JKPPKN with AELB. A series of discussions on the issue of the Licensing of Nuclear Plants were also held.

MALAYSIA BUILDING INTEGRATED PHOTOVOLTAIC (MBIPV) PROJECT

ST chairs the National Steering Committee *(Project Review Committee)* that acts as the coordinator for the *Malaysia Building Integrated Photovoltaic (MBIPV) Project* and plays a role in monitoring and financing the project under which the Solar 1000 initiative was launched in 2007.

Under the Solar 1000 programme, subsidies will be given to members of the public interested in installing the BIPV system in houses and buildings for electricity generation. The programme targets the installation of solar powered system with a total capacity of 1,200 kWp which is connected to the grid. As of June 2010, the Solar 1000 programme has obtained 167 approvals with a capacity of 1524 kWp, and 71 of the projects with a total capacity of 283kWp had commenced operations.

ASEAN INTERCONNECTION COLLABORATION PROJECTS

There are 16 interconnection projects proposed under the *ASEAN Power Grid Consultative Committee* (APGCC) and one of them is the *Sumatera - Peninsular Malaysia Interconnection*. The objective of the project, scheduled for completion in 2015, is to establish a bilateral capacity sharing collaboration between the Perusahaan Listrik Negara (PLN) system in Sumatera and the Tenaga Nasional Berhad (TNB) system in Peninsular Malaysia. However, the project has yet to be implemented.

The cancellation of the energy supply project from the Bakun hydroelectric plant via undersea cable from Sarawak to Peninsular Malaysia also has affected the projects proposed under the ASEAN interconnection collaboration.

Recycling Of Water
Recycling is one of the major concepts applied in the ST Diamond Building, including the recycling of water

PROMOTING THE DEVELOPMENT OF A TRANSPARENT AND COMPETETIVE ENERGY INDUSTRY

IMPLEMENTATION OF A BIDDING PROCESS FOR GENERATION PROJECTS

The year 2010 marked for the first time of the implementation of a competitive bidding exercise for the procurement of new generation capacity. This process commenced with the proposal to build a new coal power plant to fill the void left by the cancellation of the electricity supply project in Bakun, Sarawak to supply power to Peninsular Malaysia. Initially, TNB submitted plans to build 2 units of coal powered plants with a capacity of 2x1000MW at the Janamanjung Power Plant owned by TNB in order to fulfil demand for electricity in Peninsular Malaysia for 2015 and 2016.

The Government decided that the capacity addition for 2015 and 2016 should be done via a competitive bidding process to ensure cost competitiveness in the procurement of the new power plants. To achieve this objective, ST appointed consultants to advise on whether the coal power plants could be completed by 2015 and 2016 if a competitive bidding process was implemented, as reserves would be low by that time.

The construction of coal powered plants with a capacity of 1000MW by 2015 and 2016 is essential to ensure adequate electricity supply in Peninsular Malaysia. After evaluating factors such as timing, the best option to secure dependable electricity supply at a competitive price for consumers without the risk of insufficient electricity supply in 2015, the construction of the first unit of the coal power plant was awarded to TNB Janamanjung and the plant is expected to be operational in March 2015.

The second 1000 MW coal power plant is scheduled to commence operations in 2016. ST was given the mandate by the government to undertake a limited bidding process. It subsequently formed a working committee called 'FirST Power' to implement the limited bidding. The committee consists of officers from ST and consultants appointed by ST:

'FirST Power' Committee Members

No.	Consultant	Firm/Individual
1	Project Director	En. Abd. Rahim Md Noh
2	Systems Solution	Advanced Power Solutions
3	Legal	Christopher Lee dan Co.
4	Finance	Fieldstone
5	Technical	Burns & Mcdonnell

'FirST Power' is ST's focal point for matters relating to Power Purchase Agreements involving Coal Supply and Transmission Agreement (CSTA) and technical matters related to the design of power generation stations and its related transmission system.

Due to time constraints, bidding was open only to current coal power plant owners (brownfield site) i.e. Tanjung Bin dan Jimah. The project implementation schedule is as follows:

Implementation Schedule for the Limited Bidding Process

Issuance of Request For Proposal	15 Nov 2010
Briefing prior to bidding	10 Dec 2010
Briefing process	16 Nov 2010 – 18 Mar 2011
Bidding submission	15 April 2011
Bidding evaluation	15 April 2011 – 30 May 2011
Invitation letter to the selected bidder	31 May 2011
Bidding negotiation and project agreement with the selected bidder	6 June 2011 – 15 July 2011
Issuance of offer letter to the successful bidder	15 September 2011
Signing of PPA and CSTA	Not later than 15 October 2011
Date of financing is finalised	Date as proposed by the bidder (but not later than 15 Sept 2012)

LAUNCH OF THE GRID CODE AND DISTRIBUTION CODE FOR PENINSULAR MALAYSIA

On December 21, 2010, another milestone was achieved in the electricity supply industry in Peninsular Malaysia with the official launch of the new Grid Code and Distribution Code by the Minister of Energy, Green Technology and Water. The 2010 Grid Code is an extension of the 1994 Grid Code after incorporating changes in the supply industry in Peninsular Malaysia ifor the last 16 years. The Distribution Code 2010 is being used for the first time in the electricity distribution sector to enhance the transparency and planning, development and operational dependability of the distribution system. Both the new codes officially took effect on January 1, 2011.

STUDY ON THE SABAH GRID SYSTEM AND DRAFTING OF THE SABAH GRID CODE

Sabah was also included when the ST initiated steps for the preparation of its own Grid Code for Sabah and Labuan. The services of an international consulting firm was engaged to help develop the Sabah and Labuan Grid Code, also to prepare a report on the Sabah grid system. These were part of the efforts to enable Sabah to also have a secure, integrated and dependable industry structures. The study on the Sabah grid system would enable ST to obtain an overview of the status of the grid system apart from providing an additional reference for ST and also SESB in developing short, medium and long term plans. The Sabah and Labuan Grid system will emphasize the Single Buyer model in operating the Sabah Grid to enhance operational transparency and interaction among SESB and power stations, especially IPPs. Apart from that, the operational integration involving generation, transmission, distribution networks as well as systems not connected to the grid will be taken into account in line with the uniqueness of the Sabah grid system.

ENERGY CONSULTATIVE PANEL

As in the previous years, the ST as the Energy Consultative Panel (PPT) Secretariat held two meetings on April 28 and December 16, 2010. The PPT meetings received good response as it discussed the current issues in the energy industry.

Among the issues discussed were:

a. Gas Supply and Gas Pricing by Petroliam Nasional Berhad (PETRONAS);
b. Electricity Tariff by Tenaga Nasional Berhad (TNB);
c. Electricity Supply Situation in Sabah and the Initiative to Achieve SAIDI (System Average Interruption Duration Index) of 700 minutes in 2010 by Sabah Electricity Sdn. Bhd. (SESB);
d. Awareness and Acceptance towards the Development of Nuclear Power Plants by the Malaysian Nuclear Agency (ANM); and
e. Consumer Issues – Metering, Billing and Disconnection of Electricity Supply by Tenaga Nasional Berhad (TNB).

RENEGOTIATION OF THE POWER PURCHASE AGREEMENTS (PPA)

Under the initiative of the Project Management Office (PMO) of MyPower Corporation, and in collaboration with ST and KeTTHA, the renegotiation of the PPA with first generation IPPs was arranged. The extension of the operational period of the first generation IPP power plants is an option in planning for additional generation capacity for the period after 2015. The following are the first generation IPPs involved:

List of First Generation IPP's

No.	First Generation IPP	Capacity (MW)
1.	YTL Power Generation Sdn. Bhd.	1,170
2.	Genting Sanyen Power Sdn. Bhd.	762
3.	Segari Energy Ventures Sdn Bhd	1,303
4.	Port Dickson Power Bhd	436
5.	Powertek Bhd	434

Among the activities conducted by the PMO in collaboration with ST and KeTTHA in 2010 during the PPA renegotiation process were as follows:

- Organised a series of discussions with First Generation IPPs with the objective of extending the concession agreement from IPPs including discounts on financial capacity rates, fixed operations rate and variable operations rate;
- Conducted financial analysis on the proposals submitted by the IPPs;
- Organised a meeting involving three Ministers, i.e. the Minister of Energy, Green Technology and Water, Minister of Finance and Minister in the Prime Minister's Department;
- Held discussions with TNB as the Single Buyer; and
- Presented outcome of discussion and proposal to the Economic Council.

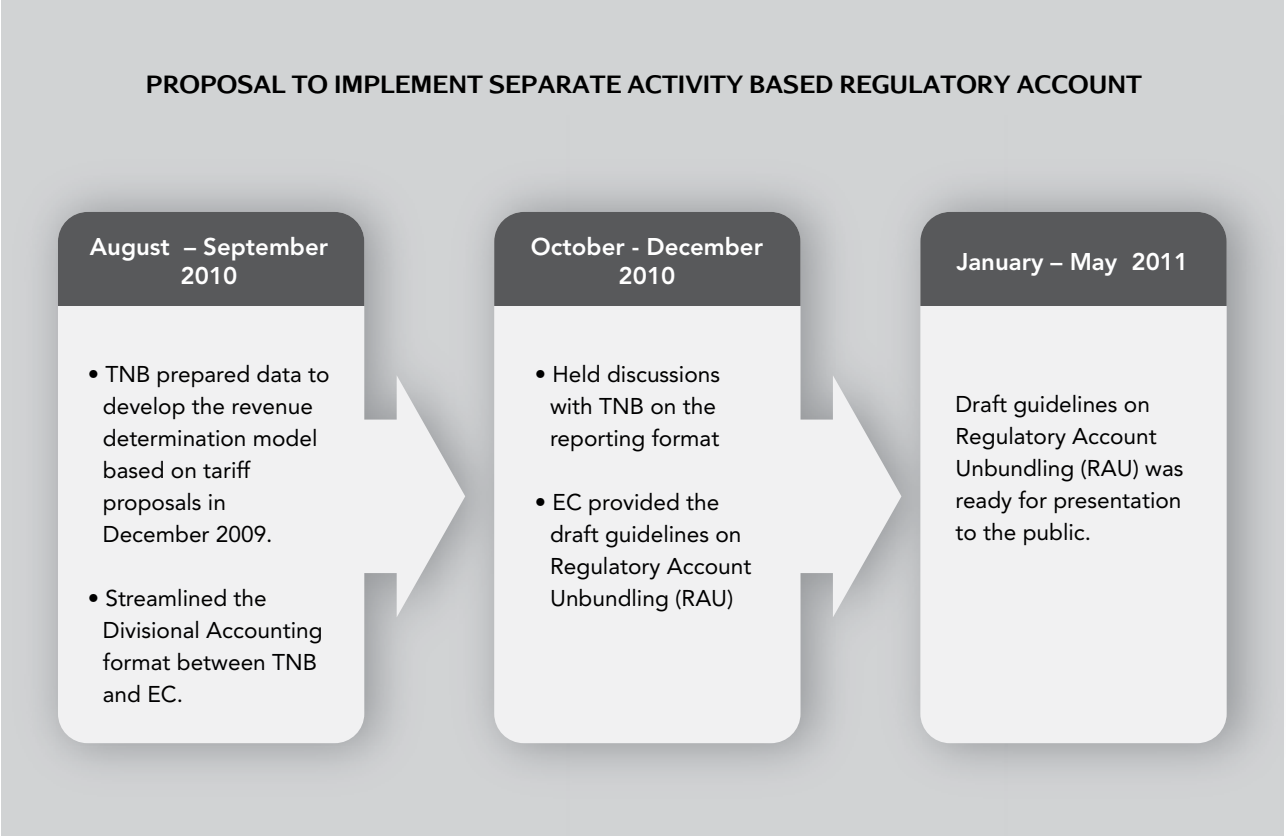
RING-FENCING THE GRID SYSTEM OPERATOR AND SINGLE BUYER

Several discussions were held with the PMO and TNB to find the best way to implement ring-fencing to have Grid System Operator and Single Buyer that are neutral and fair in operating the electricity supply system. The aspects emphasised were the efforts to improve the transparency and fairness of the Grid System Operator and Single Buyer, without involving large structural changes and which can be adapted to the current TNB practices. As at the end of 2010, the initiative were still being studied.

PREPARATION OF A SEPARATE ACTIVITY-BASED REGULATORY ACCOUNT

In line with the Incentive-Based Regulation (IBR) concept that emphasises transparency of information in the preparation of accounts by TNB, ST had taken the initiative to prepare a separate regulatory account based on electricity supply activities. This is also part of the action plan in the government's initiative to restructure the electricity supply sector.

The preparation of separate accounts would help ST make more accurate assessments of TNB's real performance when compared to the projected financial performance, operational expenditure and capital expenditure that they have submitted to the government in their proposal to review electricity tariff.



Photovoltaic Panels
Photovoltaic panels are integrated as part of the ST Diamond Building design to harness solar energy. The total installed photovoltaic capacity is 71.4 kWp which feeds directly to the national grid.

ENSURING SAFE AND EFFICIENT ENERGY CONSUMPTION

ENFORCING EFFICIENT MANAGEMENT OF THE ELECTRICAL ENERGY REGULATIONS 2008

In 2010, ST received 177 applications for the position of Energy Managers. Out of that total, about 73 applicants had passed and registration were registered as Electrical Energy Managers compared to 22 applicants who registered in 2009. As of 31 December 2010, a total of 132 persons have been registered as Electrical Energy Managers.

ST has ensured that the smooth implementation and enforcement of the Regulations by:

- Organising briefings and dialogues with stakeholders. Some of the sessions were organised with the Federation of Malaysian Manufacturers (FMM);
- Sending notifications to all the installations effected by Regulations;
- Disseminating and updating information about the Regulations in ST website; and
- Preparing guidelines for the implementation of the Regulations;
- Studying and analysing reports received on efficient electrical energy management.

ENERGY EFFICIENCY STANDARDS AND LABELLING

The energy efficiency performance rating for electrical appliances was extended in 2010 to perlite type insulators. The labelling programme which commenced in 2009 for appliances such as refrigerators, television sets, domestic fans and air conditioners has also been extended to include the labelling of additional product models in 2010. The following table shows the number of models that have energy efficiency performance rating and labels.

Electrical Appliance	No. of Models	
	2009	2010
Air Conditioners	110	272
Refrigerator	25	23
Fan	200	314
Television	170	288
Insulators	25	25
Ballast	31	33
High Efficiency Motors	74	136
Fluorescent Lamps	-	6
Total	**635**	**1,097**

INCENTIVES FOR ENERGY EFFICIENT AND RENEWABLE ENERGY PRODUCTS

ST is a member of the National Committee on Investment in Services Sub-Sectors and assumes the role of technical assessor for the Malaysian Industrial Development Authority (MIDA) for incentives on energy efficiency and renewable energy. In 2010, ST approved 178 applications for incentives related to energy efficiency, energy efficient appliances and materials and also solar products and photovoltaic panels.

ENERGY EFFICIENCY ACTIVITIES

Since its inception in 2001, the ST has actively involved in energy efficiency activities organised locally and at the international level. Its activities include:

- *Asia Pacific Conference and Exhibition On Energy Efficiency*
- *Energy Efficiency and Green Technology Incentives in Malaysia*
- *Energy Efficiency Initiatives in Malaysia*
- *US-ASEAN EE Standard and Labelling Workshop in Hanoi, Vietnam*
- *8th Conference on Standard and Conformance for Green Harmonization in Sendai, Japan*
- *ERIA Research Project 2010: Working Group on Standardisation On Green and Safety In East Asia - Research On Environmental Certifications and Standards of Refrigerator Performance.*

PARTICIPATION AT IGEM 2010 CONFERENCE

In conjunction with the ST's participation in the International Greentech and Eco Products Exhibition and Conference Malaysia 2010 (IGEM 2010) from October 14 to 17 2010, the ST collaborated with the New Straits Times Press of Malaysia to prepare publicity materials related to the function and to highlight the role of the ST, organisational initiatives and the construction of the ST Headquarters in Putrajaya to encourage sustainable growth.

