Suruhanjaya Tenaga
Energy Commission

ANNUAL REPORT 2014

THE ENERGY COMMISSION ANNUAL REPORT 2014 is submitted to the Minister of Energy, Green Technology and Water in accordance with Section 33(3) of the *Energy Commission Act 2001*,which states that "The Commission is obliged to submit a copy of its account statement that has been certified by an auditor and a copy of an auditor's report to the Minister soonest possible, who will table the statement and report to both Houses of Parliament, together with a report that outlines all the Commission's activities for the previous financial year."

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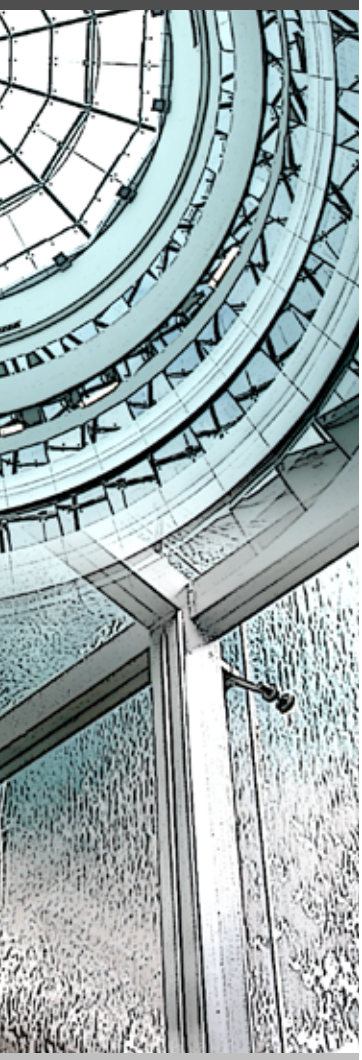

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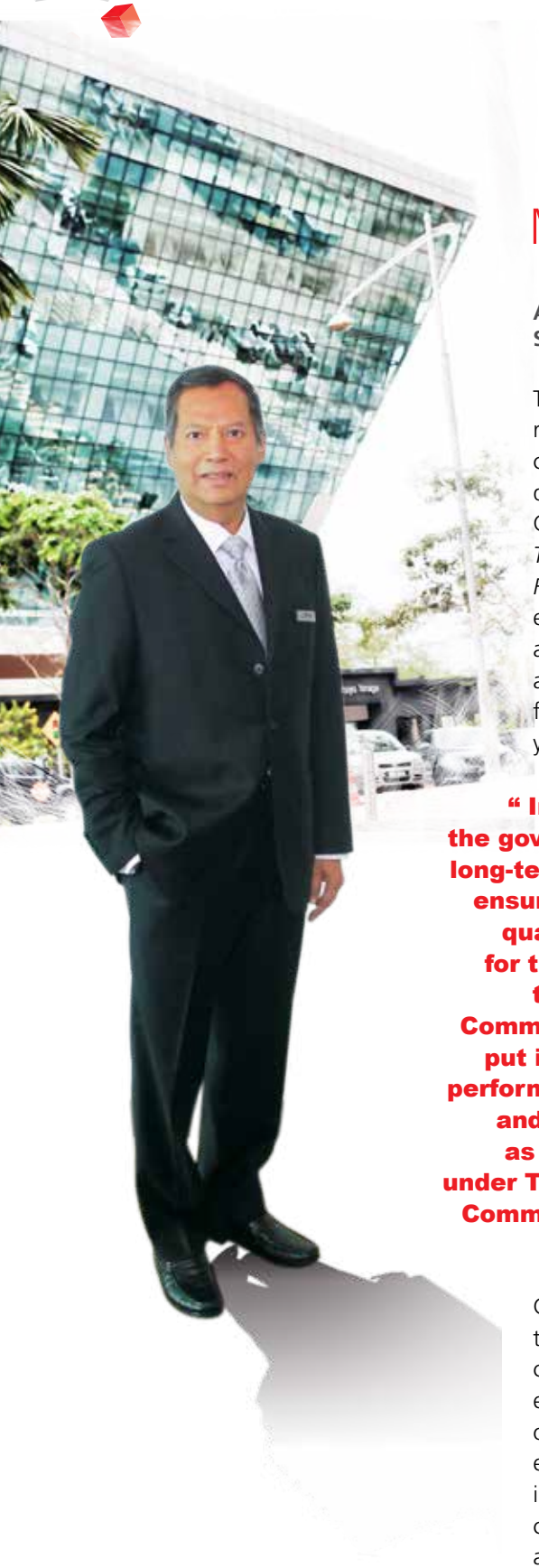


MESSAGE FROM THE CHAIRMAN

Assalammualaikum w.b.t.
Salam 1 Malaysia.

The stability of the energy sector remains a priority in ensuring continuous and sustainable national development. On behalf of the Energy Commission, I am pleased to present *The Energy Commission Annual Report* for the year 2014. This report explains the Energy Commission's achievements throughout the year, and reviews its effectiveness for further improvement in the coming years.

" In line with the government's long-term plan to ensure a better quality of life for the people, the Energy Commission has put in effort to perform our roles and functions as stipulated under The Energy Commission Act 2001."

In line with the government's long-term plan to ensure a better quality of life for the people, the Energy Commission has put in effort to perform our roles and functions as stipulated under The Energy Commission Act 2001.

The Energy Commission takes into account all the transformation programmes, changes and policies relating to energy usage in all sectors for our planning, to ensure a secured energy supply in the future. The implementation also focuses on the conservation of the environment and consumerism efficiency.

To define the focus and direction in the implementation of the roles of the Energy Commission, five main objectives were underlined in 2014. To ensure that each objective is achieved accordingly, the Energy Commission has leveraged on all the sources available and all the expertise we have gained over our 15 years of experience as a regulatory body.

The enhancement of energy efficiency, safety and reliability are among the main objectives for the energy sector. In ensuring the continuity of energy supply, competition and economic efficiency are also among the goals that we should achieve. As a regulatory body, it is our responsibility to consumers to enhance legal compliance and service quality, which requires an improvement in our regulatory framework as well as our internal competency as an organisation.

In addition, we are aware of the significance of increasing awareness, cooperation and good practices between the energy sector and the public. All the five objectives mentioned above aim to strike a balance between maintaining continuous supply and delivering excellent service to consumers, while ensuring that the industry players remain reliable in delivering their services.

I am pleased to share that, in cooperation with its various stakeholders and consumers, the Energy Commission has improved its performance in all the said objectives. The recorded maximum demand of 16,901 MW this year has showed an increase of 2.05% compared with 2013. However, the supply situation is stable, as it has a reserved margin of 23.92% due

to scheduled cessations of operations for several generation units.

The annual SAIDI (System Average Interruption Duration Index) performance for the whole Peninsula is 56.65 minutes/customers/year, an improvement compared with its previous performance in 2013 (60.35 minutes/customers/year). This index is also an improvement from the targeted index, which is 60.0 minutes/customers/year. This definitely reflects that the nation's energy sector is on the right path towards meeting international standards.

"In encouraging a more effective and operational utility, the Incentive Based Regulation (IBR) was implemented in the Peninsula starting on the 1st of January 2014. One of the important components under the IBR includes the Imbalance Cost Pass-Through (IPCT) mechanism."

However, the performance of energy supply and demand in Sabah remains a challenge. Low reliability and lack of capacity generation are among the issues faced early in the year, although the generation capacity has stabilised during the second half of the year when several new power plants, with a cumulative generation capacity of 395 MW, commenced operations.

This represents 26% of the total installed generation capacity in Sabah, which stood at 1,533.8 MW as at December 2014. On the 17th of January 2014, a power outage affected almost the entire state of Sabah and led to a decline in the SAIDI annual index to 777 minutes/customers/year. This is 83.25% lower compared with the total SAIDI index in 2013 (424 minutes/customers/year).

Following the increase in generation capacity of 395 MW in the second half of 2014, the SAIDI index showed an improvement in comparison to its performance during the first half of 2014.Taking efficiency reductions and curtailment of generation systems into account, the reliable capacity is, however, only at 1,397.8 MW. The maximum demand, as posted by the Sabah grid system, has increased by 3.6% to 907.5 MW, compared with its maximum demand of 874.4 MW in 2013.