An advertorial and special interview with ST's CEO focussing on Green Technology and Energy Efficiency in the Diamond Building was published as a Special Insert in the NST on October 13, 2010 as part of IGEM 2010.

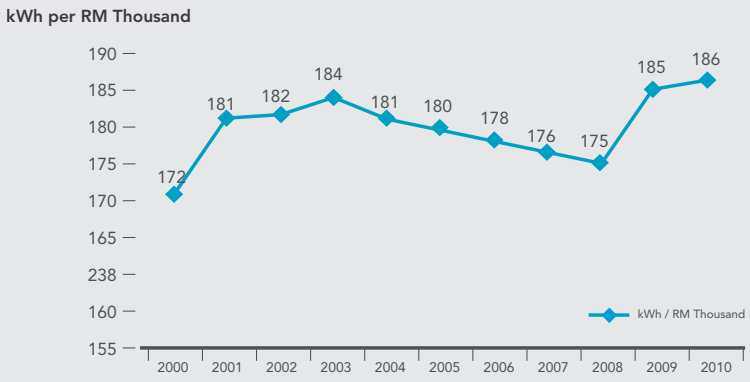
NATIONAL ELECTRICAL INTENSITY

As a developing country, Malaysia depends very much on its energy resources, especially electricity energy sources to drive its economic growth. Almost all of electricity generated is used to fulfil domestic demands in various sectors. The rise in GDP growth, increase in population and changes in daily lifestyle, which are more dependent on the use of technology, are factors that contribute to the rise in electricity consumption in the country.

What is Electrical Intensity?

Electrical Power Intensity is the electricity energy consumption to produce one unit of Gross Domestic Product (GDP). Electricity Intensity is used as one of the indicators to measure the efficiency of domestic electricity consumption.

Intensity of Electricity Consumption in 2000 to 2010 at Constant Year 2000 Price (RM Thousand)



In 2010, the national electrical power intensity rose by 0.5% from 2009. However, looking at the trend from 2000 to 2010, electrical power intensity in the country increased by 8.1% or at an average growth of 0.8% annually. Higher living standards and a growing economy were among the factors that contributed to the increase. However, the rate of energy consumption to drive the national economic growth could be reduced by increasing the use of energy efficient technologies in its economic activities. With the extensive use of energy efficient technologies, the country's economy could grow without a corresponding increase in energy consumption.

DEVELOPMENTS IN ELECTRICAL SAFETY

In 2010, several initiatives were undertaken by the Commission to enhance the level of electrical safety in the country based on feedback from the industry and the demands of the electrical safety regulation framework stipulated in the Electricity Supply Act 1990 and Electricity Regulations 1994. The following were among the initiatives undertaken:

STUDY AND GUIDELINES ON ELECTRICAL SAFETY PRACTICES

i. *A Study on the Compliance Rate Among Installation Owners, Contractors, Competent Persons And Electrical Equipment Retailers In Relation To The Requirements Of Electricity Supply Act 1990 And Electricity Regulations 1994*

The study was to evaluate the level of compliance to electricity laws, especially in relation to the registration of installations, electrical contractor registrations, electrical repair contractors and vendors of electrical appliances in the market. The main purpose of the study was to obtain a clearer and more accurate picture on the issue of non-compliance with the Electricity Supply Act 1990 and Electricity Regulations 1994 among owners and tenants of premises and industries players that were involved in installing, operating and maintaining electrical installations in industrial and commercial premises as well as in public places. The results of the study wouldl be used by ST to identify regulatory methods and enforcement programmes that have to be emphasised to achieve maximum impact.

ii. *Circular No 2/2010 – Streamlining the Use of Relay Calibration and Protective Equipment Testing Forms*

This circular was issued and was effective from November 19, 2010. Its objective was to clarify and tighten the testing certification system implemented by competent persons at the Electricity Services Engineer (JPE) grade level registered with ST. The circular required competent persons to use these revised forms to record and confirm relay calibration and protective equipment test strictly to be conducted under their proper supervision. With the enforcement of this circular, issues related to inadequate testing regulations by JPE was successfully reduced.

iii. *Publication of Leaflets and Posters on Electrical Safety*

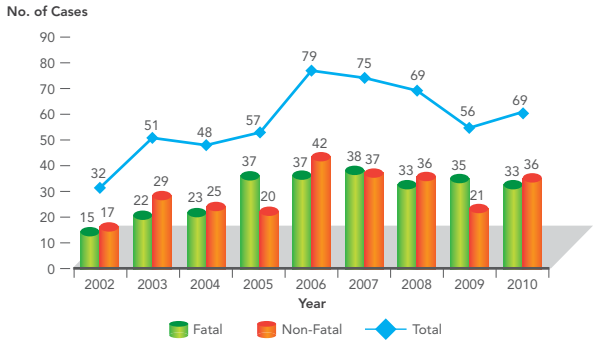
One of the ST's efforts to create awareness of electrical safety among the public is the distribution of leaflets and posters on electrical safety. Among the publications printed were:

a. 'Requirement of inspection by competent persons in electrical installations' leaflet (Malay version).
b. 'Obtaining approval for electricity appliances' leaflet (Malay version).
c. 'Electrical equipment that requires certificate of approval' leaflet (English version).
d. 'Did You Know? 3 Pin Plugs, 2 Pin Plugs' leaflet (Malay Version).
e. 'Did You Know? 3 Pin Plugs, 2 Pin Plugs' poster (Malay Version).

ANALYSIS OF ELECTRICITY-RELATED CASES

In 2010, the total number of electricity-related accidents increased from 2009, with 33 fatal and 36 non-fatal cases recorded. However, the number of fatal cases had declined compared to 2009.

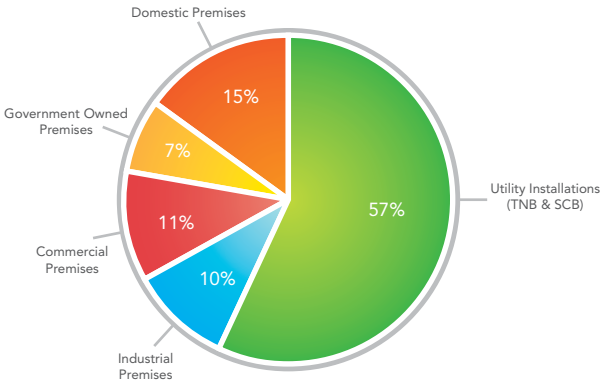
Chart 1: Number of Electrical Accidents Cases (2002 -2010)



Accident Per Million Electricity Consumers (2002-2010)

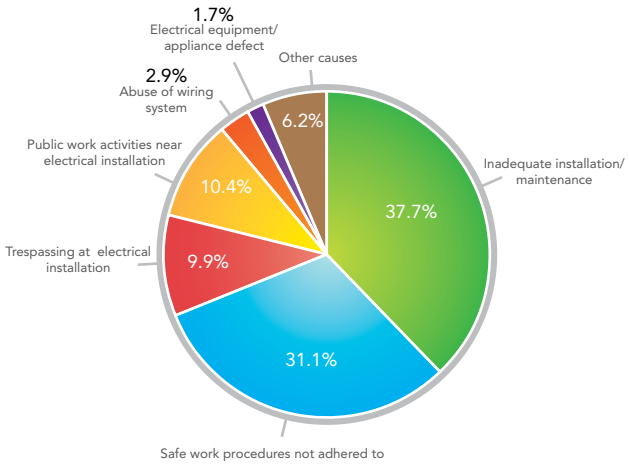
The rate of victims per million of electricity consumers for 2010 showed an increase from 2009 despite the decline in fatalities.

Location of Electrical Accidents (2002 – 2010)



An analysis of electricity-related accidents reported from 2002 to 2010 indicate that 57% of the accidents occurred during power installations, i.e. electrical substations, overhead lines and underground cables. Approximately 15% occurred in domestic premises, 11% in commercial premises, 10% in industrial premises and 7% in government owned premises.

Causes of Electricity-related Accidents (2002 – 2010)



It was found that 37.7% of the total number of accidents was due to failing to comply with stipulated specifications, rules and guidelines for electrical installation and maintenance of electrical systems. Other causes included undertaking electrical work that did not fulfil safety work procedures (31.1%), public activities nearby electricity installation (10.4%), trespassing in the vincinity electrical installations (9.9%), abuses in wiring systems (2.9%) and defects in electrical appliances (1.7%).

Light Shelf
The light shelf is an architectural element that allows daylight to penetrate deep into the ST Diamond Building. Not only do light shelves allow light to penetrate through the building, they are also designed to provide shading near the windows, due to the overhang of the shelf, and help reduce window glare.

ENSURING LEGAL COMPLIANCE

LICENSING AND CERTIFICATION ACTIVITIES

ST's main objective is to undertake its functions as the regulator and enforcement body under the laws and regulations stipulated in the Electricity and Gas Laws and Regulations. The functions and tasks performed by the organisation are to:-

- Issue public and private installation licences
- Register installations, contractors and competent persons
- Conduct competency examinations
- Issue competency certificates
- Issue accreditation to competency training institutes
- Issue certificates of approval to import and manufacture electrical appliances and gas equipment
- Inspect contractors' premises and installations
- Investigate accidents, fires and complaints
- Monitor the manufacture, importation, distribution and sale of electrical appliances.
- Monitor electricity and gas supply activities

ISSUANCE OF PRIVATE LICENCE (FOR INSTALLATIONS OF 5MW AND BELOW)

In 2010, a total of 156 new private licences had been issued by ST via its regional offices. Meanwhile, a total of 1,330 private licence renewals were made during this period.

Statistics of Private License Issuance by Regions in 2010

Regional	New Private Licence	Reissuance of Private Licence
	2010	2010
Ipoh	1	70
Johor Bahru	10	148
Kota Bharu	17	65
Kota Kinabalu	3	69
Malacca	20	32
Butterworth	4	7
Kuantan	25	172
Petaling Jaya	49	32
Sandakan	27	735
Total	**156**	**1,330**

ISSUANCE OF PUBLIC LICENCES

In 2010, ST issued a total of 20 public licences and 2 SREP licences compared to 42 public licences and 4 SREP licences in 2009.

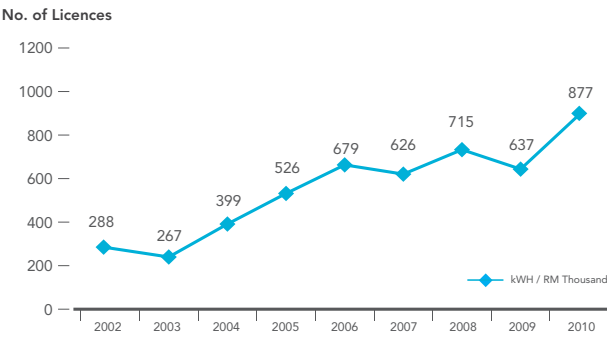
The legalisation process for unlicensed installations was still ongoing in 2010 with continuous monitoring of premises involved in the supply of electricity for personal and third party usage. Throughout 2010, inspection and enforcement were carried out to ensure legal compliance of the following premises reported to have conducted electricity distribution and supply activities without licence. They were:

i. PLUS Expressways Berhad
ii. Fawanis Sdn Bhd
iii. Malaysia Airports Sdn Bhd (MAS)
   a) MAS Subang, Selangor
   b) MAS Kuala Terengganu,Terengganu
   c) MAS Alor Setar, Kedah
iv. Plaza Hang Tuah, Malacca

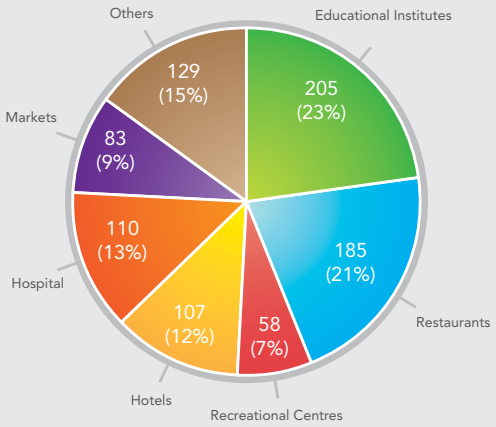
PRIVATE GAS LICENCES

A Private Gas Licence is issued to person/persons who supplies and consumes gas through a pipeline in his own premise or in the property or premise of the owner or resident. Private Gas Licence holders is divided into seven categories: hotels, hospitals, markets, educational institutions, recreational centres/clubs, restaurants and others. The total number of new applications and renewal of gas licences increased to 877 in 2010, from 637 in 2009.

Private Gas Licence



No. of Private Gas Licences According to Category



LIST OF PUBLIC LICENCES ISSUED

No.	Licensee	Licenced Activity	Capacity (MW)
1.	Achi Jaya Plantations Sdn Bhd	Generation - SREP	1.25
2.	Pesaka Technologies Sdn Bhd	Generation - SREP	11.44
3.	IOI Bio-Energy Sdn. Bhd.	Generation - Cogen	15.00
4.	Untung Ria Sdn. Bhd.	Generation - Cogen	4.00
5.	TSH Bio-Gas Sdn. Bhd.	Generation and Distribution	3.00
6.	Employees Provident Fund	Distribution	3.40
7.	SEH Power Sdn. Bhd.	Distribution	45.00
8.	Felda Engineering Services Sdn. Bhd. - Felda Kalabakan	Generation and Distribution	1.55
9.	Felda Engineering Services Sdn. Bhd. - Felda Umas	Generation and Distribution	2.60
10.	Felda Engineering Services Sdn. Bhd. - Felda Sahabat	Generation and Distribution	23.94
11.	Ipoh Tower Sdn. Bhd.	Distribution	4.25
12.	Suara Wira Sdn. Bhd.	Distribution	4.05
13.	Jasa Imani Sdn. Bhd.	Distribution	4.25
14.	Malaysia Airports Sdn. Bhd. - KLTA , Kota Kinabalu	Distribution	5.50
15.	Malaysia Airports Sdn. Bhd. - Tawau Airport	Distribution	2.50
16.	Malaysia Airports Sdn. Bhd. - Sandakan Airport	Distribution	2.50
17.	Sepang Goldcoast Sdn. Bhd.	Distribution	9.50
18.	Setia Haruman Sdn. Bhd.	Distribution	15.5
19.	GCH Retail (M) Sdn. Bhd. - Giant Superstore Complex Lukut	Distribution	2.55
20.	C3 Power Sdn. Bhd.	Distribution	5.85
21.	Sunway Pyramid Sdn. Bhd.	Distribution	22.00
22.	GCH Retail (M) Sdn. Bhd.- Kompleks Giant Tampoi	Distribution	5.10

ISSUANCE OF ELECTRICAL INSTALLATION REGISTRATION CERTIFICATE

The registration of electrical installations in 2010 recorded an increase of 15% compared to 2009, with a total of 8,319 installations and in 2010, the number of rose to 9,571. Out of this total, 1,044 were for new registrations and 8, 527 were re-registration

Regional	Installation Registration	Installation Re-registration
	2010	2010
Ipoh	19	622
Johor Bahru	117	1, 956
Kota Bharu	39	359
Kota Kinabalu	49	585
Malacca	55	530
Butterworth	167	1, 055
Kuantan	44	481
Petaling Jaya	519	2, 408
Sandakan	35	531
Total	**1, 044**	**8, 527**

Liquid Petroleum Gas (LPG) Installation

Natural Gas Installation

APPROVAL OF GAS INSTALLATIONS

Total applications for approval to install (ATI) and approval to operate (ATO) for both natural gas and LPG installations showed a significant increase to 1,843 applications in 2010 (283 for natural gas and 1,560 for LPG) from 1,312 the previous year. The approvals issued also covered approval to install metering stations, regulation stations and additional gas installations.