In encouraging a more effective and operational utility, the Incentive Based Regulation (IBR) was implemented in the Peninsula starting on the 1st of January 2014. One of the important components under the IBR includes the Imbalance Cost Pass-Through (IPCT) mechanism.

This mechanism allows the tariff rate to reflect a more transparent cost for electricity supply. From our observation, its execution has indirectly enabled consumers to become more responsible for their energy and fuel consumption, and we believe such practices should be part of the Malaysian lifestyle.

As for the piped gas industry, the performance of gas supply continuity showed an improvement in 2014, where the SAIDI index was at 0.1492 minutes/customers/years. Among the methods used by licensees to enhance supply continuity are continuous inspections and maintenance of equipment in use, and by taking action to resolve issues upon receiving consumer feedback.

The amount of natural gas supplied to the Peninsula increased by 6.58% to 391.72 mmsfcd in 2014 compared with 367.72 mmscfd in 2013. The industrial sector was the main consumer of natural gas, with 389.18 mmscfd in overall consumption, while the commercial sector consumed 2.64 mmsfcd and the housing sector consumed 0.10 mmsfcd. The number of natural gas users in all three sectors also increased in 2014.

The Energy Commission is aware that the developing energy sector requires a knowledgeable and extensively experienced regulatory workforce. Thus, we have accelerated efforts to develop internal competency by providing programmes for the benefit of our workforce to constantly seek knowledge, and gain experience and skills based on the mechanism adapted by local and international players in the energy sector. This knowledge will be adopted to improve the current regulatory process.

Building up workforce capacity is another way for us to ensure that the energy sector remains competitive and well-progressed.

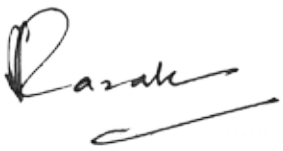
All the above are part of the report on the energy supply situation in 2014. This detailed report includes achievements in 2014 according to the sequence of the five objectives mentioned earlier in this message.

On behalf of the Energy Commission and the management team, I would like to express our gratitude to the Minister of Energy, Green Technology and Water Yang Berhormat Dr Maximus Johnity Ongkili and the Ministry for their support and cooperation, which have enabled the Energy Commission to implement its regulatory functions.

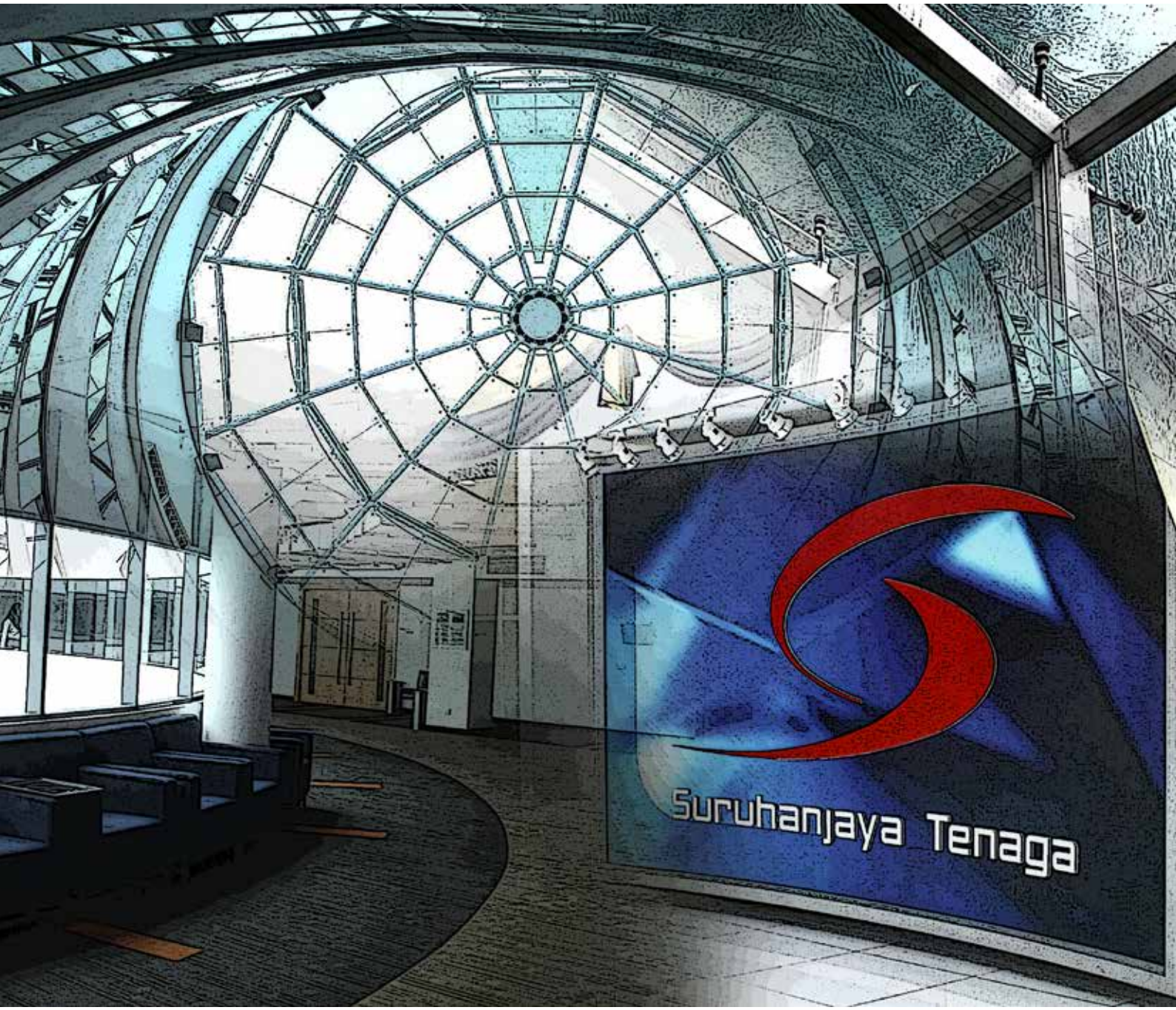
My appreciation extends to the members of the Energy Commission who have helped to maintain our effectiveness and our direction, as well as our management team and staff for their diligent efforts in assisting the Commission to continuously strive for excellence and progressively grow in strength and authority.

Lastly, I extend my prayers that the Energy Commission will be able to continue implementing its entrusted roles and responsibilities in a more effective manner, to ensure that the energy sector will continue to progress further and become more competitive in the coming years, which, in the long run, will allow the people to enjoy higher standards of living.

Thank you.



DATO' ABDUL RAZAK BIN ABDUL MAJID
Chairman


Suruhanjaya Tenaga

CHIEF EXECUTIVE OFFICER'S REPORT

First and foremost, on behalf of the Energy Commission's staff, I would like to welcome YBhg Dato' Haji Abdul Razak bin Abdul Majid as the Chairman of the Energy Commission starting on the 1st of April 2014. We are confident that with his extensive experience in the industry, YBhg Dato' Haji Abdul Razak bin Abdul Majid will lead the Energy Commission and the national energy sector towards excellence.

In 2014, despite inconsistent world economic performance following the decline in global fuel prices, Malaysia progressed at a rate of 6% compared to 4.7% in 2013. Therefore, it is of utmost importance that the performance of the local energy supply industry continues to be enhanced to support national economic development towards achieving Malaysia's aim to become a developed nation by 2020.

" Generally, the electricity generation in Malaysia has increased by 2.2% from 112,358 GWh in 2013 to 114,856 GWh in 2014. The maximum demand as recorded by the grid system has also increased by 2.05% from 16,562 MW in 2013 to 16,901 MW "

In line with this, the Energy Commission, as the national regulatory body for the energy sector, has undertaken several initiatives to ensure that the electricity and piped gas supply activities in Peninsular Malaysia and Sabah continue to progress smoothly.

Generally, the electricity generation in Malaysia has increased by 2.2% from 112,358 GWh in 2013 to 114,856 GWh in 2014. The maximum demand as recorded by the grid system has also increased by 2.05% from 16,562 MW in 2013 to 16,901 MW.

However, installed generation capacity has decreased from 3.16% or by 684 MW, from 21,628 MW in 2013 to 20,944 MW at the end of 2014. This decline is due to the cessation of operation of the 240 MW-capacity Sultan Iskandar Power Station in Pasir Gudang, and the 116 MW-capacity Connaught Bridge Power Station in Klang, as well as the derating of other power stations in the grid system.

51.8% of electricity supplied in the Peninsula was generated by gas, 42.3% from coal, 3.6% from hydro, and 2.3% fuel oil, distillate and renewable, and imported energy. In Sabah, electricity generation decreased by 3.5% to 5,420.9 GWh in 2014 compared to 5,618.0 GWh in 2013, but maximum demand increased by 3.6%, from 874.4 MW in 2013 to 907.5 MW in 2014.

Installed generation capacity was 1,496.7 MW, after taking deration and the retirement of several power stations into account. From the overall capacity, 1,022.5 MW is IPP-generated capacity, 400.7 MW by Sabah Electricity Sdn Bhd (SESB) and 73.5 MW is from renewable energy.

75.7% of the total generation is from gas, 14.9% from MFO and diesel, 5.7% from hydro and 3.6% from renewable energy. The constraints in generation capacity in the first half of 2014 was resolved with the commercial operation of power plants in the second half of the year, with an additional capacity of 395 MW.

This includes the first block of the 95 MW Kimanis Project, which began operation in May, followed by its second and third block in July and November respectively. In addition to that, the 100 MW SPR-owned

combined cycle power plant began operation in August while the 10 MW Cash Horse biomass plant commenced supply in November.

In terms of the system's reliability performance, the Delivery Point Unavailability Index (DePUI) for the transmission system in the Peninsula was successfully reduced to 0.31 minutes in 2014. This is a reduction of 64% compared to 0.86 in 2011 (DePUI is the amount of unsupplied energy (MW Minutes) divided by the system's peak load (MW)). SAIDI for the whole delivery system, on the other hand, improved with a reduction of 6.1% to 56.65 minutes per customer in 2014 compared to 60.35 minutes per customer in 2013. However, on 7th May, a load-shedding of up to 470 MW was implemented due to unplanned outages of some generation units in the Manjung, Port Dickson and Kapar stations, as well as gas curtailment.

Hence, the Grid Code Committee has studied and coordinated the implementation of several initiatives to strengthen generating systems which have successfully resolved the electricity supply situation in the Peninsula.

" SAIDI for the whole delivery system, on the other hand, improved with a reduction of 6.1% to 56.65 minutes per customer in 2014 compared to 60.35 minutes per customer in 2013"

In Sabah, the DePUI for the grid system showed a significant increase to 161.09 minutes in 2014 compared to 26.65 minutes in 2013, due to five incidents that involved the loss of load exceeding 50 MW each. In January 2014, a flashover on the 132 kV transmission system followed by the tripping of several major power plants in the west coast of Sabah caused supply disruptions to the entire state. Investigations showed that the grid protection system was not functioning properly during the incident. The overall SAIDI in 2014 increased to 777 minutes per user from 424 minutes per user in 2013. Interruptions attributable to generation and transmission systems have contributed to 70% of the total SAIDI. The distribution system SAIDI, however, improved by 6.8% compared to the previous year.

To resolve the supply reliability issue in Sabah, a special committee consisting of the Commission's officers and industry experts investigated and analysed the causes, and coordinated the implementation of immediate measures by SESB and IPPs to strengthen the grid system.

To ensure security of electricity supply to both Sabah and Peninsular Malaysia in the future, priority has been given to the review of the generation capacity plan as well as close monitoring of the implementation of major generation and transmission projects. In the Peninsula, additional capacity is needed to address system curtailment issues that may occur due to the performance of coal-fired power plants that are undergoing repair or retirement between 2015 and 2018, and delays in the construction of generation and main transmission line projects.

The Energy Commission has awarded several power plant projects that are scheduled for commissioning in the period from 2018 to 2021. Based on the competitive bidding process and with the government's approval, the Energy Commission has awarded two 1000 MW coal-fired power plants (3B project) in Mukim Jimah, Negeri Sembilan to the 1MDB-Mitsui Consortium, which are expected to start operating in October 2018.

At the same time, the government has decided that SIPP Energy and TNB should be allowed to develop the 1000-1400 MW CCGT project in Pasir Gudang, Johor so that it can start operating in April 2018. The government has also approved a conditional award to 1Malaysia Development Berhad with participation by TNB for the development of a 2000-2400 MW gas-fired combined cycle power plant in Alor Gajah, Malacca to start operating in January 2021.

In executing these decisions, the Commission issued Conditional Letters of Award, which outlined conditions that need to be met that would result in the best offer and most competitive selling price, including a levelised tariff that is benchmarked against the projects that were awarded through bids.

Meanwhile in Sabah, highly reliable power plants in the east coast are needed urgently owing to the disparity in the electricity demand and supply situation between the east and west coasts of Sabah. The maximum stable power transfer of the current east-west grid line is 200 MW. Therefore, the Economic Council has approved the construction of a 300 MW gas-fired combined cycle power plant in Sandakan and the Trans-Sabah Gas Pipeline along the coast of north Sabah from Kimanis to Sandakan.

In terms of safety performance, the number of electricity-related accidents increased from 46 cases

in 2013 to 63 cases, while no incidents involving piped gas were reported in 2014. Of these cases, 27 were fatal. Failure to comply with safe working procedures and failure to satisfactorily install or perform electrical work were identified as the main causes of accidents, according to investigations. To resolve the issues effectively, a few amendments to the *Electricity Supply Act 1990* were proposed.

Draft codes of practice for electrical infrastructure, non-domestic electrical installation safety management, and guidelines on the management of electricity and piped gas were developed. In addition, efforts to increase the number and service quality of competent persons in the country were undertaken to ensure the handling and maintaining of installations are done safely, through more effective and efficient learning and competency evaluation systems provided by accredited institutions.

" In terms of energy efficiency, the intensity of electricity in the country declined by 1.4% to 0.154 GWh per million ringgit GDP in 2014 compared to 2013. The awareness and practice of energy efficiency among consumers increased in line with the increasing number of awareness programmes, incentives and enforcement that were implemented. "

In an effort to further improve the level of safety of electricity and piped gas systems, the Energy Commission has been implementing programmes aimed at increasing awareness among industry players and consumers about good practices and legal requirements. These include roadshows on safe working procedures, publication of guidelines on lightning protection in buildings, implementation of electricity and piped gas safety audit programmes, and monitoring of the manufacturing and retailing of electrical appliances. Review of wiring guidelines for residential buildings and awareness programmes on current issues in the energy sector through the mass media were also conducted.

In terms of energy efficiency, the electricity intensity in the country declined by 1.4% to 0.154 GWh per million ringgit GDP in 2014 compared to 2013. The awareness and practice of energy efficiency among consumers increased in line with the intensification of awareness programmes, incentives and enforcement that were implemented.

In relation to this, the Energy Commission was also entrusted by the government to monitor electricity consumption in 25 public buildings, including the Prime Minister's Office. As a result, in 2014, electricity consumption in these buildings declined by 5.6% compared to 2013.

To encourage licensees to operate more efficiently, a regulatory framework based on incentives or Incentive-Based Regulation (IBR) was implemented for the TNB tariff effective 1st January 2014. Under the IBR regulatory framework, the weighted average cost of capital (WACC) for TNB was set at 7.5%, and TNB's efficient cost, income and target performance until 2017 was forecasted. In addition, the gas price subsidy for the power sector in the Peninsula was reduced by RM1.50 per mmBtu in line with the national subsidy rationalisation plan.

Based on these factors, the TNB basic electricity tariff was revised to 38.53 sen/kWh, enforced since 1st January 2014. SESB and Labuan's electricity tariffs were also revised to 34.52 sen/kWh. These revisions are only applicable to electricity consumption exceeding 300 kWh.

One of the main components in the IBR regulatory framework is the Imbalance Cost Pass-Through (ICPT) mechanism, which allows licensees to pass costs on to consumers, through rebates and surcharges every six months, for changes in generation cost and other costs involved that are beyond the licensee's control. This mechanism enables the implementation of an efficient electricity tariff rate that reflects the actual cost of electricity supply.

However, the imbalance cost increase in 2014 was financed by funds from the savings of the first-generation Power Purchase Agreement (PPA) and was not passed through to consumers. In addition, to ensure a level playing field in the electricity supply industry, the ring-fencing mechanism for both the system operator and the single buyer was brought into effect on 1st January 2014 and 1st February 2014 respectively.