No. of ATI and ATO for Natural Gas Installations

Approval	Category	Up to 2006	2007	2008	2009	2010
Approval to Install (ATI)	Industrial	486	51	61	41	88
	Commercial	473	77	87	48	51
	Domestic	222	27	34	14	11
	Total	**1,181**	**155**	**182**	**103**	**150**
Approval to Operate (ATO)	Industrial	483	49	83	39	73
	Commercial	506	83	77	79	45
	Domestic	136	28	27	37	15
	Total	**1,125**	**160**	**187**	**155**	**133**

No. of ATI and ATO for LPG Installations

Approval	Category	Up to 2006	2007	2008	2009	2010
Approval to Install (ATI)	Industrial	-	-	-	-	-
	Commercial	2,694	508	636	601	846
	Domestic	176	31	22	28	35
	Total	**2,870**	**539**	**658**	**629**	**881**
Approval to Operate (ATO)	Industrial	-	-	-	-	-
	Commercial	2,005	461	549	404	660
	Domestic	127	32	31	21	19
	Total	**2,132**	**493**	**580**	**425**	**679**

REGISTRATION OF ELECTRICAL CONTRACTORS

To ensure electrical works are conducted properly and safely in accordance to the stipulated regulations, only contractors registered with ST are allowed to undertake electrical works.

Hence, in 2010, a total of 828 new contractors were registered and 3,066 contractors renewed their registration. However, the number of registrations in 2010 declined compared to 2009.

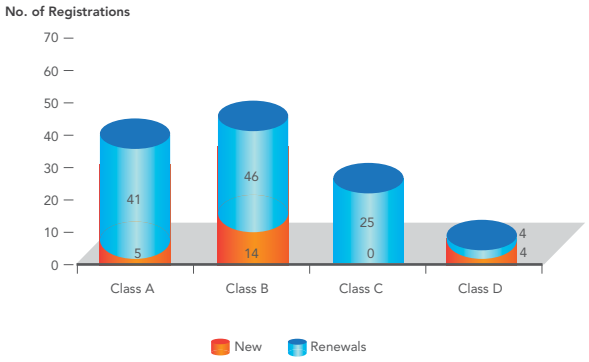
No. of New and Renewals of Registration of Electrical Contractors by Region in 2010

Area	New Registrations	Renewals
Ipoh	28	289
Johor Bahru	45	423
Kota Bharu	64	343
Kota Kinabalu	75	167
Malacca	64	276
Penang	149	373
Kuantan	55	174
Petaling Jaya	333	931
Sandakan	15	90
Total	**828**	**3066**

REGISTRATION OF GAS CONTRACTORS

In 2010, 23 gas contractors were registered and 116 gas contractors had their registrations renewed. Each class has a different work scope based on their gas installation category.

No. of Gas Contractor Registrations

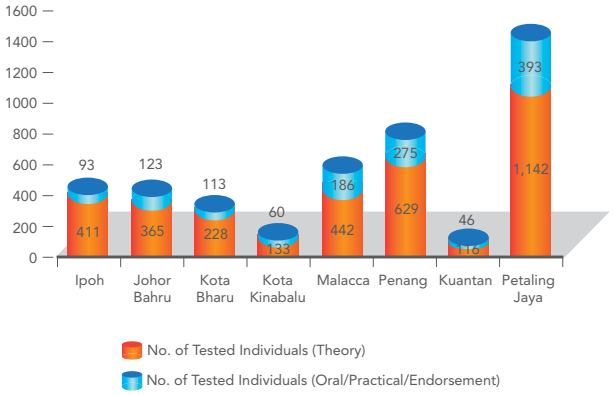


COMPETENCY EXAMINATIONS AND REGISTRATION OF PERSONS WITH ELECTRICAL COMPETENCE

COMPETENCY EXAMINATION FOR ELECTRICAL WIREMAN AND CHARGEMAN

The law stipulates that all electrical works have to be conducted by qualified and skilful persons. In view of this, a total of 3,375 candidates sat for the competency examinations. In line with ST's goal of focusing on enforcement and regulation, the administration of examinations will be handed over to institutions that will be accredited in stages to enable candidates to get the appropriate training, exposure and experience.

Competency Examination Candidates According to Regions



Electrical Wireman and Chargeman Competency Examination (Theory) Statistics for 2010 Session

No.	Category	Candidate	Passed	Failed	% Passed
1	PW1	215	28	187	13.02%
2	PW3	676	80	596	11.83%
3	A0	1,190	257	933	21.60%
4	A1	210	30	180	14.30%
5	A4-2	113	25	88	22.10%
6	A4-1	55	17	38	30.90%
7	A4	432	111	321	25.70%
8	B0-2	53	12	41	22.60%
9	B0-1	22	8	14	36.40%
10	B0 TNB	119	48	71	40.30%
11	B0	258	76	182	29.50%
12	B1	4	2	2	50.00%
13	B4	28	19	9	69.70%
	Total	**3,375**	**713**	**2,662**	**21.12%**

HIGH VOLTAGE ELECTRICAL CHARGEMAN COMPETENCY EXAMINATION (PRACTICAL AND ORAL) FOR 2010 SESSION

A total of 287 candidates sat for the practical and oral examinations for the High Voltage Category (B0 to B4) in 2010. Candidates who sat for these examinations consisted of new candidates and repeat candidates. They were required to sit for the High Voltage switching system and equipment course at the Sultan Ahmad Shah Training Institute (ILSAS), Bangi prior to the examination.

Examination Date and Total Number of Candidates For 2010

No.	Examination Date	Total Candidates	Passed	Failed
1	11-13 Jan-2010	21	8	13
2	8-12 Feb-2010	41	28	13
3	17-26 May-2010	51	31	20
4	23-26 Aug-2010	21	13	8
5	1-3 Sep-2010	15	4	11
6	18-29 Oct-2010	82	48	34
7	15-16 Nov-2010	13	10	3
8	13-30 Dec-2010	43	22	21
Total		**287**	**164**	**123**

Practical Examination for A4 Chargeman conducted in Felda Nilam Permata, Lahad Datu, Sabah on August 1, 2010

continue here

ELECTRICAL SERVICES ENGINEER, COMPETENT ELECTRICAL ENGINEER AND ELECTRICAL SUPERVISOR COMPETENCY EXAMINATIONS

The Electrical Services Engineer (ESE) and Competent Electrical Engineer (CEE) competency examinations were conducted 8 times while there was no examination held for Electrical Supervisors. The examination dates were depicted in the table below. A total of 34 qualified candidates sat for the exams and 30 passed.

ESE/CEE Competency Examination Dates in 2010

No.	Examination Dates	No. Of Candidates Sitting For ESE/CEE Examination	Passed	Failed
1	22/01/2010	4	4	0
2	22/03/2010	3	3	0
3	31/05/2010	6	5	1
4	01/06/2010	6	6	0
5	09/08/2010	4	2	2
6	15/10/2010	3	2	1
7	18/10/2010	4	4	0
8	17/12/2010	4	4	0
Total		**34**	**30**	**4**

REGISTRATION OF ELECTRICAL COMPETENT PERSONS

In 2010, a total of 14,779 electrical competent persons were registered either by electrical installations, industry, commerce or institutions with 4,246 new registrations.

Registration of Electrical Competent Persons

Registration of Competent Persons	2009	2010
New registrations	4,037	4,246
Renewal	10,581	10,533
Total	**14,618**	**14,779**

ISSUANCE OF ELECTRICAL COMPETENCY CERTIFICATES 2010

A total of 6,878 Electrical Competency Certificates were issued in 2010 to private candidates who sat for exams in ST offices and at accredited institutions.

Details of Competency Certificates Issued in 2010

Through ST Offices	Certificate Category								Total
	PW	END	PJE	G/S	PK	PE	JPE	JEK	
Head Office	-	-	136	-	-	0	6	30	172
Petaling Jaya	70	21	190	31	6	-	-	-	318
Kuantan	4	6	24	7	0	-	-	-	41
Ipoh	8	10	31	11	0	-	-	-	60
Butterworth	33	54	126	11	1	-	-	-	225
Kota Baharu	12	3	28	11	2	-	-	-	56
Johor Baru	23	11	58	13	0	-	-	-	105
Sandakan	15	0	15	2	0	0	0	0	32
Kota Kinabalu	5	3	14	24	-	-	-	-	46
Malacca	52	13	53	6	-	-	-	-	124
TOTAL	222	121	675	116	9	0	6	30	1,179
Through Accredited Institutes	PW	END	PJE	G/S	PK	PE	JPE	JEK	Total
ABM	281	-	20	0	-	-	-	-	301
IKM	933	-	795	0	-	-	-	-	1728
ILP/ADTEC	1761	-	338	2	-	-	-	-	2101
PGM	290	-	10	3	-	-	-	-	303
INSTEP	0	0	21	0	0	0	-	0	21
PYS	27	-	-	-	-	-	-	-	27
IKTBNS	-	-	128	-	-	-	-	-	128
KKBNP	87	-	-	-	-	-	-	-	87
TNBG	-	-	4	-	-	-	-	-	4
TNBD	-	-	24	-	-	-	-	-	24
IKBN	479	-	281	2	-	-	-	-	762
KEDA	25	-	-	-	-	-	-	-	25
BMI	-	-	84	0	-	-	-	-	84
KYM	34	-	-	-	-	-	-	-	34
ILSAS	-	-	27	-	-	-	-	-	27
PUPATRI	-	-	6	-	-	-	-	-	6
BAITULMAL	21	-		-	-	-	-	-	21
KISMEC	-	-	16	-	-	-	-	-	16
Total	3,917	0	1,705	7	0	0	0	0	5,699
Grand Total	**4,139**	**121**	**2,380**	**123**	**9**	**0**	**6**	**30**	**6,878**

Notes:

PW : Electrical Wireman
END: Endorsement
PJE : Electrical Chargeman
G/S : Change Of Certificate
PK : Cable Jointer
PE : Electrical Supervisor
JPE : Electrical Services Enginer
JEK : Competent Electrical Engineer

ACCREDITATION OF INSTITUTIONS

A total of 17 institutions were given permission and accreditation to conduct competency courses and examinations. To ensure that the accredited institution fulfils the stipulated criteria, audits were conducted on them.

List of Accredited Institutes in 2010

No.	Institution	Accreditation Date	Course Category	Course Type
1.	Industrial Training Institute (ILP) Jitra, Kedah	24/05/2010	PW2	Part Time
2.	Industrial Training Institute (ILP) Kuala Lumpur	24/05/2010	PW4	Part Time
3.	Ledang GIATMARA Community, Muar, Johor	24/05/2010	A0	Full Time
4.	GIATMARA Centre, Jerantut, Pahang	24/05/2010	PW2	Full Time
5.	IKBN Bukit Mertajam, Penang	24/05/2010	TAVR and JVRP module	Full Time and Part Time
6.	Malaysian Building Academy, Central Region, Kuala Lumpur	24/05/2010	PW2	Full Time
7.	PETRONAS Institute of Petroleum Technology (INSTEP), Batu Rakit, Terengganu.	24/05/2010	A4	
8.	Malacca ILP	19/07/2010	PW2	Full Time (additional trainees)
9.	Kuala Terengganu ILP, Terengganu	19/07/2010	PW2	Full Time and Part Time (additional trainees)
10.	Jasin IKM, Malacca	19/07/2010	A0 A1	Part Time Full Time
11.	ABM Eastern Region, Kuala Berang, Terengganu	19/07/2010	A0	Full Time
12.	Pasir Gudang ILP, Johor	12/11/2010	PW2	Part Time
13.	Miri ILP, Sarawak	12/11/2010	PW2	Full Time
14.	KKTM Pasir Mas, Kelantan	12/11/2010	A1	Full Time
15.	PGM Sandakan, Sarawak	12/11/2010	PW4	Full Time
16.	INPENS International College (IKYS) – change in location and name	12/11/2010	PW4 PW2	Full Time Full Time
17.	Technical and Commerce Training Institute, Papar, Sabah	12/11/2010	A0	Full Time

EXAMINATIONS FOR GAS COMPETENT PERSONS

Throughout 2010, ST conducted written and oral (interview) examination for gas competent persons. The written examination was taken by candidates who do not fulfil the stipulated exclusion criteria. Candidates who passed the written examination were called for interviews prior to the issuance of the Competent Person Certificate. Candidates who qualified to attend interviews included those who have been exempted from written examinations or had passed courses in gas pipeline organised by accredited institutions.

A total of three written examination sessions were conducted in 2010 and four candidates sat for the examinations. Meanwhile, 14 interview sessions were held and attended by 32 candidates.

Examinations

Competent Persons Examination	Up to 2006	2007	2008	2009	2010
Written Examination	17	3	2	1	3
Oral Examinations (Interview)	182	16	18	4	14

ACCREDITATION OF GAS COMPETENCY COURSES

There were no accreditations given for gas competency courses and the number of accreditations remained at three educational institutions.

ISSUANCE OF GAS COMPETENT PERSON CERTIFICATES

Gas Competent Persons play an important role in guaranteeing safety in activities of gas supply through pipelines. Gas Competent Persons have sufficient knowledge and skills in gas installation. As at the end of 2010, the number of gas competent person certificates issued stood at 693 that included gas engineers, gas engineering supervisors and gas fitters. However, only 326 or 47% of the 693 competent persons were registered in 2010.

Competency Certificates Issued From 2006-2010

Type	Up to 2006	2007	2008	2009	2010
Gas Engineer	73	3	0	0	3
Gas Engineering Supervisor	227	6	6	5	11
Gas Fitter - Class I	151	14	15	4	2
Gas Fitter - Class II	85	3	2	0	1
Gas Fitter - Class III	55	6	6	8	7
Total	**591**	**32**	**29**	**17**	**24**

ISSUANCE OF CERTIFICATE OF APPROVAL FOR ELECTRICAL APPLIANCES

In line with Regulation 97(1), Electrical Regulations 1994, all electrical appliances categorised as domestic appliances that are commonly sold to the public and appliances that do not require specialised skills to operate have to obtain the approval from the ST before they can be imported, manufactured, displayed, sold or advertised. In view of this, 31 categories of electrical appliances were listed as appliances that require certificates of approval. In 2010, almost 7,000 applications for the certificate of approval to manufacture, import, display, sell and advertise as well as the renewal of certificates of approval and release of control letters were processed.

NEW APPLICATIONS

In 2010, the total number of new applications for the certificate of approval for manufacturing and importing activities declined compared to the previous year. A total of 693 certificates to manufacture, display, sell and advertise were issued as opposed to 972 in 2009, while 2,587 certificates to import, display, sell and advertise were issued compared to 3,046 in 2009. However, the certificate of approval to import and display increased from 58 applications in 2009 to 61 in 2010.

New Certificate of Approvals Issued

No.	New Applications Category	New Certificate of Approvals	
		Received	Approved
1.	Application to manufacture, display, sell and advertise	891	693
2.	Application to import, display, sell and advertise	3,083	2,587
3.	Application to import and display only.	61	61
	Total	**4,035**	**3,341**

APPLICATION TO RENEW CERTIFICATE

For renewal applications, the total number of certificate of approval issued in 2010 stood at 2,557, reporting an increase of 0.7 % from 2538 in 2009. The renewal of certificates of approval to manufacture increased by 7.2% while certificates of approval for imports dropped by 2.5% from 2009. Several applications were not approved due to the failure to submit the latest test reports, failure to show proof of purchase of the SIRIM-ST label and delay in submitting renewal applications i.e. 14 days from the expiry date. The average processing rate for renewal applications is 245 applications to manufacture and import.