In terms of piped gas pricing for the non-power sector, the government decided that the pricing for the piped gas sold by PETRONAS to the non-power sector was to be increased automatically by RM1.50/mmBtu every six months beginning 1st May 2014. This is in line with the national fuel subsidy rationalisation plan.

Meanwhile, the pricing mechanism for liquefied natural gas (LNG) that is sold by PETRONAS to the non-power sector was established based on LNG Ex-Bintulu's Weighted Average Price (WAP) at a discounted rate of 10% (plus shipping, regasification and delivery costs). Due to these decisions, two revisions of the Gas Malaysia Berhad (GMB) average tariff were implemented, one on 1st May 2014 at an average tariff of RM19.32/mmBtu, and another on 1st November 2014 with an average tariff of RM19.77/mmBtu. The increases were 20.22% and 2.33% respectively. The amount of natural gas supplied by GMB in the Peninsula increased by 6.6% to 147, 342,490 mmBtu in 2014.

The industrial sector is the largest natural gas consuming sector, with a consumption of 146,311,939 mmBtu, which is 99.3% of overall consumption, compared to 0.7% by the commercial sector and 0.03% by the domestic sector. The number of industrial consumers in the Peninsula also grew by 4.1% from 740 in 2013 to 771 in 2014. In Sabah and Labuan, natural gas consumption rose by 149.8% to 233,723 mmBtu while the number of consumers increased by 11.1% to 20 consumers.

" To further enhance the security of the national gas supply, the Energy Commission developed a legal framework and the necessary codes to enable entities other than the current gas supplier to import natural gas through the existing regasification, gas delivery and distribution infrastructure in the country. "

To further enhance the security of the country's natural gas supply, the Energy Commission developed a legal framework and the necessary codes to enable entities other than the current gas supplier to import natural gas through the existing regasification, gas transmission and distribution infrastructure in the country. As regards the reliability of the piped gas supply system, SAIDI for the GMB-supplied piped gas distribution increased by 0.7% from 2013, in which the SAIDI for the year 2014 is 0.149 minutes per consumer compared to 0.148 minutes in 2013. Initiatives taken by GMB to improve reliability performance include intensifying inspection and maintenance activities, and improving efficiency in managing consumer complaints.

In the area of licensing, the number of licences issued by the Energy Commission for the generation and supply of electricity and piped gas increased by 2.2% to 3,726 in 2014. The number of registered electrical installations and certified piped gas installations in 2014 also grew by 14.7% and 9.8% to 10,599 and 2,288 respectively.

However, the number of certifications for electrical competency declined by 10.9% to 5,376, while the number of registrations for electrical contractors increased by 5% to 3,714, and approvals for the import and manufacturing of electrical appliances increased by 37.2% to 9,205.

In terms of enforcement, emphasis was on the audit of the activities of licensees, installation operators and gas and electrical contractors, as well as actions taken for cases of breach of applicable laws. In protecting consumers' interest, the Energy Commission received and investigated 412 complaints made throughout 2014 compared to 434 in 2013. 52% of the complaints were related to electricity supply, 21% to electrical installations, and 8% to electrical equipment. The rest of the complaints covered issues related to electrical contractors, competent persons, energy management, power quality and gas supply. 98% of the complaints were resolved.

To increase awareness on smart use of energy, outreach programmes with the theme *Be Energy Smart* were held throughout the country. Among the activities was the broadcast of 600 slots of public service messages through electronic advertisements and advertorials on print media, as well as 70 seminars and 61 dialogue sessions, and five one-day programmes with consumers. In addition, two guidelines on replacement of electricity meters and procedures for licensees to claim losses due to meter tampering were published to strengthen the framework for consumer interest protection.

In 2014, the Energy Commission published the inaugural issue of the *National Report on Electrical Safety Performance* and *Energy Malaysia* magazine. The *National Report on Electrical Safety Performance* was created to spread awareness among industry players, consumers and the public about safe electricity practices. *Energy Malaysia*, on the other hand, is an energy industry magazine that updates readers on current developments and solutions for addressing issues in Malaysia's energy sector. *Energy Malaysia* was distributed to more than 5,000 organisations including government

agencies, industry associations and non-government bodies, embassies, public and private universities, training institutions and exhibition visitors.

Moving forward, the Energy Commission will undoubtedly face challenges in ensuring the electricity supply sector continues to be sustainable, reliable and competitive to support national development. Among the challenges are to effectively address the deteriorating power supply reliability in Sabah, subsidy rationalisation and rising costs. Future challenges also include addressing the need for increased coal supplies, which will soon reach 40 million tonnes annually, as well as the operational changes of the grid system in the Peninsula with the planned introduction of super-critical coal-fired generating units over the next 5 years.

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In preparating to meet these challenges, a more structured development and training programme aimed at instilling a work culture of excellence among the Energy Commission's workforce was developed in line with the ongoing ST transformation programme. Several initiatives were implemented to improve ST service delivery system in the areas of service quality, transaction transparency and effectiveness of regulatory activities. In addition, the Energy Commission's online system has been improved to expand its service delivery channels. Various ICT application systems such as the Energy Commission Online System (ECOS), e-GAS and e-Electricity provide additional channels to allow easy and convenient access for the public.

I would like to take this opportunity to thank and express my greatest appreciation to Yang Berhormat Minister and Yang Berhormat Deputy Minister of Energy, Green Technology and Water, the Secretary-General and the staff of the Ministry of Energy, Green Technology and Water, and the Chairman and members of the Energy Commission for their commitment and support.

I also would like to extend my heartfelt appreciation for the four former members of the Energy Commission who ended their terms in 2014 – YBhg Datuk Loo Took Gee, YBhg Dato' Seri Zohari Haji Akob, YBhg Datuk Ir Peter Lajumin and YBhg Datuk Mohd Nasir Ahmad. Their contributions to improve the effectiveness and leadership of the organisation have managed to move the Energy Commission forward.

On another note, the Energy Commission's staff and I would also like to welcome the appointment of KeTTHA Deputy Secretary-General (Energy Sector) YBhg Dato' Dr Nadzri Yahaya as a member of the Energy Commission, effective on 1st September 2014.

Lastly, my sincere gratitude and appreciation to all the staff of the Energy Commission for your dedication and commitment to achieve our performance targets in 2014. The achievement has exceeded that of the previous year's, and I am confident that it will continue to improve in the coming years. I pray that we are blessed with good health and well being for us to continue striving to achieve ST's vision of becoming an effective and authoritative regulatory body in ensuring continuous improvement of our country's energy supply performance.

Thank you.

DATUK IR. AHMAD FAUZI BIN HASAN
Chief Executive Officer
Energy Commission

CORPORATE INFORMATION

BACKGROUND

In its efforts to further enhance the performance of the energy supply industry, on 1st May 2001, the Malaysian government established the Energy Commission under *The Energy Commission Act 2001*. The Energy Commission began operations on 1st January 2002 and assumed all the responsibilities of the Department of Electricity and Gas Supply that was dissolved on the same date.

In line with the government's aim of enhancing supply security, improving efficiency and quality in utility services, the energy sector in Malaysia has undergone significant changes since the 1990s. Private sector participation in infrastructure development has also increased, with positive impact to the country.

The Energy Commission's responsibilities are detailed in *The Energy Commission Act 2001* and its subsequent amendments and regulations.