Certificate of Approvals in 2010

No.	Application for Renewal	Total Certificates
1.	Approval to manufacture, display, sell and advertise	891
2.	Approval to import, display, sell and advertise	1,666
	No. of Certificate of Approvals Issued	2,557
	No. of Renewal Applications received	**2,939**

RELEASE LETTER TO IMPORT APPLIANCES

The application for release letters to import electrical appliances for specific purposes such as research and re-export increased from 527 in 2009 to 570 applications in 2010. However, applications for the validation of uncontrolled items had decreased from 367 applications in 2009 to 337 applications in 2010.

The monitoring of the import of electrical appliances for personal use was also made to ensure that appliances fulfil the stipulated standards. This action is taken to ensure that the country is not a dumping ground for substandard electrical equipment. The total number applications for release letters to import electrical appliances for personal use stood at 1,573, involving 3160 models.

No. and Type of Applications Approved from 2001 - 2010

Year	Certificate of Approval to Import, Display, Sell and Advertise	Certificate of Approval to Manufacture, Display, Sell and Advertise	Certificate of Approval to Import and Display	Release Letter to Import Equipment	Validation Letter for Non-Controlled Items	Certificate of Approval Renewal	Total
2001	2,214	913	19	1,224	514	3,670	**8,554**
2002	2,030	791	15	2,315	1,023	2,608	**8,782**
2003	3,113	1,334	15	955	334	3,327	**9,078**
2004	3,150	891	38	935	363	5,076	**10,453**
2005	3,786	450	43	822	222	2,562	**7,885**
2006	2,813	902	29	881	115	1,757	**6,497**
2007	2,797	944	37	1,039	374	1,921	**7,112**
2008	1,913	689	37	913	321	2,263	**6,130**
2009	3,046	972	58	527	367	2,538	**7,508**
2010	2,587	693	61	570	337	2,557	**6,805**

ISSUANCE OF CERTIFICATE OF APPROVAL FOR GAS FITTINGS, APPLIANCES AND EQUIPMENT

Gas fittings, appliances and approved equipment consisted of components installed on the natural gas and liquid petroleum gas pipeline system such as pipes and fittings, meters, valves, pressure regulators, gas leak detectors, hoses and cookers.

In 2010, only one application to manufacture, 5 applications to import and 29 applications for gas fittings, appliances and equipment were approved. The cumulative total number of approvals issued up to 2010 for gas fittings, appliances and equipment stood at 38, 105 dan 583 respectively.

Certificate of Approval to Assemble, Manufacture or Import Gas Fittings, Gas Appliances and Gas Equipment

Approval Type	Up to 2006	2007	2008	2009	2010	Total
Approval to Install or Manufacture Gas Fittings, Gas Appliances or Gas Equipment.	32	5	0	0	1	38
Approval to Import Gas Fittings, Gas Appliances or Gas Equipment	82	3	1	14	5	105
Total	**114**	**8**	**1**	**14**	**6**	**143**

Certificate of Approval for Gas Fittings, Gas Appliances and Gas Equipment

Approval Type	Up to 2006	2007	2008	2009	2010
Approval for Gas Fittings, Gas Appliances or Gas Equipment	428	32	11	83	29

Some of the Controlled Appliances and Equipment

MONITORING AND ENFORCEMENT

MONITORING THE QUALITY OF COMPETENT PERSONS' WORK

ST always monitors and ensures that certified competent persons are of a high calibre and fulfil the requirements of a growing industry in line with new technological developments. The industry needs competent supervision to ensure that electricity and piped gas consumption is always safe. Various efforts have been undertaken by ST to ensure that the competent persons it certifies are of a high quality, meeting the needs of the industry. Among the efforts undertaken include:

SEMINAR/DIALOGUE ON COMPETENCY ENHANCEMENT WITH COMPETENT PERSONS FROM INDUSTRY AND INSTITUTIONS 2010

The objective of the seminars and dialogues was to enhance awareness and understanding of competent persons involved in the electricity supply industry regarding the application of the following standards, MS IEC 60364:2003 Electrical Installations of Building, MS 1936:2006 Electrical Intallations of Building – Guide To MS IEC 60364, MS 1979:2007 Electrical Installations of Building – Code of Practice and MS IEC 60038 Nominal Voltage for Low Voltage Supply System as guidelines for wiring installations in buildings.

The seminars also created awareness among potential competent persons currently working in the electricity industry of the requirements needed and the competency examination procedures in order to provide them with a better understanding on the need to have a comprehensive and secure electrical wiring/installation system. In addition, these seminars and dialogues served as an avenue for customers to voice out their problems and propose solutions for evaluation to further enhance ST's services to its customers.

Date and Venue of Competency Enhancement Seminars with Competent Persons from Industry and Institutions in 2010

No.	Date	Location
1.	12.10.2010 and 13.10.2010	Kuantan, Pahang
2.	20.10.2010	Kota Bharu, Kelantan
3	21.10.2010	Kuala Terengganu, Terengganu
4.	23.11.2010	Kepala Batas, Pulau Pinang
5.	24.11.2010	Sg. Petani, Kedah

ST COMPETENCY EXAMINATION COMMITTEE MEETING

The Examination Committee was formed to endorse, discuss and decide on current issues and policies related to competency examinations.

ELECTRICAL WIREMAN AND ELECTRICAL CHARGEMAN COMPETENCY EXAMINATION (THEORY) MARKING WORKSHOP

The workshop was organised as part of ST's effort to uphold the integrity, ensure transparency and enhance the quality of answer sheet marking. A total of 3,375 answer sheets were marked from candidates in 13 categories. Out of that total, only 21.12% (713 candidates) passed and qualified to sit for the practical and oral examination. The practical and oral examinations for low voltage wireman and chargeman were conducted at the regional offices while the test for the high voltage chargeman category was organised by the head office at the Sultan Ahmad Shah Training Institute (ILSAS) in Bangi.

EXAMINATION COMMITTEE MEETINGS AT ACCREDITED INSTITUTION LEVEL/ WORKSHOPS TO STANDARDIZE EXAM PAPERS AMONG INSTITUTIONS/ MONITORING OF COMPETENCY EXAMINATION AT ACCREDITED INSTITUTIONS

ST attended meetings and workshops and also monitored competency examinations at accredited institutes to ensure that the quality of competent persons are of the required level. The following is the list of meetings and workshops held:

- Institutions Examination Committee Meeting
- Workshops to standardize competency examination questions at Institutions
- Competency Monitoring of Examinations at Accredited Institutions

IMPLEMENTATION OF MANAGEMENT AND ENGINEERING AUDIT (M&E AUDIT) ON LICENSEES

Based on the licensing requirements set by ST for public generation licensees, a management and engineering audit – (M & E Audit) should be conducted once every four years or within a specified period. The following are the objectives of this audit:

i. Conduct audit and make independent and detailed assessments on the performance of licensees;
ii. Evaluate the level of achievement of licensees in terms of engineering, finance and management of power plants and licensed activities;
iii. Ensure licensees fulfil the licensing conditions issued by ST; and
iv. Propose improvements on the services and performance of licensees.

M&E AUDIT ON TNB

On February 9, 2010, the consultants submitted the findings of the M&E audit on Tenaga Nasional Berhad (TNB). Based on the audit, ST received several proposals from the consultants to improve TNB's performance to become the best utility.

M&E AUDIT ON IPPs UNDER THE MALAKOFF BERHAD GROUP

Apart from TNB, audits conducted on Independent Power Producer (IPP) plants owned by Malakoff Corporation Berhad has also been substantially completed by the appointed consultants. The audit commenced in July 2010. Plants involved and the period of audit are as follows:

No.	IPP Plant	Audit Period
i.	Segari Energy Ventures Sdn. Bhd.	Jan 03 – Dis 09
ii.	GB3 Sdn. Bhd.	Feb 04 – Dec 09
iii.	Prai Power Sdn. Bhd.	Jun 05 – Dis 09
iv.	Tanjung Bin Power Sdn. Bhd.	Sept 06 – Dis 09

M&E AUDIT ON SABAH IPPs

In September 2010, ST appointed a Consultant to conduct audits on Independent Power Producers (IPP) plants in Sabah.

At the end of 2010, a kick-off meeting was held between Sabah IPPs, the consultants and the ST.

No.	IPP Plant	Audit Period
i.	ARL Power Sdn. Bhd.	May 04 – Mar 09
ii.	Serudong Power Sdn. Bhd.	Dec 04 – Oct 08
iii.	Ranhill Powertron Sdn. Bhd.	Jul 05 – Jun 08
iv.	Stratavest Sdn. Bhd.	Jan 04 – Dec 08
v.	Sandakan Power Corporation Sdn. Bhd.	Oct 04 – Sept 08

M&E AUDIT ON OTHER POWER GENERATION LICENCE HOLDERS

In addition, the ST was also actively preparing the terms of reference while inviting potential bidders to conduct M&E Audits on the following IPP plants:

i. Powertek Berhad
ii. Pahlawan Power Sdn. Bhd.
iii. Panglima Power Sdn. Bhd.
iv. Genting Sanyen Sdn. Bhd.
v. Port Dickson Power Sdn. Bhd.
vi. Teknologi Tenaga Perlis Power Consortium Sdn. Bhd.
vii. YTL Power Sdn. Bhd.
viii. NUR Generation Sdn. Bhd.
ix. NUR Distribution Sdn. Bhd.

The audit on the above IPP stations began in the middle of 2011 and was completed within five months as stipulated by ST.

INSPECTION ON ACTIVITIES OF LICENSEES

Inspections on the premises of licensees were conducted as a measure to monitor their operations to ensure licensing requirements have been met as well as to discuss operational issues. Throughout 2010, six visits to the premises of licensees were organised by ST.

List of Visits to Premises of Licensees

No.	Name and Address	Type of Public Licence	Capacity (MW)	Date of Visit
1.	Kuantan Port Consortium Sdn. Bhd.	Distribution	3.50	May 3, 2010
2.	See Sen Chemical Berhad	Generation	6.00	May 3, 2010
3.	Pengkalan Bekalan Kemaman Sdn. Bhd.	Distribution	0.35	May 4, 2010
4.	Tanjung Bin Sdn. Bhd.	Distribution	2,100	August 23, 2010
5.	Segari Energy Ventures Sdn. Bhd.	Distribution	1,303	August 25, 2010
6.	GB3 Sdn. Bhd.	Distribution	640	August 26, 2010

Among the issues raised during the visit were:

i. Compliance with licensing conditions stipulated by ST;
ii. Review on ST's licensed capacity;
iii. Review of registration of installation and competent persons requirements by ST regional office representative;
iv. M&E Audit on public generation licensees.

INSPECTION OF INSTALLATIONS, CONTRACTORS AND ELECTRICAL APPLIANCE VENDORS/ IMPORTERS/ MANUFACTURERS

In 2010, ST conducted 1,046 inspections on the operations of installations, contractors and electrical appliance sellers/ importers/ manufacturers compared to 596 inspections in 2009.

Area Office	Inspection			**Total**
	Installation	Contractor	Premise of Vendor/ Importer/Manufacturer	
Ipoh	30	30	21	**81**
Johor Bahru	16	25	6	**47**
Kota Bharu	49	9	9	**67**
Kota Kinabalu	57	7	8	**72**
Malacca	40	56	20	**116**
Butterworth	50	15	32	**97**
Kuantan	55	26	10	**91**
Petaling Jaya	299	77	3	**379**
Sandakan	63	11	22	**96**
Total	659	256	131	**1,046**

The following steps were taken to enhance the level of compliance to meet the requirements for installation registration and licensing of electricity supply:

- √ Increased monitoring and issuance of notices and legal action taken so that the owner or management of installations register and renew installation for Certificate of approval and obtain public licence to supply electricity.
- √ Increased compounds and prosecution for preventive measures and build awareness.

ST's inspection on unlicensed and unregistered power plant installations

The following initiatives have been carried out to enhance the level of compliance towards the need to obtain ST's approval for the manufacturing, importation and sale of electrical appliances:

- √ Strengthened ties and collaboration between ST and other enforcement agencies such as MDTCC, Customs, Police and SIRIM in monitoring and enforcement on electrical appliances sold, and brought into the country;
- √ Enhanced monitoring and increased notices issued on the premises of manufacturers, importers and vendors of electrical appliances who failed to obtain approval or label electrical appliances;
- √ Increased compound cases to enhance prevention and to build awareness;
- √ Revoking the certificate of approval of holders found to breach legal provisions.

ST officers inspecting electrical appliances sales

GAS INSTALLATION INSPECTION AND TESTING

A total of 240 inspections and testing of gas installations were conducted in 2010. Inspection of installations were conducted to ensure that the work performance of contractors and competent persons fulfill the stipulated standards and regulations while the inspection of current installations were part of measures to enhance the safety of gas installations already in operation.

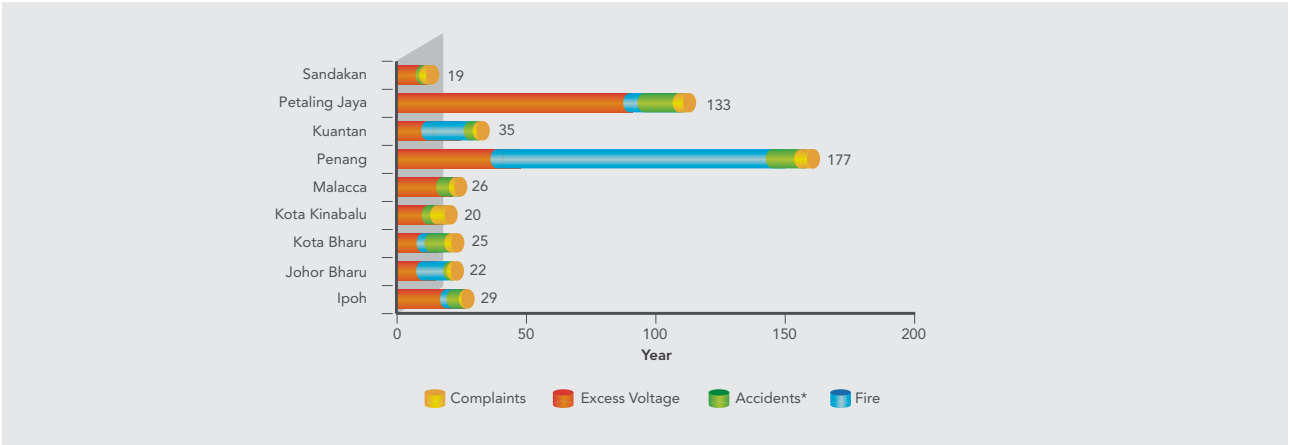
Inspection and Investigation Activities

Activity	Up to 2006	2007	2008	2009	2010
Inspection and Testing	1,306	11	30	4	240
Improvement or Stop Work Order on Gas System operations - TBC by client	365	1	0	293	314

COMPLAINTS, ACCIDENTS AND FIRE INVESTIGATIONS

A total of 338 investigations on complaints, accidents and fires were conducted by ST in 2010 from 299 in 2009. Of this, 69 were investigations into electrical accidents and 30 were investigations into fire believed to have been caused by electrical problems.

Investigations Conducted by Regional Office



Statistics on Investigations by Regional Offices

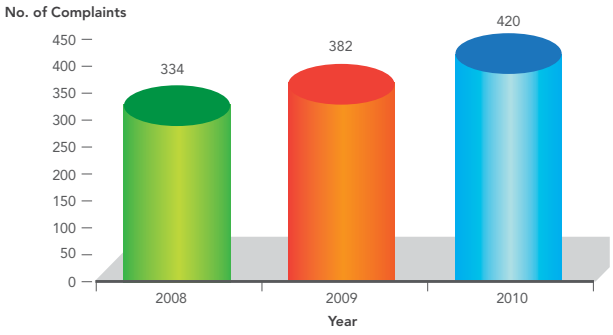
Regional Office	Complaint	Excess Voltage	Accident	Fire	**Total**
Ipoh	18	3	7	1	**29**
Johor Bahru	9	9	2	2	**22**
Kota Bharu	10	3	10	2	**25**
Kota Kinabalu	13	0	3	4	**20**
Malacca	19	0	5	2	**26**
Butterworth	46	112	13	6	**177**
Kuantan	10	15	7	3	**35**
Petaling Jaya	100	6	21	6	**133**
Sandakan	12	0	3	4	**19**
Total	**237**	**148**	**71**	**30**	**486**

In 2010, a total of 401 complaints or 96% of 420 complaints received were resolved, whereby ST provided the necessary response to the complainant and the utility provider was asked to provide feedback or take appropriate action.