- *Electricity Supply Act 1990*
- *Gas Supply Act 1993*
- *Licensee Supply Regulations 1990*
- *Electricity Regulations 1994*
- *Gas Supply Regulations 1997*
- *Electricity Regulations (Compoundable Offences) 2001*
- *Gas Supply Order (Compoundable Offences) 2006*
- *Efficient Electricity Management Regulations 2008*

ROLES AND FUNCTIONS OF THE ENERGY COMMISSION

As the statutory body responsible for regulating the energy sector, particularly the electricity and piped gas supply industries in Peninsular Malaysia and Sabah, the Energy Commission ensures that the energy needs of the nation and the people are met. This is done by:

- Advising the Minister on all matters pertaining to energy supply activities;
- Implementing, enforcing and reviewing the stipulated energy supply laws and regulations (*Electricity Supply Act 1990, Gas Supply Act 1993*);
- Promoting efficiency and safety within the electricity and piped gas supply industry;
- Encouraging healthy competition and preventing the abuse of power or monopoly within the electricity and piped gas supply industry;
- Promoting the use of renewable energy and energy conservation;
- Promoting research and development of new techniques related to electricity supply and consumption, and the supply of piped gas;
- Promoting the development of the electricity and;
- Promoting self-regulation within piped gas supply industry the industry

LICENSING AND CERTIFICATION ACTIVITIES

The Energy Commission issues the following licenses and certification to the electrical and piped gas supply industry:

- License to supply electricity or piped gas to others or for own use
- Competency certification
- Registration of contractors
- Accreditation of training institutions
- Approval on equipment
- Electrical installation registration
- Approval for installation service firm and operation of gas pipeline system
- Registration of energy service firm

MONITORING AND ENFORCEMENT ACTIVITIES

The Energy Commission ensures the security of the electricity and piped gas industry supply through monitoring and enforcement activities such as:

- Monitoring
  - Service performance of licensee
  - Status on supply of electricity, piped gas and generation fuel
- Audit and Inspection
  - Installation of supplier and consumer
  - License and certification holder
  - Manufacturer, importer and seller of equipment
  - Competency training institution
- Competency Examinations (written, verbal and practical)
- Review of tariffs, charges and fuel pricing for electricity and piped gas
- Investigation of complaints, accidents and breaches of law
- Legal action
- Dispute resolution
- Raising awareness

PLANNING AND DEVELOPMENT ACTIVITIES

The Energy Commission plans and develops regulatory framework and industrial development for the energy sector as follows:

- Legal requirement and industrial practices
  - Acts, regulations, licensing requirements and performance standards
  - Codes, guidelines, circulars and instructions
- Regulatory framework
  - Incentive-based electricity and piped gas tariffs
  - Third party access to gas infrastructure
- Energy Information Database
  - *The National Energy Balance Report*
- Generation Capacity
  - Planting up development
  - Selection of power generation operators through open bidding processes
- Problem-solving initiatives and industrial performance enhancement
- Reformation programmes for the electricity supply industry

VISION

The Energy Commission strives to be a highly effective energy regulator and the authority on energy matters.

MISSION

The Energy Commission aims to balance the needs of consumers and providers of energy to ensure safe and reliable supply at reasonable prices, protect public interest, and foster economic development and competitive markets in an environmentally sustainable manner.

STRATEGIC OBJECTIVES

- Enhance energy reliability, safety and efficiency
- Encourage competitiveness and economic efficiency
- Improve legal compliance and service quality
- Improve regulatory framework and organisational competency
- Increase awareness, cooperation and good practices

MEMBERS OF THE ENERGY

1 **DATO' HAJI ABDUL RAZAK BIN ABDUL MAJID**
Chairman (since 1st April 2014)

2 **DATUK IR. AHMAD FAUZI BIN HASAN**
Chief Executive Officer

3 **DATUK DR. RAHAMAT BIVI BINTI YUSOFF**

4 **DATO' DR. NADZRI BIN YAHAYA**
(since 1st September 2014)

5 **DATUK FELIX SILVERIUS MADAN**
(since 1st March 2014)

6 **DATUK IR. (DR.) ABDUL RAHIM HJ HASHIM**

7 **DATO' M. RAMACHELVAM**

8 **IR. DR. PHILIP TAN CHEE LIN**

9 **ENCIK PETRUS GIMBAD**

TAN SRI DATUK DR. AHMAD TAJUDDIN ALI
Chairman
(until 31st March 2014)

DATUK LOO TOOK GEE
(until 24th May 2014)

DATO' SERI ZOHARI BIN HAJI AKOB
(until 20th July 2014)

DATUK MOHD. NASIR BIN AHMAD
(until 4th June 2014)

DATUK IR. PETER LAJUMIN
(until 31st August 2014)

MEETINGS OF THE ENERGY COMMISSION IN 2014

The Energy Commission organised eight (8) meetings in 2014. These meetings were held to discuss matters related to the organisation and its operations as the energy sector's regulatory body. Details of the meetings are as follows:

MEETINGS OF THE ENERGY COMMISSION

MEETING	DATE	DAY	TIME	MEETING VENUE
ST 1/2014	28 January 2014	Tuesday	10.00 am	Putrajaya
ST 2/2014	17 March 2014	Monday	2.30 pm	Putrajaya
ST 3/2014	15 May 2014	Thursday	2.30 pm	Putrajaya
ST 4/2014	10 July 2014	Thursday	9.30 am	Putrajaya
ST 5/2014	29 September 2014	Monday	9.30 am	Putrajaya
ST 6/2014	10 November 2014	Monday	1.30 pm	Putrajaya
ST 7/2014	22 December 2014	Monday	9.30 am	Putrajaya

In addition to these meetings, the Energy Commission organised five (5) special meetings to discuss any arising issues for the year 2014. Details of the special meetings are as follows:

SPECIAL MEETINGS OF THE ENERGY COMMISSION 2014

MEETING	DATE	DAY	TIME	MEETING VENUE
ST (K) 1/2014	15 January 2014	Wednesday	5.30 pm	Marriott Putrajaya Resort
ST (K) 2/2014	28 February 2014	Friday	10.00 am	Putrajaya
ST (K) 3/2014	10 June 2014	Tuesday	9.00 am	Sime Darby Convention Centre, KL
ST (K) 4/2014	14 August 2014	Thursday	5.30 pm	Putrajaya
ST (K) 5/2014	25 August 2014	Monday	5.00 pm	Putrajaya
ST (K) 6/2014	30 December 2014	Tuesday	9.30 am	Putrajaya

The Energy Commission has three permanent committees: the Licensing Committee; the Finance and Tender Committee; and the Remuneration and Nomination Committee. The following list details meetings conducted by these committees in 2014.

MEETINGS OF THE LICENSING COMMITTEE (MANAGEMENT AND THE ENERGY COMMISSION) (JKBP) 2014

MEETING	DATE	DAY	TIME	MEETING VENUE
JKBP 1/2014	22 January 2014	Wednesday	9.30 am	Putrajaya
JKBP 2/2014	10 March 2014	Monday	10.00 am	Putrajaya
JKBP 3/2014	15 May 2014	Thursday	9.30 am	Putrajaya
JKBP 4/2014	27 June 2014	Jumaat	9.30 am	Putrajaya
JKBP 5/2014	18 September 2014	Thursday	9.30 am	Putrajaya
JKBP 6/2014	3 November 2014	Monday	9.30 am	Putrajaya
JKBP 7/2014	16 December 2014	Tuesday	3.00 pm	Putrajaya

MEETINGS OF THE FINANCE AND TENDER COMMITTEE

MEETING	DATE	DAY	TIME	MEETING VENUE
JKK&T 1/2014	14 August 2014	Thursday	2.00 pm	Putrajaya

MEETINGS OF THE REMUNERATION AND NOMINATION COMMITTEE

MEETING	DATE	DAY	TIME	MEETING VENUE
RQN 1/2014	6 November 2014	Thursday	10.00 am	Putrajaya