Most problems or complaints brought up by the consumers related to the failure of utility companies to provide adequate services to consumers. Several steps have been taken by ST to address the issue. Further actions include organising dialogues and discussions with the utilities from time to time and ensuring that they always cooperate in providing feedback or taking appropriate action for each consumer complaint.

Moreover, monitoring of the activities of utilities will be intensified to reduce problems related to the supply and quality of electricity. With better communication between ST and the utilities, consumer complaints could be handled and resolved in a more expeditious manner.

Complaints Received from 2008-2010



Complaints Received in 2010 by Category

By Category of Complaint		Total	Resolved	Unresolved
SUPPLY SERVICES				
a.	Billing – Electricity billing, metering issues	76	67	9
b.	Electricity disruption	30	28	2
c.	Transmission line reserve or installation damage	15	13	2
d.	Tariffs and charges	9	9	0
e.	Public lighting, supply and consumer service issues	28	28	0
f.	Application for electricity connection	8	8	0
g.	Dangerous wiring and electrical installation	31	30	1
	Total	**197**	**183**	**14**
SUPPLY QUALITY				
a.	Over voltage	134	133	1
b.	Power quality (dips, surges etc)	3	3	0
	Total	**137**	**136**	**1**
ELECTRICAL APPLIANCE				
a.	Unapproved electrical appliances	8	8	0
b.	Others	8	8	0
	Total	**16**	**16**	**0**
COMPETENCY				
a.	Examination	2	2	0
b.	Electrical works	8	7	1
c.	Registration of competent persons	5	5	0
d.	Competency courses	5	5	0
e.	Abuse of competency certificates	4	4	0
f.	Duties of competent persons	2	1	1
g.	Others	2	2	0
	Total	**28**	**26**	**2**
ELECTRICAL INSTALLATIONS				
a.	Electrical wiring method based on standards	4	4	0
b.	Wiring standards	2	2	0
c.	Requirement to extend deadline	4	4	0
d.	Supervision & completion of installation	2	2	0
e.	Electricity theft	5	4	1
f.	Others	6	6	0
	Total	**23**	**22**	**1**
ELECTRICAL CONTRACTORS				
a.	Electrical Works	8	8	0
	Total	**8**	**8**	**0**
GAS SAFETY AND SUPPLY				
a.	Supply Disruption & Gas Leakage	1	1	0
b.	Gas Price	1	1	0
	Total	**2**	**2**	**0**
OTHERS				
	Others	9	8	1
	Total	**9**	**8**	**1**
	Overall Total	**420**	**401**	**19**

INVESTIGATION OF GAS ACCIDENTS

In 2010, three cases of gas accidents were reported. However, no deaths occurred. The accidents were caused by gas leakage due to consumer negligence and third party works.

Activity	Up to 2006	2007	2008	2009	2010
Gas Accidents	53	9	4	2	3

ENFORCEMENT TO ERADICATE ELECTRICITY THEFT

In 2010, the ST, together with TNB, SESB and the Royal Malaysian Police (PDRM), was directly involved in conducting enforcement to counter electricity theft. The team inspected 59 premises believed to have stolen electricity. From the raids organised, 10 investigation papers were initiated by the ST while two investigation papers were opened by PDRM as part of the actions taken on premises that have violated the law.

For all cases of electricity theft, the ST also advised TNB and SESB to act under Section 28, Electricity Supply Act 1990., with TNB and SESB are taking action on 27 cases.

A total of 5 cases of electricity theft were charged in court, and fines totalling of RM30,000 were issued, with each fine value between RM3,000 and RM8,000. For compoundable offences, there were 5 cases that accrued a total compound of RM10,000, ranging from RM1,500 to RM2,500 for each offence.

MONITORING UNDER TRANSMISSION LINES

Monitoring under transmission lines were intensified as it was found that there were many inappropriate activities conducted under these lines. The ST, in collaboration with TNB, conducted 24 inspections in areas that were close to the TNB way leave. From the inspections, several meetings and discussions were held with TNB and local authorities to resolve the issue of settlements existing under transmission lines. Among the actions taken by local authorities include demolition of buildings constructed in the land reserve under TNB lines.

Monitoring of activities under TNB lines

ST officers inspecting documents at a premise during a Ec-TNB joint raid to prevent electricity theft

ST and TNB Officers inspecting the distance of transmission lines from the illegally constructed building

Sunken Garden
To reduce the operational time of the jet fans, natural ventilation openings are introduced into the car park on each side of the ST Diamond Building, including a sunken garden at Basement 1 linking directly to the car park.

PROTECTING CONSUMER INTERESTS

REVIEWING TNB'S SUPPLY SERVICE PERFORMANCE STANDARD

A review of the supply service performance standard provided to consumers under condition 14 of the TNB licence was initiated in 2008, with emphasis on aspects that have always caused consumer dissatisfaction. To address this issue, the following two service levels were set:

i) Guaranteed Service Level (GSL) - when TNB's level of service fall below the levels defined, then the utility must pay a penalty in the form of rebates to consumers;
ii) Minimum Service Level (MSL) - which is the minimum service level that has to be achieved by TNB in giving its service to consumers.

The introduction of performance standards with a penalty element for non-compliance is something new and was objected to by TNB on the basis of its costly financial implications. Taking this into consideration, the performance standards were implemented in stages, beginning September 1, 2008. Enforcement of the penalty was postponed for the time being to further evaluate the financial implications on TNB should it be imposed. Since then, several discussions were held to finalise the TNB performance standards.

Looking at TNB's performance for the financial year 2009/2010, it was found that there were several areas where the level of compliance to MSL stood only at 80%. These areas include:

- Time taken to take corrective action on complaints on voltage or excess voltage;
- Time taken by the customer service officer or CMC 15454 to answer an incoming calls;
- Time taken to attend to meter problems after being informed officially or after consumer makes a request for appointment, visit, testing etc;
- Time taken to respond to meter problems or disputes or consumer requests for meter replacement, relocation, etc.

ADDRESSING COMPLAINTS ON UTILITY SERVICES

Overall, ST received 334 complaints throughout 2010 covering various service aspects. A total of 319 complaints or 95.5% had been resolved and 15 complaints are under investigation. In 2010, there was an increase in the number of complaints relating to electricity bills, metering, supply disconnection and reconnection issues. One of the reasons for the drastic increase was the decision made by TNB to read meters once in every 2 months, with estimated bills issued in between. The change initiated by TNB caused confusion among the public and this matter was raised in Parliament and the local papers.

Consequently, a series of discussions and dialogue with TNB were organised to determine the real reason for the confusion and discuss the measures taken by TNB. After studying the matter, it was found that several issues listed below caused confusion and dissatisfaction among the public:

- Confusion about the calculation of the current bill;
- Calculation of higher estimate bil; and
- Calculation of the RM20 monthly rebate.

TNB's delay in disconnecting overdue accounts was another major issue that caused problems to consumers in 2010. These cases usualy involved tenants who failed to settle their outstanding electricity bills, leaving the debts to the owner of the premise, who is the registered user. TNB's delay in disconnecting the supply have caused for outstanding bills of up to thousands of ringgit. One of the initiatives to solve this problem is to send reminders via short message service (SMS) to the owners of the account with outstanding bills. In addition, property owners could also monitor their tenant's electricity bill through e-services available on the TNB website. TNB will also disconnect supply via the feeder pillar, posts and nearby premises. For premises that could not be accessed to disconnect supply, TNB has been asked to obtain a court order to enter.

ST also have make revisions on customer complaints with the utility company in relations to electricity charges. Among the complaints received include:

I. Connection load charges;
II. Special industry tariffs (SIT) and power quality disruptions;
III. Change from medium voltage industry tariff to medium voltage commercial tariff; and
IV. Additional bills that were backdated

To address these issues, TNB took several steps to clear up the public confusion: Among the steps taken were to:

i. Implementing a new method of calculating electricity bills for ordinary power consumers, i.e. the electricity bills will be calculated based on actual usage if the billing period is the same or less than the number of days in a month;
ii. Implementing a new method of calculating estimated bills, i.e. the lower of the average consumption from the previous six months and the consumption of the previous month;
iii. Appealing to the Ministry of Finance to approve a new method of providing the government rebate of RM20.00 for consumers who receive estimated bills;
iv. Briefing the Public Complaints Bureau on the implementation of estimated bills and the method of calculating them;
v. Briefing Members of Parliament who raised the issue of estimated bill implementation;
vi. Using a new bill layout for ordinary power consumer (OPC) in stages;
vii. Publishing an advertorial on 'Understanding Your Electricity Bill' in 14 major Bahasa Malaysia, English, Chinese and Tamil dailies;
viii. Introducing facilities for the OPC to conduct Self Meter Reading (SMR). The initiative is implemented by card (mailed to TNB), via the Internet or SMS to the TNB station; and
ix. Holding regular meetings with Pos Malaysia Berhad to address issues raised such as late electricity bills, non-receipt of electricity bills and correcting wrong addresses.

Complaints regarding these issues have declined which indicates the effectiveness of actions that have been taken.

A total of 420 complaints were received, indicating a 9% increase from 382 complaints in the previous year. 79% or 334 complaints were related to electrical supply services and quality. Other complaints were about electrical appliances, electrical installations, electrical contractors and electrical competency that accounted 21% or 86 complaints of the total complaints.

The number of complaints on the supply and quality of electricity declined by 3.5% compared to 2009. Meanwhile, complaints in other categories increased 58% to 86, compared to 36 complaints in 2009.

DIALOGUE BETWEEN ST AND TNB

Annual dialogues are held between ST dan TNB to discuss and find the best solution to address electricity supply issues in an effort to provide the best service to the consumers. In 2010, the dialogue was held on July 5 and the following issues were discussed:

- bi-monthly bills
- connection load charges in Putrajaya and Cyberjaya
- electricity supply disruption
- power factor incentive
- electricity theft
- supply disconnection due to outstanding electricity bills
- guaranteed service level and minimum service level

ACTIVITIES TO RAISE PUBLIC AWARENESS

Compared to previous years, ST was more involved in activities to raise public awareness in 2010. It participated in 20 exhibitions throughout Malaysia, especially in 3 areas:

a) Electrical Safety
b) Piped Gas Safety
c) Energy Efficiency

A series of talks, seminars, dialogues and campaigns were held with various electricity industry activists or consumer groups. They included:

- Licensees such as Tenaga Nasional Berhad
- Industry / Commercial Groups
- Members of the Public / Educational Institutions / Schools
- Government Agencies / Local Authorities
- Theme Parks / Fun Fair / Construction Site
- Electrical Appliance Distributors
- Associations representing Contractors, Consultants and Other Parties

In conjunction with the National Consumer Month Campaign 2010 held by MDTCC, ST organised an electrical safety exhibition.

ST officer briefing YB Dato Sri Ismail Sabri Yaakob on electrical appliance safety at the Opening Ceremony of the National Consumer Month in Angkasapuri, Kuala Lumpur.

TALKS, SEMINARS AND DIALOGUES

As part of its effort to provide information, suggestions and feedback on policies, rules, standards, practices and domestic and global related issues involving the electricity industry, regional offices organised a series of talks, dialogues and seminars for members of the public and parties directly involved in the electricity supply industry.

Some of these activities were organised in collaboration with local associations and authorities. The following are statistics on the talks and dialogues held:

ST Office	Seminar	Dialogue
Petaling Jaya	3	7
Malacca	10	5
Johor Baru	3	2
Ipoh	6	12
Kota Baharu	11	13
Kuantan	11	3
Butterworth	10	2
Kota Kinabalu	5	11
Sandakan	10	1
Total	**69**	**56**

SEMINAR ON ELECTRICAL SAFETY AWARENESS (SESA) 2010

In 2010, the major of the ST's electricity safety enhancement initiatives related to TNB's Electricity Safety Awareness Programme that was held at state level, in collaboration with the State Education Departments. The ST participated in all the seminars organised at eight locations, which involved the dissemination of information to teachers on the importance of electrical safety for the ultimate benefit of school children.

ELECTRICAL INSTALLATION SAFETY CAMPAIGN

The objective of the campaign was to inform owners or managers of electrical installations about the legal requirements that have to be fulfilled to ensure the safety of electrical installations. Four campaigns were organised at several locations in 2010 in collaboration with the Ministry of Housing and Local Government (MHLG), Real Estate dan Housing Developer's Association Institute (REHDA Institute) and the Federation of Malaysian Manufacturers (FMM).

PROGRAMMES TO PROMOTE ST

The ST's involvement in raising awareness on issues relating to electricity supply indirectly informed people of its function and roles. It is hoped that this will encourage the public to refer to ST pertaining to any problems on the quality of supply and safety of electricity.

The ST's role also includes promoting green technology and energy efficiency in office buildings. One of its initiatives is the support of the "Touchpoint" programme, undertaken with the Minister of Energy, Green Technology and Water, to promote electrical safety and energy efficiency to the local community.

Furthermore, 13 Programmes with TNB Community Leaders have been held to share information about the importance of electrical safety and the efficient use of electricity; also to understand the problems faced by the local community with regard to electricity supply through dialogues between community leaders and ST.

ST BRIEFING ON ELECTRICITY SUPPLY IN SABAH FOR NGOs

A briefing session on the electricity supply situation in Sabah was held on March 12, 2010 for organisations, associations and Non-Governmental Organisations (NGO) to explain the electricity supply situation to stakeholders in Sabah.

PUBLIC ANNOUNCEMENTS

In addition to image building and delivering the message that the Government intends to reduce subsidy, the ST also used the media to help disseminate messages on enforcement. During the Hari Raya Aidilfitri celebrations from August 30 to September 3, 2010, its public notifications related to distributors and sellers of electrical appliances that do not carry the ST-SIRIM label. These were published in eight local Malay, English, Mandarin and Tamil newspapers.

As a result of the publicity, the ST received information and complaints from members of the public who wanted to play their part in eradicating the sale of uncertified electrical appliances in the market. The information was used as input by ST to take appropriate actions and prosecute offenders.

PUBLIC SERVICE ANNOUNCEMENTS ON TELEVISION

To increase public awareness of current issues under ST's regulations, public service announcements on electrical safety and energy efficiency has continuously being promoted in 2010. It is hoped that the initiatives would help enhance electrical safety practices and promote energy efficiency among the wider viewing audience. To achieve this objective, ST aired 238 public service announcements in Radio Televisyen Malaysia (RTM) (TV1 and TV2) and Media Prima (TV3, NTV7, TV9). The following is the breakdown of announcements for both television networks:

No.	Network	Channel	No. of Slots	Period of Broadcast
1.	Radio Televisyen Malaysia (RTM)	TV1	52	May to December 2010
		TV2	62	
2.	Media Prima	TV3	62	May to December 2010
		NTV7	26	
		TV9	36	
	TOTAL BROADCASTS		238	

Public service announcements through the mass media is also part of the KeTTHA Communications Plan, in line with the Government's goal of increasing public awareness of its subsidy reduction programme that will be implemented in stages.

Public service videos on electrical safety and energy efficiency were also uploaded on ST's website for viewing and downloads. It can be used for programmes organised by schools, educational institutions, factories and private companies.