MANAGEMENT TEAM

1 IR. ABDUL RAHIM BIN IBRAHIM
Director of Electrical Safety Regulation

2 IR. OTHMAN BIN OMAR
Director of Enforcement and Regional Coordination

3 DATUK IR. AHMAD FAUZI BIN HASAN
Chief Executive Officer

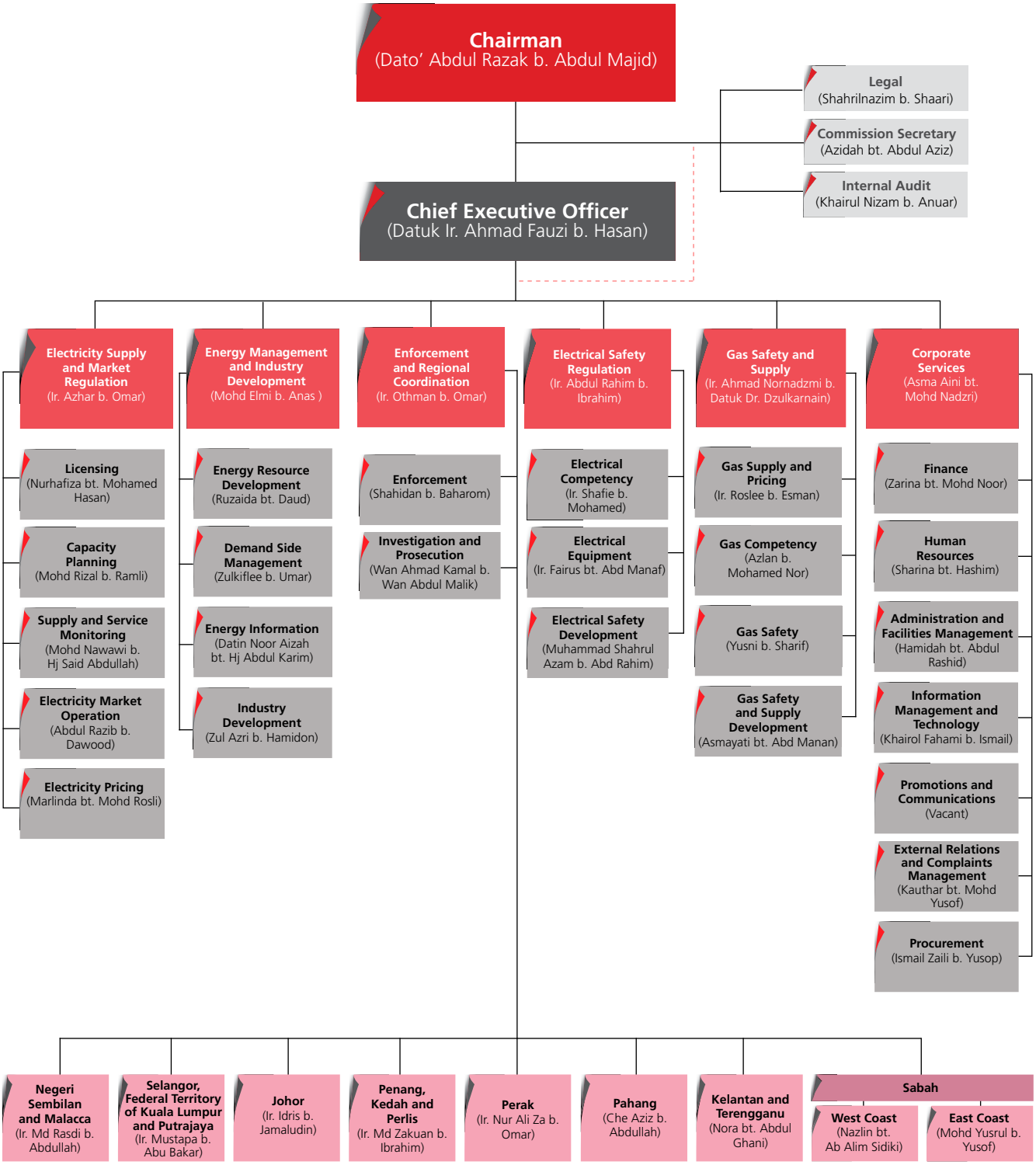
4 **IR. AZHAR BIN OMAR**
Senior Director of Electricity Supply and Market Regulation

5 **MOHD. ELMI BIN ANAS**
Director of Energy Management and Industry Development

6 **ASMA AINI BINTI MOHD NADZRI**
Director of Corporate Services

7 **IR. AHMAD NORNADZMI BIN DATUK DR. DZULKARNAIN**
Director of Gas Safety and Supply

ORGANISATION STRUCTURE



2014 AT A GLANCE

CALENDAR OF EVENTS 2014

22 January 2014

The Energy Commission organised the *Electrical Safety and Work Safety Procedures Seminar* in Ayer Keroh, Malacca. A guidebook titled *Safe Working Procedures for Electrical Work*, priced at RM 10.00 per publication, was introduced during the seminar

18 February 2014

The Chief Executive Officer moderated the Restructuring the *Electricity Supply Industry and Security - Availability, Affordability, Accessibility and Acceptability* session at the *Malaysian Power and Water Summit 2014*

1 March 2014

The *Ya Hijau Programme* was held in conjunction with the *Ya Hijau Sabah Programme*, organised by KeTTHA at Kota Kinabalu. The Energy Commission demonstrated its support by setting up an exhibition to promote safe and efficient energy practices

6 March 2014

The Task Force Power/ Electricity, Energy Efficiency and Oil/Gas/LNG group workshop to exchange ideas on solutions to energy and gas industry challenges was held

11 March 2014

The *TENAGA 2014 WEBINAR* was organised by the Energy Commission and United Business Media (UBM) to promote the *9th TENAGA 2014 Expo and Forum*

12 March 2014

The Chief Executive Officer presented initiatives to enhance energy efficiency in Malaysia during the *Smart Cities Living Seminar*

8 April 2014

Appreciation Night 2014 was held to recognise the contributions of past Energy Commission members who have ended their tenure: former Chairman YBhg Tan Sri Datuk Dr Ahmad Tajuddin bin Ali; YBhg Datuk Pg Hassanel bin Datuk Pg Hj Mohd. Tahir; and YBhg Dato' Ir Aishah binti Dato' Abdul Rauf

CALENDAR OF EVENTS 2014

8 May 2014

A seminar to inculcate electrical safety and energy efficiency with students of Institut Kemahiran Bina Negara (IKBN) Berapit (Berapit National Skills Development Institute) at Bukit Mertajam, Pulau Pinang

10 June 2014

Energy Panel Meeting No 1 2014 with industry players to discuss issues related to the energy sector, particularly energy pricing

10 June 2014

The Chief Executive Officer launched the national campaign for *TEST Your RCCB Today,* organised by The Electrical and Electronics Association of Malaysia (TEEAM)

12 June 2014

The Energy Commission at the *TENAGA 2014 Expo and Forum*

July 2014

The Energy Commission and the Malaysian Gas Association (MGA) exchanged ideas on how to further develop the gas sector in Malaysia during MGA's work visit to the Energy Commission

6 August 2014

The Chief Executive Officer delivered a speech during the *Asian Utility Week 2014*

18 August 2014

The Energy Commission explained piped gas and electrical competency certification to Non-Executive Technicians (NET) of Petronas Carigali Sdn Bhd at the *Upstream NET Capability Exchange 2014 (UNCE 2014)*

11 September 2014

The Chief Executive Officer as a panellist during the Plenary Panel Discussion at *POWER-GEN Asia 2014*

CALENDAR OF EVENTS 2014

18 September 2014

A Day with the Customer, a programme promoting safe and efficient use of electricity and gas as well as highlighting the online services to the public, was held at Keningau Community Hall in Sabah

3 October 2014

The Chief Executive Officer as a panellist during the *Asia-Pacific Climate Change Adaptation Forum*

8 October 2014

Director of Electrical Safety Regulation Ir Haji Abdul Rahim Ibrahim talked about the Energy Commission's programmes and shared tips on electrical safety during a radio interview with BERNAMA Radio 24

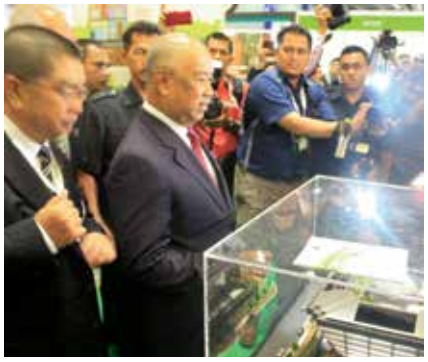
8 October 2014

A briefing on the *Special Industry Tariff and the Enhanced Time-of-Use Tariff,* aimed to provide industry stakeholders with a better understanding of these tariffs

CALENDAR OF EVENTS 2014

19 October 2014

The Energy Commission actively promoted energy efficient practices during the *5th International Greentech and Eco Products Exhibition & Conference Malaysia (IGEM 2014)*



18 November 2014

The Chief Executive Officer delivered a speech before officiating at the *Offshore Engineering Asia 2014 conference*

22 November 2014

The Energy Commission's *Family Day* at I-City in Shah Alam, Selangor

CALENDAR OF EVENTS 2014

18 December 2014

The awarding ceremony for the *Energy Efficiency Challenge 2014* was held in conjunction with the *EPC Implementation in Civil Buildings Seminar*