APPEARANCE IN TELEVISION TALK SHOWS

During the year under review, ST took part in talk shows to highlight issues related to electricity and gas safety, and energy efficiency to increase public and consumer awareness. Among the talk shows involving ST in 2010 include:

2010 | Date	Show	Scope of Discussion
4 September	"Hujung Minggu Malaysia" on TV1	Live interview with En. Abdul Rahim Bin Ibrahim, Director, Department of Electrical Safety, on electrical safety measures during the festive season.
7 September	"Malaysia Hari Ini" on TV3	Live interview with En. Abdul Rahim Bin Ibrahim, Director, Department of Electrical Safety, on electrical safety measures during the festive season.
29 September	"Selamat Pagi Malaysia" on TV1	Live interview with En. Yusni Bin Sharif, Head of the Gas Safety Unit, Department of Gas Safety and Supply, on the safe consumption of piped gas.
1 November	"Wanita Hari Ini" on TV3	Live interview with Ir. Francis Xavier Jacob, Director, Department of Energy Management and Industrial Development, ST, on efficient electricity consumption by choosing electrical products with the energy efficiency label (STAR Rating).
20 November	"Nasi Lemak Kopi O" on TV9	Live interview with En. Abdul Rahim Bin Ibrahim, Director, Department of Electrical Safety, ST, on electrical safety measures during the flooding season.

The ST also took the opportunity during talk show slots to air video clips relating to electrical safety and energy efficiency, and highlight materials published by ST to the general public. The strategy was effective as ST received many requests for its videos and publications from viewers to be used as reference and education material.

Other than ST appearance in talk show programmes, ST was also invited to talk shows on electrical safety and energy efficiency on TV1 and TV3 in conjunction with the Consumer Day 2010 celebrations.

The ST is confident that the appearance of its top management to provide consumer information on talk shows would strengthen its credibility as an energy regulator.

Low-E Glaze Glass
Using low-e glaze glass allows daylight into the ST Diamond Building and minimizes heat gain from the sun.

DEVELOPING A STRONG REGULATORY FRAMEWORK

NATIONAL ENERGY DATABASE

DEVELOPING MORE DETAILED NATIONAL STATISTICS

For a rapidly developing country like Malaysia which is on its way to becoming a developed nation, the demand for energy is expected to rise annually to fulfil the needs of expanding industries. Electricity generation in Malaysia is highly dependent on fossil fuels such as natural gas, coal, diesel and oil. Based on statistics, only 13% of the energy produced are from renewable energy sources such as hydro, biomass and solar. However, in reality, fossil fuels are finite natural resources and would one dayl be completely depleted. Thus, good and efficient energy management has to be put in place to ensure sufficient fuel to fulfil energy demands for the long term.

Detailed, complete, accurate and updated energy statistics are vital for a developed nation to enable it to monitor the energy situation and facilitate proper future energy planning and policy decisions. Realising its importance, ST established a new unit, i.e. the Energy Information Unit, in the middle of 2009 which is responsible for collecting, storing and providing information on all the country's energy data. The establishment of this unit is in line with the government's aspiration and aim of turning the ST into the national energy database centre.

IMPROVEMENT IN THE ST ENERGY DATABASE SYSTEM

In 2010, the ST took steps to upgrade the current database system by appointing consultants to develop a more comprehensive on-line system. The integrated system to be developed includes a more interactive energy database management application where the data provider can provide online data to be processed and used in the Energy Balance Report, Statistics Report and Electrical Industry Report and for economic analysis such as energy projections, energy demand and supply forecasts and other energy related studies. The online database system will be accessible by the public from within the country and overseas for the latest energy information.

PREPARATION OF THE NATIONAL ENERGY BALANCE (NEB) REPORT

The source of reference that is often cited by energy analysts is the National Energy Balance (NEB) Report published by the Ministry of Energy, Green Technology and Water (KeTTHA). The NEB report for 2009 and earlier years published by KeTTHA was prepared by the Malaysian Energy Centre (MEC), now known as the Malaysian Green Technology Corporation (GreenTech Malaysia). However, due to the changes in the functional structure that took place at GreenTech, KeTTHA has given mandate to the Energy Commission to prepare NEB Report from 2010 onwards.

The process of taking over the preparation of NEB was done step by step and the first meeting with KeTTHA and GreenTech was held on October 1, 2010. Among the important issues discussed was the handover of NEB tasks involving the relocation of the MEDIS (Malaysia Energy Data Information System) server. MEDIS is a software used in the preparation of NEB and EIB (Energy Information Bureau) reports. The physical handover of both tasks were planned for early 2011.

The NEB report covers comprehensive statistical data including crude oil, natural gas, petroleum products, coal and electricity. Sources of energy are categorised by manufacturing, transformation and final demand which includes demand from households, commercial transport, industry, agricultural and non-energy sectors. The report is the main source of reference for analysts, policy makers, and local and overseas students. As the Energy Information Unit (EIU) is responsible for NEB data, indirectly, all deliveries and distribution at the international level must go through this Unit. Among the international organisations involved are the International Energy Agency (IEA), United Nations Statistics Division (UNSD), Asia Pacific Economic Cooperation (APEC) and ASEAN Centre for Energy (ACE).

INTERNATIONAL INVOLVEMENT IN THE PREPARATION OF NATIONAL ENERGY STATISTICS

PERMANENT MEMBER OF THE APEC EXPERT GROUP ON ENERGY DATA AND ANALYSIS (EGEDA) MEETING

EGEDA is the body responsible for providing energy information to the Asia Pacific Economic Cooperation (APEC). It collates energy data from the APEC region, manages and coordinates the operation of the APEC Energy Database, gathers information on energy related policies in APEC countries and reviews and advises research activities conducted by the Asia Pacific Energy Research Centre (APERC).

ST is Malaysia's representative to EGEDA, whose objective is to contribute high quality energy data and help draft energy policies to facilitate analysis of the energy sector in the region.

MALAYSIA ENERGY OUTLOOK

Malaysia is involved in the South East Asian region energy sector via the ASEAN Centre for Energy (ACE) under the ASEAN Energy Outlook project. ST was appointed by the Ministry of Energy, Green Technology and Water as Malaysia's representative in preparing the national energy sector projection reports up to 2030. With the utilization of Microfit and LEAP software plus the various sources on additional information about the energy sector in the future, the national energy model will be developed to make projections up to year 2030.

The model has also been used by other Government sectors such as the Economic Planning Unit (EPU) and the Ministry of Natural Resources and Environment (MNRE). As an organisation responsible for the model, training and capacity building t is essential to enhance the quality of projection for better accuracy and precision. This project is done with the collaboration of Japanese Government, with the aims to provide energy projections for ASEAN up to 2030 and help enhance capacity in the field of energy modelling.

1st. Workshop Of the Energy Supply Security Planning in ASEAN (ESSPA) in Jakarta, Indonesia from October 18 – 22, 2010.

JODI (JOINT ORGANIZATIONS DATA INITIATIVE) FOR OIL AND GAS

JODI is an initiative of six organisations i.e. APEC, EUROSTAT, IEA, OLADE, OPEC and UNSD with members from 90 countries representing 90 per cent of the world oil market. The main purpose of establishing JODI is to build the latest, most comprehensive, high quality database for the stability of the world markets. In an effort to mitigate the volatility of world markets, JODI hopes to alleviate the impact of the world oil and gas prices to strengthen investor confidence.

Malaysia, through APEC, also contributes data for the activities of JODI. Oil and gas data is collected monthly and tabulated according to the format required before submission to IEEJ, the JODI secretariat. Malaysia's involvement since the formation of JODI to date highlights the country's commitment to the world on energy data. In time, Malaysia will enhance the quality of JODI data to be on par with the world's advanced countries. ST has been given the mandate by the Government to implement activities related to JODI. This includes gathering data from the Malaysia Statistics Department and PETRONAS.

STUDY ON THE ROAD MAP FOR THE LIBERALISATION OF ELECTRICITY SERVICES AND EQUITY STRUCTURE OF THE ELECTRICITY SUPPLY INDUSTRY

In line with the directive issued by the Minister of Energy, Green Technology and Water during the post cabinet meeting no. 23/2010 on September 22 2010, a study was conducted to identify steps to move forward to establish free markets for the energy supply industry, apart from studying the practices of other countries relating to foreign equity holdings in companies involved in the energy supply sector.

A working paper on the study was presented at the ST meeting in October. ST will continue to monitor developments in the energy industry and the Government's plan to liberalise the industry and provide feedback required by KeTTHA from time to time.

CURRENT CHALLENGES

To achieve the objective of turning ST into a 'one stop centre' for national energy data, several challenges have to be overcome, especially in terms of data collection from various sectors and the capability as well as expertise to manage the data collected. Several initiatives have been identified to address the issues including organising workshops for data providers to better understand statistical data for energy balance and enhancing the capabilities and expertise to collect and process energy data. Data collected to date is still incomplete and not as detailed as required by international standards. Thus, sectors without detailed data have been identified and efforts to obtain the data will be made through meetings with the relevant agencies and parties. The plan to develop capacity and expertise among employees will begin next year through courses or workshops related to data collection and methodologies, preparation of energy statistics and energy balance schedule. In addition, expertise in energy data collection, modelling capability, economic analysis preparation and short and long term projections in the energy sector would also be required.

AMENDING THE ELECTRICITY REGULATIONS 1994 TO COMPLY WITH THE AHEEERR AGREEMENT

The current regulations require appliance manufacturers to obtain a certificate of approval from ST after the appliances have undergone SIRIM's testing process. Importers of controlled appliances also have to obtain approval from ST and undergo consignment tests by SIRIM before the imported appliance can be marketed in the country.

Meanwhile the ASEAN Harmonised Electrical and Electronic Equipment Regulatory Regime (AHEEERR) agreement signed on December 9, 2005 in Kuala Lumpur underlines the following:

a) any parties who wish to operate businesses such as manufacturing, importing, selling and advertising of controlled electronic and electrical equipment (EEE) must register with regulatory bodies in member countries.

b) regulatory bodies in member countries should give accreditation to an organisation to carry out testing on equipment to be known as the Conformity Assessment Body (CAB). CAB shall issue the Certificate of Conformity (CoC) to EEE manufacturers. With regard to this, ST has accredited SIRIM as Malaysia's CAB.

c) a test report and CoC issued by CAB from any member country should be mutually accepted by other members of ASEAN. It means that consignment tests on imported electrical equipment will no longer be required.

d) for EEE manufactured by countries outside ASEAN, the test and COC report issued by a listed CAB shall be accepted via agreements between parties from the respective countries.

e) the supplier responsible for marketing EEE in the market should provide and keep technical files that can be referred to by the regulatory authorities.

f) suppliers should keep the technical files at least 10 years after the last EEE is manufactured in the factory.

g) a CAB listed in ASEAN countries should also keep technical files of tested and verified EEE for at least six years after the expiry date of the CoC.

Subsequently, ST took the necessary steps to comply with the AHEEERR agreement by proposing amendments to the Electricity Regulations 1994.

ELECTRICAL POWER QUALITY BASELINE STUDY IN PENINSULA MALAYSIA

Power quality (PQ) issues have a huge financial and operational impact on the industry. In the last few years, complaints on power quality have cropped up and they should be given due attention. To address this issue, a Power Quality Baseline study was conducted by ST beginning in April 2010. The sudy will be conducted for a period of 2 ½ years to measure the level of power quality in Malaysia. The results will contribute to the standards related to power quality to be enforced by industry players.

The length of the study is 24 months, with its objectives to measure and collect data. Data collection will be done in 2 ways; by installing the power quality data recorder for 1 day in 500 locations and installing power analysis equipment for 1 year in 50 selected locations. The installation of power quality data recorder in 250 installations and quality analysis equipment in 25 installations has commenced in the Northern and East Coast of Peninsular Malaysia.

To add to this, a seminar on power quality was held from July 12 to 14, 2010 at the Putra World Trade Centre which attracted stakeholders from the industry.

NEW MECHANISM FOR APPLICABLE COAL PRICE

One important initiative which has been agreed, and obtained the approval of ST is the new mechanism to set the Applicable Coal Price (ACP) used by TNB, TNB Fuel Services (TFS) and coal power plants in Peninsular Malaysia for the purpose of scheduling and dispatch, coal acquisition and payment of energy cost. Prior to this, the ACP is specific to each coal power plant based on the coal supply contract signed between TFS and the supplier. The mechanism created a situation in which ACP always fluctuates, making it harder for all parties to predict the stock of coal and the scheduling and dispatch of coal generation units. To address this problem, TNB and TFS have proposed a new mechanism using the concept of 'common' ACP.

The concept produces a more stable quarterly ACP when all coal required in Peninsular Malaysia were collated and classified either as bituminous and sub-bituminous coal. The weighted average process for each plant is then determined based on the classification ratio formalised in the Power Purchase Agreement (PPA). Generally, the concept ensures that sub-bituminous coal plants are given the highest merit level and bituminous coal placed at the lowest merit level while stations with a mix of sub-bituminous and bituminous coal will be in between the level of bituminous and sub-bituminous coal plants.

STUDY ON DEVELOPING INCENTIVE BASED REGULATION (IBR)

As a follow up to the study on Electricity and Gas Tariff Structure in Peninsular Malaysia and Sabah, ST introduced the concept of Incentive Based Regulation (IBR) to determine electricity and piped gas tariffs with the intention of strengthening the effective role of economic regulation. One of the important outputs of the study is the preparation of eleven Regulation Implementation Guidelines for the electricity supply and piped gas sectors. During the study, a series of training course were conducted while consultations between stakeholders and ST were also held.

The IBR concept will promote changes in the review and determination of electricity and gas tariffs. It will enhance transparency in the decision making process by the Government through a well-defined mechanism and guidelines. With this mechanism, utilities and consumers would be more prepared and have a better understanding of tariff adjustments.

Automatic shutters
The atrium design atrium allows natural light to be fully utilised for ST Diamond Building office space. The dome is equipped with automatic shutters that has six configuration to ensure that appropriate lighting levels at all times.

ENHANCING ORGANISATIONAL CAPABILITIES

AMENDMENTS TO THE ENERGY COMMISSION ACT 2001

The Energy Commission Act 2001 [Act 610] was amended and became effective from February 11, 2010. Among the amendments made to the Act are:

COMMISSION MEMBERSHIP

- the expansion of the Committee's membership from a maximum of 7 members to a maximum of 11, including the Chief Executive Officer (CEO);
- change in the membership tenure of the Commission from 2 terms of 3 years to 3 terms of 2 years;
- revocation of appointment, resignation and vacating the membership of the Commission, not including the CEO;

FUNCTIONS, SCOPE AND MANAGEMENT OF THE COMMISSION

- separation of the Chairman's duties from the CEO whereby the CEO is appointed by the Minister with the terms and conditions determined by the Minister;
- the appointment of a CEO to execute his duties and obligations, administer and manage daily tasks and affairs, monitor officers and comply with the instructions of the Minister and the Commission;
- empower the Minister to appoint an officer of the Commission to temporarily act as the CEO when the position becomes vacant, during his absence from work or away from Malaysia or if the CEO is unable to perform his duties;

PROTECTING THE INTEREST OF THE COMMISSION

- prevent the use of the gazetted symbols and representations of the Commission and enforce a fine not exceeding RM300,000 or imprisonment for a term not exceeding three years or to both for offences related to these symbols and representations;

STRENGTHENING FINANCIAL CONTROLS OF THE COMMISSION

- seek the approval of the Minister and the concurrence of the Minister of Finance when entering any contract which requires the Commission to pay or receive an amount exceeding 10 million ringgit;
- the Statutory Bodies (Accounts and Annual Reports) Act 1980 [Act 240] shall apply to the Commission for its annual accounts and report; and
- obtain permission to use of the Commission's Provident Fund to provide loans, scholarships and financial advances to its officers.

ORGANISATIONAL RESTRUCTURING

On October 14, 2010, the Minister of Energy, Green Technology and Water approved the restructuring of ST involving a revamp of the organisational chart to ensure that all of ST's functions stipulated in the ST Act could be fully implemented.

The restructuring involved:

a. eliminating the position of Chief Operating Officer (COO) to create a flatter structure so that the communication process among departments and top management would be more effective;

b. enhancing the role and function of Departments to improve the safety of electricity and piped gas supply, complaints management, database management and procurement; and

c. grade adjustments for the position of Department Director, with the position of Director (Electricity Supply) upgraded from Grade 7 to Grade 8.

The organisational restructuring saw the number of employees growing by 30% to strengthen ST's operations with the addition of 68 new positions (57 Executives and 11 Non-Executives) at the Head Office and Regional Offices.

Total staff intake for 2010 was:

a. Executive: 12
b. Support Group: 2

The recruitment of executive level employees include candidates who have extensive experience in the energy industry to strengthen the regulatory functions of ST.

DEVELOPING EMPLOYEE CAPABILITIES

DEVELOPING A TALENT MANAGEMENT FRAMEWORK

The ST initiated a talent management framework with the objective of creating an extensive framework for policies and activities to be improved or established to develop human capital in a more comprehensive and organised manner. An internal team was formed to draft the framework. The development of the framework is expected to be completed by the second quarter of 2011.

COMPETENCY DEVELOPMENT

ST has always provided continuous training to develop the staff competencies. All executive officers have attended at least one training session to develop their competencies while almost 90% of Non-Executive staff attended training for 2010. Training sessions organised were to improve technical and regulatory competency, skills development and behavioural competencies.

About 97% of the courses were related to technical competency development while the rest were to develop behavioural competency.

PERFORMANCE MANAGEMENT

Performance management based on Key Performance Indicators or KPI was initiated and the evaluation of each department was based on its KPI achievements for 2010. This would encourage the departments to be more focussed on achieving the targets set. A total of 51 KPIs were identified with 15 strategic objectives.

DEVELOPING AN ONLINE APPLICATION SYSTEM

DEVELOPING ST'S WEBSITE

ST'S new official website *www.st.gov.my* was launched on August 2, 2010. The content structure of the new website was improved to enable visitors to obtain information related to competent persons, contractors, equipment, installations, energy efficiency and other matters such as application procedures for services handled by ST and also a list of institutions accredited by ST. In addition, information on the Grid Code and energy related content could also be obtained from this website.

ST also provides various online services that could be conveniently accessed from its website such as OLRC, E-Permit, *My Bayar* and E-aduan to enable the public to make applications, check the status of their applications and submit complaints on the problems that they face.

E-PERMIT

In line with the National Single Window (NSW) policy, the Government wants all permit applications from issuing agencies to be made online through the e-Permit module system developed by Dagang Net Technologies Sdn Bhd under the supervision of the Ministry of Finance. At the ST level, the e-Appliance system will be integrated with the e-Permit system.

e-Permit integrates the e-Appliance (ST), e-Permit (Dagang Net Sdn. Bhd) and SMK (Customs Information System – Customs) applications online. The e-Permit system acts as a one-stop-centre for each application for the certificate of approval. An application received from the importer online through e-Permit will be sent electronically to ST's e-Appliance system for the process of obtaining approval and certification/permit. Approvals will be sent electronically to the Customs (SMK Systems) before the control item is released from their custody.

Developed to replace the current Appliance Module in the ECOS system, the e-Appliance system processes applications for approval to import and manufacture according to ST's requirements and also incorporates requirements of the ASEAN Harmonised Electrical and Electronic Equipment Regulatory Regime (AHEEERR), which becomes effective from January 1, 2011.

Applications via the e-Permit system can be made online from any where and at any time. The applicant must enter all application data which is normally done by an ST officer. With the implementation of the system, the approval process can be shortened from 14 to 5 days.

In July 2010, ST together with Dagang Net Technologies Sdn Bhd held a series of five seminars to inform manufacturers and importers about applications via the e-Permit system. Feedback was obtained from the participants and the ST responded accordingly and took the necessary action.

The e-Permit development project was launched on October 2009 and completed in June 2010. The online system was first used on September 1, 2010, when applications were received online and manually during a transition period and became fully operational and integrated with SMK on October 1, 2010. Since commencing its online operations, a total of 2,093 applications has been received.

Activities such as campaigns, dialogues and briefings on how to apply for certificates of approval and release letters via the e-Permit system for manufacturers and importers of electrical equipment were organised in collaboration with Dagangnet and ST regional offices in Petaling Jaya, Butterworth and Johor Bahru. A dialogue with TEEAM on the e-Permit system was held on December 1, 2010 at ST's main office.

ONLINE REGISTRATION OF CONTRACTORS (OLRC)

ST introduced the full online registration of electrical contractors in 2010. The main objective is to improve and enhance the ST's registration process of electrical contractors.

The Malacca ST regional office was selected to pilot the implementation of the OLRC system. Several discussions were held to obtain feedback and understand the actual registration process of the Malacca ST regional office. The OLRC system was integrated with the current ECOS system to process applications until the certificate of approval is issued.

The implementation of OLRC system was then extended to all eight regional offices from February 2010. The OLRC system, makes it easier for applicants including electrical contractors, electrical service contractors, switchboard manufacturers, private wiring units and electrical repair contractors to make online applications. Previously, the process involved the manual completion and submission of forms to the ST office for processing. To date, only new applications could utilise the OLRC system.

In line with the Government's call to provide more effective services to its customers, ST implemented a faster online application process for customers who want to obtain the services of a registered electrical contractor. The process which previously took 14 days can now be completed in 3 working days. Customer response was very encouraging and the implementation was completed on August 3, 2010 at the Perak regional office.

First group of Electrical Contractors in the ST Perak Office to obtain their Certificates in August 3, 2010.

e-ADUAN SYSTEM

On 13 July 2010, ST introduced the e-Aduan system for consumers. The system serves as a channel to receive complaints online from consumers, and at the same time consolidate complaints received from other channels such as the mass media, conventional mail, staff emails and emails to ST and over the counter complaints at ST's offices.

ST also receives complaints via KeTTHA, Public Complaints Bureau (PCB), Consumer Association of Penang (CAP), Ministry of Domestic Trade, Cooperatives and Consumerism (MDTCC) and the National Consumer Complaints Centre (NCCC). Complaints related to the electricity sector and piped gas supply relate to the following categories:

a. electricity supply and safety;
b. quality of supply;
c. electrical appliance;
d. electrical competency;
e. electrical installations;
f. electrical contractors; and
g. safety and supply of piped gas

Each complaint made via the e-Aduan system is analysed to identify the issue. Complaints requiring further investigation is submitted directly to the nearest regional office. ST officers will conduct investigations as soon as possible and take the appropriate action. The response time set in the Client Charter is 15 days. Meanwhile, for complaints requiring further action and investigation, the response time is within 30 days unless more time is required to investigate the case.

Complaints Received from 2008 – 2010

DEVELOPMENT OF STANDARD OPERATING PROCEDURES (SOP)

A working committee was formed to re-evaluate current work practices and develop SOPs to improve the quality of service in line with current requirements. The areas studied include:-

i. Current work practices that are no longer suitable.
ii. Ways to simplify work processes without contravening legal requirements
iii. Creating a realistically achievable Client Charter
iv. Streamlining work processes for all regional offices
v. Clearer segregation of duties
vi. Prioritising customer requirements

The SOP workshop was held from May 10 – 12 May, 2010 at Awana Genting Highlands to develop 39 sound and effective work processes, complete with the Client Charter. The SOP has been in use since June 2010 and will be re-evaluated from time to time according to requirements.

Workshop to draft ST Standard Operating Procedures (SOP) held in Genting Highlands from May 10 – 12, 2010. ST officers who are members of the SOP Committee

Floor Slab Cooling System
The floor slabs have pipes embedded in the concrete slab. Chilled water is run in these pipes at night to cool the ST Diamond Building slab down to 18 degrees Celsius. These slabs will radiate cooling to the occupants to provide comfort at room temperature controlled at 24 degrees Celsius.

MOVING FORWARD

122 ST TRANSFORMATION PLAN

ST TRANSFORMATION PLAN

During the Management Workshop held in 2010, ST developed a Transformation Plan that set the direction of the organisation till 2020. The plan consists of three sub-plans:

1. Economic, Technical and Safety Regulation Enhancement Plan
2. Regulation Framework Rationalisation Plan
3. Corporate Development Plan

All three plans were developed with the objective of achieving key results as listed below:

DELIVERABLES

Energy Market

- The energy supply industry markets are highly progressive, competitive and resilient.

Industry Players

- All parties/players involved in the energy supply industry play their roles and operate in an orderly and well-controlled manner; constantly in a high state of readiness; and with the highest standard of professionalism.

Public And Consumers

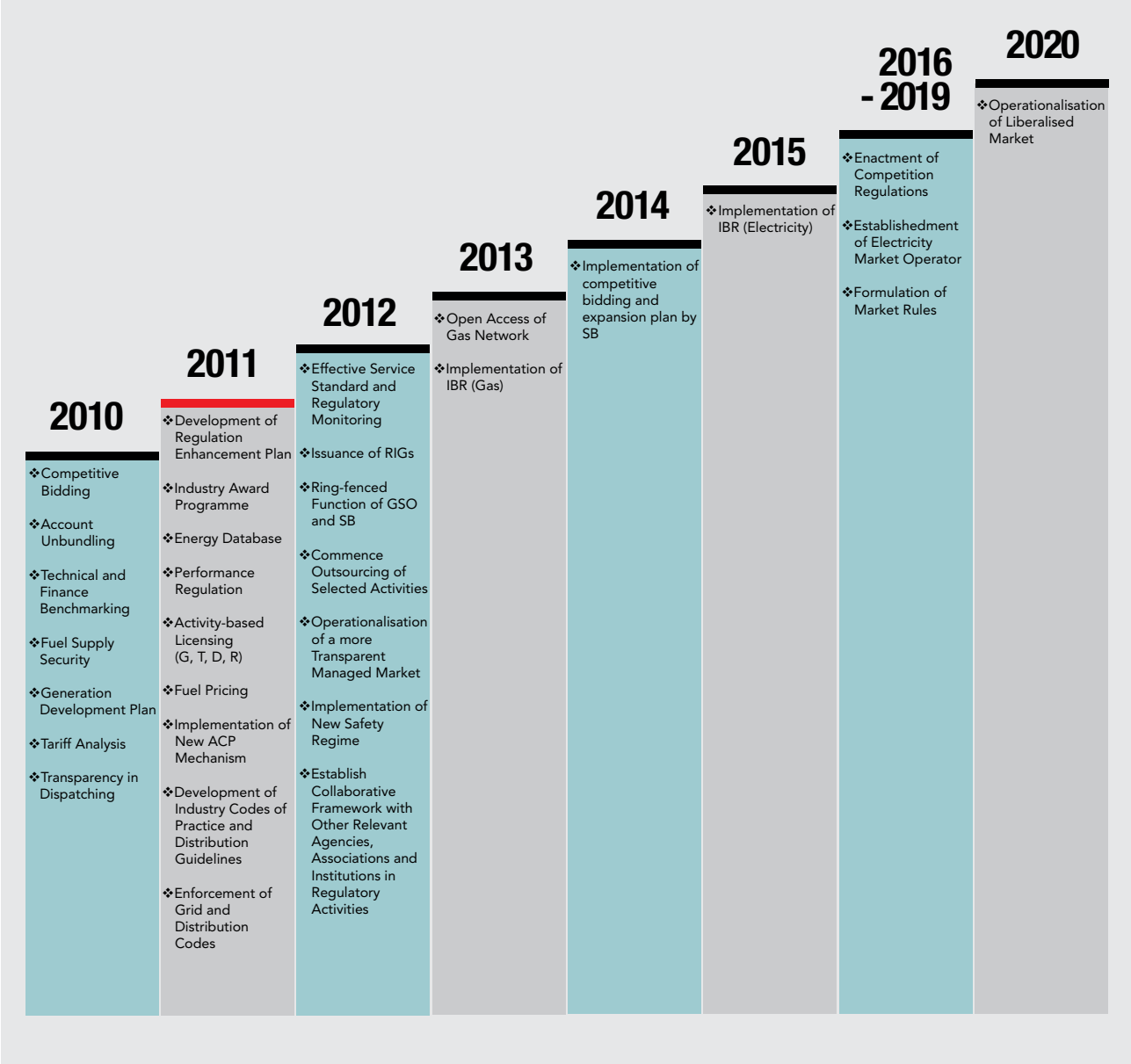
- Public interest, in general, and consumer interests, in particular, are well protected in the context of decisions and activities by energy supply industry players.

Government

- The Government, in general, and the Minister, in particular, are constantly in a high state of being advised on all matters pertaining to the running of energy supply industry and to situations regarding the availability and requirements for energy in Malaysia.

The details of the three plans are as follows:

1. ECONOMIC, TECHNICAL AND SAFETY REGULATION PLAN



2. REGULATORY FRAMEWORK RATIONALISATION PLAN: 2011-2020

The regulatory functions of ST being re-evaluated:

1. Competency Examination
2. Approval of Electrical Equipment
3. Capacity Planning
4. Competitive Bidding
5. ATI and ATO Processing (GMSB)
6. Promotional Activities
7. EE/RE Incentive Processing (SEDA)
8. RE Activities (SEDA)
9. Accident Investigation (DOSH)
10. Fire Investigation (BOMBA)
11. Electricity and Gas Theft (PDRM)
12. EE Labeling Approval (SIRIM)
13. Contractor Registration (CIDB)
14. Registration of Installations

3. CORPORATE DEVELOPMENT PLAN

2011

- Talent Management and Development Plan
- Reallocation of manpower based on priority
- Event Management Outsourcing
- Computerisation of processes
- Review of Terms & Conditions
- Financial Plan Review
- Rationalization of HQ and Regional Office functions
- Client Charter Review
- Implementation of online Performance Management system

2012

- Enhancement of ICT infrastructure for HQ-Regional Office communications
- Payroll Outsourcing
- Recruitment Outsourcing
- IT Maintenance Outsourcing
- Re-Train and Re-Skilling of manpower
- Legal Services Outsourcing

2013

- Establishment of EC Training Centres

2014-2015

- Review of Terms and Conditions of Services
- Review of Organisational Structure and manpower Requirements

Water Efficiency
Rainwater is collected from the crown of the dome roof where it is channeled to a rainwater tank. The rainwater collected is used for toilet flushing and irrigation of the landscape on the roof and ground floor of the ST Diamond Building.

ANNUAL FINANCIAL STATEMENTS

SIJIL KETUA AUDIT NEGARA

CERTIFICATE OF THE AUDITOR GENERAL ON THE FINANCIAL STATEMENTS OF ENERGY COMMISSION FOR THE YEAR ENDED 31 DECEMBER 2010

I have audited the financial statements of Energy Commission for the year ended 31 December 2010. These financial statements are the responsibility of the management. My responsibility is to audit and to express an opinion on these financial statements.

The audit has been carried out in accordance with the Audit Act 1957 and in conformity with approved standards on auditing. Those standards require an audit to be planned and performed to obtain reasonable assurance that the financial statements are free of material misstatement or omission. The audit includes examining records on a sampling basis, evidence supporting the amounts and disclosures in the financial statements. It also includes assessment of the accounting principles used, significant estimates made by the management as well as evaluating the overall presentation of the financial statements. I believe the audit conducted provides a reasonable basis for my opinion.

In my opinion, the financial statements give a true and fair view of the financial position of the Energy Commission as at 31 December 2010, the results of its operations and the cash flows for the said year in accordance with the approved accounting standards.