VISITS FROM INTERNATIONAL DELEGATES

24 February 2014

Delegates from the *ASEAN-Japan Energy Efficiency Market Transformation with Information Provision Scheme* (EMTIPS) during their visit to the Energy Commission to discuss and review the implementation of electrical appliance labelling in Malaysia. The Energy Commission also hosted a forum on efficient energy at the Diamond Building

15 August 2014

A visit from the Energy Commission of Ghana to gather more information about the regulatory framework of the Malaysian energy sector

9 September 2014

Representatives of Aarding Thermal Acoustics, Sulzer Turbo Services, Euroturbine B.V and DGTA from the power generation sector, accompanied by officers from the Embassy of the Netherlands, share ideas about electrical supply issues between the two countries

30 October 2014

Delegates from the European Commission arrive to explore the market for green technology businesses in Malaysia

VISITS FROM INTERNATIONAL DELEGATES

11 November 2014

Officers from the Ministries in Indonesia and Perusahaan Listrik Negara (National Electricity Corporation of Indonesia – PLN) visited Malaysia to enhance regional cooperation towards a sustainable energy sector

20 November 2014

Two international drivers for FIA Formula E-Championship reviewed iconic sites and green buildings around Putrajaya-including the Energy Commission's Diamond Building-in conjunction with the Formula E-Race in Putrajaya

TEAM SPIRIT AMONG STAFF MEMBERS

The Energy Commission staff showed creativity and great teamwork during the *Lobby Decorating Contest* held in conjunction with the 2014 Eid-ul-Fitr celebration during the month of Ramadhan

THE ENERGY COMMISSION IN THE MEDIA

Harian Metro

Iringan doa untuk penumpang, kru MH17

Produk elektrik seludup bermutu rendah

CUCUKAN MAUT

Semangat syahid Gaza

Malaysia's current power reserve 'sufficient'

THE government do not foresee any power crunch crisis in Malaysia as there are contingency plans in place to overcome any unplanned delays.

Energy Commission (EC) CEO Datuk Ir Ahmad Fauzi Hasan said the current power reserve in Peninsula Malaysia is at an optimum level of 25%, which is sufficient to meet power demand in the country until 2030.

"We have adequate reserve capacity for all of these unplanned power plants delays. Our power reserve margin of 25% to 30% under the long-term power generation plan is sufficient to counter any technical failures or delays in the operations of power plants," he told a press conference at the Asean Power Week in Kuala Lumpur yesterday.

Ahmad Fauzi said the contingency plans include extending the operation of the first generation power plants that are due for retirement.

"That has been done previously through bidding process among the first generation plants as well as extended plants owned by Tenaga Nasional Bhd," he said.

Since early December 2013, Malakoff Corp Bhd's power plant in Tanjung Bin, Johor, is still undergoing maintenance works and unable to function due to boiler tube leakages. Tanjung Bin has a capacity of 2,100MW.

Another power plant, Jimah, owned by 1Malaysia Development Bhd (1MDB), the state investment unit, also suffered a similar technical breakdown during the same period.

1MDB, an independent power producer, has power generation capacity of 5,000MW and owns six power plants located in Algeria, Australia, Bahrain, Kuwait, Oman and Saudi Arabia.

Meanwhile, the Deputy Minister of Energy, Green Technology and Water, Datuk Seri Mahdzir Khalid said Malaysia has to catch up in its renewable energy (RE) quest as the capacity generated by the approved projects is still low.

Mahdzir said although the government has set an ambitious target of 985MW from RE generation by 2015, the approved projects in the first quarter of 2014 only reached over 100MW with the actual implementation only reaching 200MW.

"As part of Malaysia's strategy to further diversify energy sources in electricity generation, greater importance has been made to increase the capacity of renewable sources to meet peak demand," he said.

The deputy minister also said the current mix of electricity generation in Peninsular Malaysia consisted of gas (52%), coal (42%), with hydro and RE making up the remainder.

The government targets to increase coal to 44% by 2020 in a bid to cut carbon intensity.

Asean Power Week is a three-day conference and exhibition for the electric power generation industry. — by FARAH ADILLA

Penyambungan elektrik haram boleh bawa padah

Maut terjejak kabel yang terbenam dalam tanah dan mati terkena renjatan elektrik ketika membuat penyambungan haram.

Itu antara kes membabitkan penduduk setinggan dan perkampungan atas air di negeri ini, berikutan tindakan seplentir mereka yang sanggup membahayakan nyawa dengan membuat penyambungan elektrik secara haram.

Pengarah Kawasan Suruhanjaya Tenaga (ST) Pantai Barat Sabah, Nazlin Ab Alim Sidiki, yang mendedahkan perkara itu, berkata ada seplentir penghuni menyembunyikan wayar penyambungan dalam paip untuk disambungkan ke longkang, dibenamkan dalam tanah dan diletakkan atas pagar.

Kaedah itu, katanya, bagi menampakkan ia kelihatan sempurna, namun ia tidak mengikut standard ditetapkan dan tanpa mengira bahan yang boleh ditanggung, sekali gus menyumbang kepada risiko kebakaran selain membahayakan nyawa mereka.

"Selain itu, pelbagai cara digunakan termasuk menyambungnya dari tiang elektrik yang diconderongkan, malah ada yang lebih berani menyambung dari pada pencawang utama.

"Kami pun tidak tahu bagaimana mereka buat penyambungan daripada pencawang utama hingga ada yang mati terkena renjatan elektrik, namun laporan tidak dibuat kerana si pelaku adalah pendatang asing tanpa izin," katanya kepada *BH*.

BH semalam mendedahkan, tindakan menyambung elektrik secara haram, selain membinasan rumah di perkampungan atas air dan setinggan yang rapat, antara punca keraf berlaku kebakaran di Sabah, kebelakangan ini.

Malah, ada penghuni sanggup menanam kabel dalam tanah bagi mengelak kegiatan mereka membuat penyambungan haram dikesan oleh pihak berkuasa.

Bagi mengurangkan kes curi elektrik dan kemalangan jiwa, Nazlin berkata, pemasangan elektrik

Doing it the proper way

Possible to legally install electric fence, says engineer

By SAN VI LIANG

PENALING LIHA: Your house has been broken into and your dog had its throat slashed.

You have spent many sleepless nights worried that the gang will be back to steal again or worse, harm your family.

You are thinking of installing an electric fence, but you are not sure if that is legal.

According to engineer Wazir Thurissa, a properly installed electric fence is legal – if all the conditions set by the Energy Commission are met.

"There are clear specifications on how a legal electric fence may be installed," said Wazir, from Intelligent Power (M) Sdn Bhd.

"All electric fences are controlled by an energizer, the heart of the whole system," he said.

"The Commission has regulations, based on International Electrotechnical Commission re-

ings, and if you follow them, an electric fence will not kill anyone, nor even a pet.

"It will just give you a shock," said Wazir.

He said the energizer was built with Commission-approved systems that regulated and discharged electricity through the fence, strong enough to cause a painful shock but not harmful to humans or, for that matter, animals.

"When you look at a wall socket or a plug, you will see 230 volts written there, and both its 0 to 50 hertz.

"What it means is that there is a frequency of 50 pulses of electricity alternating between a positive and negative charge flowing per second. That is what will kill you.

"But an electric fence only has a frequency of around one-tenth of direct current.

"It will release one sharp burst that is not prolonged long," said Wazir.

"Because of the low frequency, you will feel the pain, but you will not try," he added.

Electric fences must also display a clear warning sign.

The Commission has approved a black and yellow sign with warnings in English, Bahasa Malaysia, Chinese and Tamil.

Another requirement by the Commission is for the fence to be installed 1.5m above the ground.

"If you have a 3m hedge and a 3m wall, the fence can only be installed on top of the wall," said Wazir.

"And if you want it running from the ground level, you have to put a non-electrified barrier (non-EPC)," he said, adding that the installation should be supervised by an engineer licensed by the

THE STAR ONLINE

BAYAN

Business News

Power planning necessary to avoid similar problem as in water sector

KUALA LUMPUR: Further planning of power plants is needed to cope with the rising demand for electricity as well as planning for the future, according to MyPower Corp Bhd advisor Datuk Abdul Razak Abdul Majid (pic).

He emphasised the need for further planning up to cater for the future so as to avoid a situation similar with the water industry.