(HJH. ZAINUN BT. TAIB)
o/b AUDITOR GENERAL
MALAYSIA

PUTRAJAYA
JULY 7, 2011

DECLARATION BY THE OFFICER PRIMARILY RESPONSIBLE FOR THE FINANCIAL MANAGEMENT OF ENERGY COMMISSION

I, Ir. Ahmad Fauzi Bin Hasan, Chief Executive Officer primarily responsible for the financial management of the Energy Commission, do solemnly and sincerely declare that the Financial Statements comprising of the Balance Sheet, Statement of Income and Expenditure, Statement of Accumulated Funds and Statement of Cash Flows and notes to the Financial Statements, are to the best of my knowledge and belief, correct and I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of the Statutory Declaration Act, 1960.

Subscribed and solemnly declared)
by the above named at Kuala Lumpur)
this..JUNE 14, 2011.....)

.....

Before me,

PESURUHJAYA SUMPAH
No: W 429
Nama: MOHD NOOR BIN AHMAD
PESURUHJAYA SUMPAH MALAYSIA

Mohd Noor Bin Ahmad
Pesuruhjaya Sumpah
(Commissioner For Oaths)
Lot 235, Tingkat 2,
Kompleks Campbell,
Jalan Dang Wangi,
50100 Kuala Lumpur.

STATEMENT BY THE CHAIRMAN AND A MEMBER OF ENERGY COMMISSION

We, **Tan Sri Datuk Dr. Ahmad Tajuddin Bin Ali and Datuk Ir. (Dr.) Abdul Rahim Bin Haji Hashim**, being the Chairman and a Member of Energy Commission respectively, do hereby state that in the opinion of the Members of the Energy Commission, the following Financial Statements comprising of the Balance Sheet, Statement of Income and Expenditure, Statement of Accumulated Funds and Statement of Cash Flows and the notes to the Financial Accounts have been properly drawn up to give a true and fair view of the state of affairs of Energy Commission as at 31 December 2010 and of the result of operations and changes in financial position for the year then ended on that date.

Signed on behalf of the Energy Commission,

.....

Tan Sri Datuk Dr. Ahmad Tajuddin Bin Ali
Chairman

Date : **JUNE 14, 2011**

Olace : Energy Commission
Precinct 2, Putrajaya

.....

Datuk Ir. (Dr.) Abdul Rahim Bin Haji Hashim
Anggota

Date : **JUNE 14, 2011**

Olace : Energy Commission
Precinct 2, Putrajaya

BALANCE SHEET
As at 31 December 2010

	Note	2010	2009
		RM	RM
Property, Fittings and Equipment	3	93,349,834	80,220,577
Current Assets			
Other Receivables	4	2,203,603	922,103
Cash and Cash Equivalents	5	158,900,654	153,856,835
		161,104,257	154,778,938
Current Liabilities			
Other Payables	6	4,542,259	5,450,511
Tax Payable		1,012,814	1,079,220
		5,555,073	6,529,731
Net Current Assets		155,549,184	148,249,207
		248,899,018	**228,469,784**
Financed by :-			
Accumulated Funds		**248,899,018**	**228,469,784**

STATEMENT OF INCOME AND EXPENDITURE
For the year ended 31 December 2010

	Note	2010	2009
		RM	RM
Revenue			
Fees and charges		60,558,648	60,400,640
Interest income		3,378,860	3,874,161
Other income		203,412	37,536
		64,140,920	64,312,337
Less: Expenditure			
Staff cost	3	20,065,221	16,864,825
Administration expenses		16,922,639	12,908,624
Depreciation		681,970	477,582
Other operating expenses		5,074,913	4,942,561
		42,744,743	35,193,592
Surplus Before Taxation		21,396,177	29,118,745
Taxation	7	(966,943)	(1,107,054)
Surplus for the year		**20,429,234**	**28,011,691**

The Energy Commission has no profit and loss besides surplus of net income for the current financial year.

STATEMENT OF ACCUMMULATED FUNDS
As at 31 December 2010

	2010	2009
	RM	RM
At 1 January	228,469,784	200,458,093
Surplus for the year	20,429,234	28,011,691
At 31 December	248,899,018	**228,469,784**

STATEMENT OF CASH FLOW
for the year ended 31 December 2010

	2010	2009
	RM	RM
Cash Flows from Operating Activities		
Surplus income before taxation	21,396,177	29,118,745
Adjustments for:-		
Interest income	(3,378,860)	(3,874,161)
Depreciation	681,970	477,582
Gain on disposal of assets property, fittings and equipment	(186,887)	(29,500)
Operating Surplus before working capital changes	18,512,399	25,692,666
Woking capital changes :		
Other receivables	(1,281,500)	(640,599)
Other payables	(908,252)	2,635,521
Cash generated from operating activities	16,322,648	27,687,588
Income Tax paid	(1,033,349)	(2,137,646)
Net Cash From Operating Activities	15,289,299	25,549,942
Cash Flows From Investing Activities		
Purchase of property, fittings and equipment	(13,812,830)	(53,763,647)
Gain from disposal of property, fittings and equipment	191,490	29,500
Interest received	3,378,860	3,874,161
Net cash from investments	(10,245,480)	(49,859,986)
Net increase/(decrease) in cash and cash equivalents	5,043,819	(24,310,044)
Cash and cash equivalents at the beginning of the year	153,856,835	178,166,879
Cash and cash equivalents at the end of the year	158,900,654	153,856,835
Cash and cash equivalents consists of:		
Cash and bank balances	8,738,048	6,027,371
Deposit with licensed banks	150,162,606	147,829,464
	158,900,654	153,856,835

NOTES TO THE FINANCIAL STATEMENT

1. Principal Activities

The Commission is a statutory body operating at No.12, Jalan Tun Hussein Onn, Precinct 2, 62100 Putrajaya.

The Energy Commission is the sole regulatory agency for the monitoring and development of regulate and develop the energy sector. The Energy Commission is directly responsible for supervising and monitoring energy generation activities, which includes regulating each licensed individual under the Energy Commission Act 2001.

2. Significant Accounting Policies

The following accounting policies were adopted by the Energy Commission and are consistent those with policies adopted in the previous year.

(a) Basis of accounting

The financial statements were prepared under the historical cost convention and comply with approved accounting standards for private entities in Malaysia.

(b) Property, fittings and equipment

Property, fittings and equipment are stated at cost, less accumulated depreciation and impairment, if any.

Depreciation

Depreciation of property, fittings and equipment are depreciated on a straight line basis on the estimated useful life of the asset. Property, fittings and equipment under construction are not depreciated until the construction had been completed.

The annual rates of depreciation of assets are as follows:

Office equipment	15%
Application systems and computers	33 1/3%
Motor vehicles	20%
Furniture, fittings and renovations	20%

(c) Receivables

Receivables are stated at cost.

(d) Cash and cash equivalents

Cash and cash equivalents comprise of cash, bank balances and deposits, which have an insignificant risk of changes in value.

(e) Payables

Payables are stated at cost.

NOTES TO THE FINANCIAL STATEMENT (continued)

2. Significant Accounting Policies (continued)

(f) Impairment

The carrying amount for the Energy Commission's assets and financial assets are reviewed at each balance sheet date to determine whether there is any indication of impairment. If any such indication exist, the recoverable amount is estimated. An impairment loss is recognised whenever the carrying amount of an asset's or the cash-generating unit to which it belongs exceeds its recoverable amount. Impairment losses are recognised in the income statement unless the asset is carried at a revalue amounts in which case the impairment loss is charged to equity.

Recoverable amount is the greater of the asset's net selling price and its value in use. In assesing value in use, estimated future cash flows are discounted to the present value using a pre-tax discount rate that reflects current market assessment of the time value of money and the risks to the asset. For an asset that does not generate largely independent cash flows, the recoverable amount is determined for the cash-generating unit to which the asset belongs.

In respect of other assets, an impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount.

An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised. The reversal is recognised in the income statement, unless it reverses and impairment loss on to a revalue asset, in which case it is taken to equity.

(g) Income Tax

Tax on the income statement for the year comprises current and deferred tax. Income tax is recognised in the income statement except to the extent that is relates to items recognised directly in equity, in which case it is recognised in equity.

Current tax expenses is the expected tax payable on taxable income for the current year, using tax rates enacted or substantially enacted at the balance sheet date, and any adjustment to tax payable in respect of previous years.

Deferred tax is provided, using the liability method, on temporary differences araising between the tax rate bases of assets and liabilities and their carrying amounts in the financial statements. Temporary differences are not recognised for goodwill not deductible for tax purposes, and the initial recognition of assets or liabilities that at the time of transaction, affects either accounting nor taxable profit. The amount deferred tax provided is based on the expected manner of realisation or settlement of the carrying amount of assets and liabilities, using tax rate enacted or substantially enacted at the balance sheet date.

A deferred tax asset is recognised only to the extent that is probable that future taxable profits will be available against which the asset can be utilised.

NOTES TO THE FINANCIAL STATEMENT (continued)

2. Significant accounting policies (continued)

(h) Employee benefits

i) Short term employee benefits

Wages, salaries and bonuses are recognised as an expense in the year in which the associated services are rendered by the employees of the Energy Commission. Short term accumulating compensated absences such as paid annual leave are recognised when service are rendered by employees that increases their entitlement for future compensated absenses, and short term non-accumulating compensated absences such as sick leave are recognised when the leave occur.

ii) Defined contribution plan

According to the law, qualified employers in Malaysia are obliged to contribute Employee Provident Fund. The contributions are recognised as expenses in the income statement. Liability for the fixed contribution plan is recognised as current expenses in the income statement.

(i) Recognition of income and expenses

All expenses are calculated on accrual basis. Income from fees and charges are calculated on cash basis which are considered cash in view of license holder's responsibilities to make annual payments. Interest income received also recognised on accrual basis.

NOTES TO THE FINANCIAL STATEMENT (continued)

3. Property, Fittings and Equipment
For the year ended 31 December 2010

	Motor Vehicles	Furniture, Fittings and Renovations	Office Equipment	Application Systems and Computer	Work in Progress	Total
Cost	**RM**	**RM**	**RM**	**RM**	**RM**	**RM**
At 1 January 2010	2,211,798	2,913,216	990,009	2,891,334	78,653,878	87,660,235
Current year depreciation	533,999	27,297	65,946	332,880	12,855,708	13,815,830
Disposal	(204,499)	(2,676,460)	(9,440)	(774,992)	-	(3,665,391)
At 31 December 2010	2,541,298	264,053	1,046,515	2,449,222	91,509,586	97,810,674
Accumulated Depreciation						
At 1 January 2009	1,664,744	2,870,440	801,862	2,102,612	-	7,439,658
Current year depreciation	215,854	24,195	53,120	388,801	-	681,970
Disposals	(204,499)	(2,671,862)	(9,435)	(774,992)	-	(3,660,788)
At 31 December 2010	1,676,099	222,773	845,547	1,716,421	-	4,460,840
Net book value						
At 31 December 2010	865,199	41,280	200,968	732,801	91,509,586	93,349,834
At 31 December 2009	547,054	42,776	188,147	788,722	78,653,878	80,220,577

NOTES TO THE FINANCIAL STATEMENT (continued)

3. Property, Plant and Equipment
For the year ended 31 December 2009

	Motor Vehicles	Furniture, Fittings and Renovations	Office Equipment	Application Systems and Computer	Work in Progress	Total
Cost	**RM**	**RM**	**RM**	**RM**	**RM**	**RM**
At 1 January 2009	2,039,326	2,900,936	878,792	2,205,218	26,092,177	34,116,449
Additions	347,908	12,280	111,217	730,541	52,561,701	53,763,647
Disposal	(175,436)	-	-	(44,425)	-	(219,861)
At 31 December 2009	2,211,798	2,913,216	990,009	2,891,334	-	87,660,235
Accumulated Depreciation						
At 1 January 2009	1,676,864	2,840,438	707,651	1,956,984	-	7,181,937
Current year depreciation	163,316	30,002	94,211	190,053	-	477,582
Disposals	(175,436)	-	-	(44,425)	-	(219,861)
At 31 December 2010	1,664,744	2,870,440	801,862	2,102,612	-	7,439,658
Net book value						
At 31 December 2009	547,054	42,776	188,147	788,722	78,653,878	80,220,577
At 31 December 2008	362,462	60,498	171,141	248,234	26,092,177	26,934,512

NOTES TO THE FINANCIAL STATEMENT (continued)

4. Other Receivables

	2010	2009
	RM	RM
Other Receivables and Deposits		
Staff advances	10,192	5,880
Tax prepayment	1,033,350	-
Accrued interest on fixed deposit	838,701	604,764
Other receivables and deposits	230,360	220,459
Investment	91,000	91,000
TOTAL	**2,203,603**	**922,103**

5. Cash and Cash Equivalents

	2010	2009
	RM	RM
Cash and Cash Equivalents		
Cash and bank balances	8,738,048	6,027,371
Deposits with licensed banks	150,162,606	147,829,464
TOTAL	**158,900,654**	**153,856,835**

6. Other Payables

	2010	2009
	RM	RM
Other Payables		
Payables	4,092,040	5,019,317
Cash Award in liew of Accumulated Leave	435,219	409,414
Audit Fee	15,000	21,780
TOTAL	**4,542,259**	**5,450,511**

7. Taxation

	2010	2009
	RM	RM
Tax Expenses		
Current year	1,012,814	1,033,349
Over/Under provision from prior years	(45,871)	73,705
TOTAL	**966,943**	**1,107,054**
Reconcilation of effective tax rates adjustment		
Surplus before tax	21,396,177	29,118,745
Tax at 27%	5,776,968	7,862,061
Tax exemption income	(4,764,154)	(6,828,712)
Current year tax expense	1,012,814	1,033,349
Overprovision from prior years	(45,871)	73,705
TAX EXPENSES	**966,943**	**1,107,054**

The Energy Commission has obtained tax exemption under Section 127(3)b, Income Tax Act 1967, which was given by the Ministry of Finance on October 19, 2004. The exemption applies on statutory income as follows:

i. Income received from Federal Government or State Government in the forms of grant or subsidies;

ii. Income received in connection with any amount chargeable or collectible from any body or person under the Act, which governs statutory bodies; and

iii. Donations or contributions received

8. Staff Costs

Included in the staff cost is contribution to the Employees Provident Fund of RM2,031,616 (2009 – RM1,721,673). The number of employees of the Energy Commission at end of the year was 229 (2009 – 221).

9. Restated Comparative Figures

The following comparative figures discloses were restated in the Financial Statements for the financial year ended 31 December 2010 and reclassification of prior year's comparatives to conform with current year presentation :

	As Restated semula	As Stated Previously
Balance Sheet	**RM**	**RM**
Investments	-	91,000
Other Receivables	922,103	281,339
Cash and Cash Equivalents	153,856,835	154,406,599
Net Current Assets	148,249,207	148,158,207
	154,778,938	154,778,938
Statement of Income and Expenditure	**RM**	**RM**
Administration Expenses	12,908,624	12,886,844
Other Operating Expenses	4,942,561	4,964,341
	17,851,185	17,851,185
Statement of Cash Flow	**RM**	**RM**
Other Receivables	(640,599)	(90,835)
Cash Generated from Operating Activities	27,687,588	28,237,352
Net Cash Generated from Operating Activities	25,549,942	26,099,706
Net Increase /(Decrease) in Cash and Cash Equivalents	(24,310,044)	(23,760,280)
Deposit with Licensed Banks	147,829,464	148,379,228
Note 4. Other Receivables	**RM**	**RM**
Accrued Interest on Fixed Deposit	604,764	-
Other Receivables and Deposits	220,459	281,339
Investment	91,000	-
Staff Advances	5,880	-
Note 5. Cash and Cash Equivalents	**RM**	**RM**
Deposit with Licensed Banks	147,829,464	148,379,228

www.st.gov.my

Suruhanjaya Tenaga ***(Energy Commission)***
No. 12, Jalan Tun Hussein, Presint 2, 62100, Putrajaya.

Tel : +603 - 8870 8500 Fax : +603 - 8888 8637
Toll Free No. : 1 - 800 - 2222 - 78 (ST)
Email : info@st.gov.my