"We are growing at about 3.5% in terms of energy demand. Sometimes it goes up to 4%," said Abdul Razak, who is also the Energy Commission (EC) chairman.

"We're OK in the peninsula. We don't hear many complaints about (interrupted supply). We have enough to serve. However, the story may be slightly different in Sabah," he said.

According to the EC, the reserve margin for 2013 was 31%, with an installed capacity of 21,748MW. A peak demand of 16,901MW was recorded in June this year.

When asked, Abdul Razak said it was not discounting any options for power supply.

"Interconnection from Sarawak will also be considered," he added.

He disclosed that Manjung 4's 1,000MW coal-fired power plant in Perak, owned by Tenaga Nasional Bhd (TNB) had also been switched on recently.

Commenting on 1Malaysia Development Bhd's recent success in various power plant projects, Abdul Razak said: "It is just another player, not preferred. It has

'No Track 4A re-tender'

JOHOR POWER PLANT: TNB, SIPP sign non-binding pact, but details yet to be finalised

KUALA LUMPUR

THERE will effectively be an annulment of the multi-billion ringgit power plant project codeid Track 4A now that Tenaga Nasional Bhd (TNB) has sealed a pact with SIPP Energy Sdn Bhd, analysts say.

TNB announced on Thursday that it had signed a heads of agreement (HoA) with SIPP to build and operate a 1,000-1,400MW gas power plant in Pasir Gudang, Johor, ahead of the Energy Commission's deadline yesterday to respond to the conditional award.

Public Investment Bank said this also means that YTL Power International Bhd is effectively excluded from the power plant project.

"We understand that it is a non-binding agreement to cooperate with SIPP and further details regarding the joint venture have yet to be disclosed and finalised," the firm said in a report yesterday.

TNB and SIPP have yet to determine the details of the joint venture, such as shareholding and financing structures and proposed tariff.

"Once finalised, the proposal will be submitted to the commission for approval. While no timeline was given, we estimate it should be completed before the end of this year," Public Investment said.

Analysts at AmResearch Sdn Bhd believe the HoA was to provide additional time for deliberation.

"As TNB invited to reply to the commission's offer by today (Friday), we believe that this announcement, which did not indicate the HoA duration, was to provide additional time for deliberation," they wrote in a report yesterday.

The commission had in May offered a conditional award for the project to SIPP via a direct negotiation with participations by TNB and YTL Power.

In contrast to the competitive tenders conducted since 2012, the commission stated that the policy change stemmed from a need to fast-track the project, following the power blackout in five states in Peninsular Malaysia earlier this year.

But following the negative publicity on the award, YTL Power opted to withdraw from the project while TNB unions had expressed their concerns to the energy commission.

AmResearch pointed out that there are three conditions under the commission's offer for Track 4A: the finalised tariff must be comparable to the 1,071MW Prai combined cycle power awarded back in 2003; the engineering, procurement, and construction provider must be selected via a competitive bid for a proven gas turbine technology; and technical and commercial proposals have to be approved by the commission.

The research house finds that at this stage, there is a strong likelihood that TNB will end up a substantial equity partner in the project, given that it is the sole off-taker of power in Peninsular Malaysia.

"Also, for Track 4A to be fast-tracked, TNB needs to expedite the completion of the 500kV southern link, which links Lenggeng to Segamat, Sedenak and Yong Peng in Johor, from an earlier schedule to December 2015," AmResearch added.

Business News

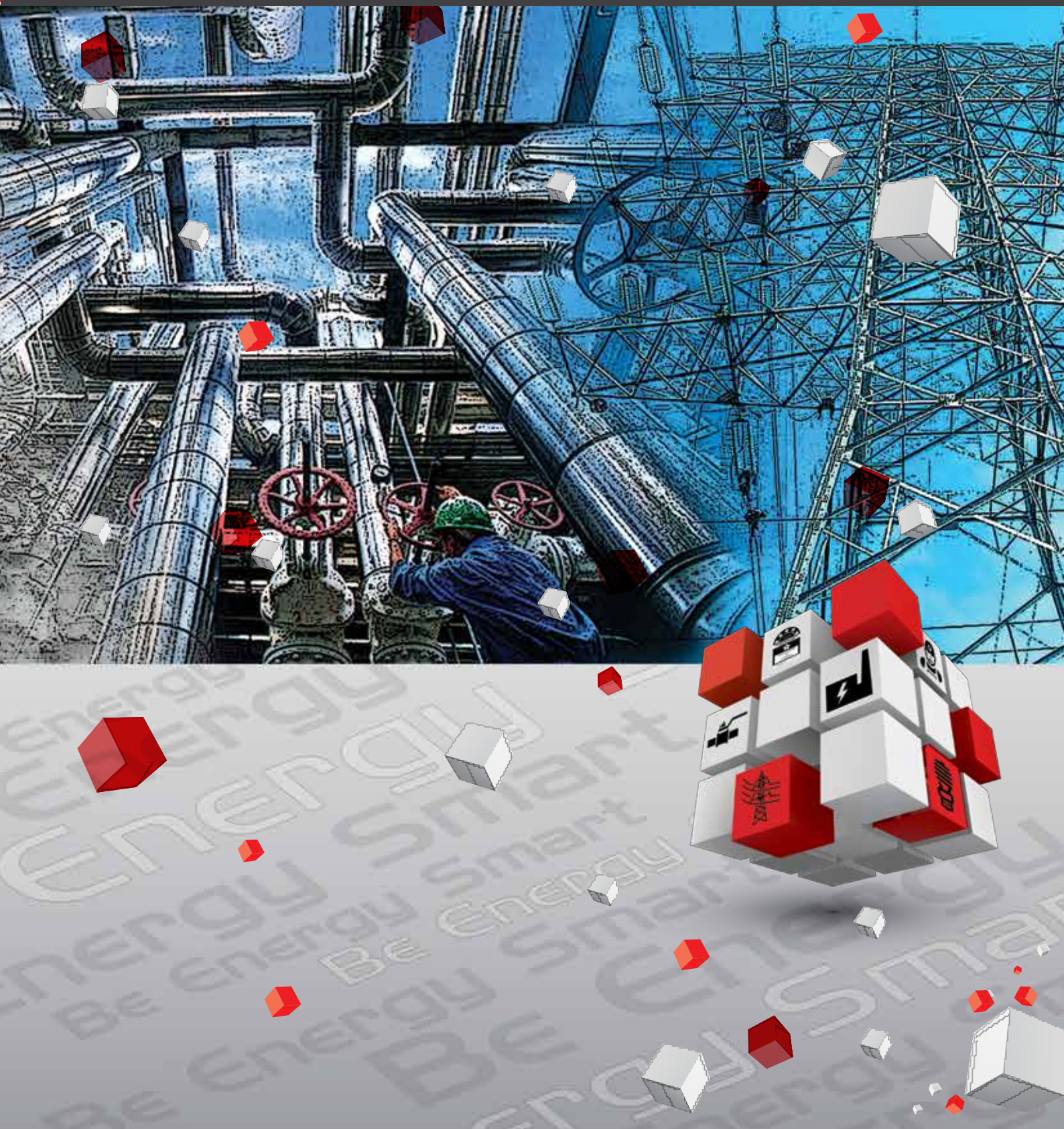
Energy Commission power plants


Govt revises gas price for non-power sector
Possible to legally install electric fence, says engineer
The uncanny quest for more power
Top stories
Track 4A details to be finalised this week
Abdul Razak Abdul Majid named new Energy Commission chief
Tarif elektrik dua peringkat sedang dikaji - MyPOWER

THE ENERGY COMMISSION RECOGNISED AS *OUTSTANDING GOVERNMENT PROCURER* AT *PFI ASIA BEST PRACTICE 2014*

The Energy Commission of Malaysia was recognised for its outstanding achievement in the Government Procurer Category when it was awarded with the *PFI Asia Best Practice Citation* during a ceremony in Singapore on the 3rd of June 2014. The ceremony, organised by International Enterprise (IE) Singapore in collaboration with PFI, aims to enhance development, structuring, financing and the implementation of infrastructure projects in the Asian region.

ENHANCING ENERGY RELIABILITY, SAFETY AND EFFICIENCY



CONTINUOUS ENERGY SUPPLY

ENERGY SUPPLY AND DEMAND

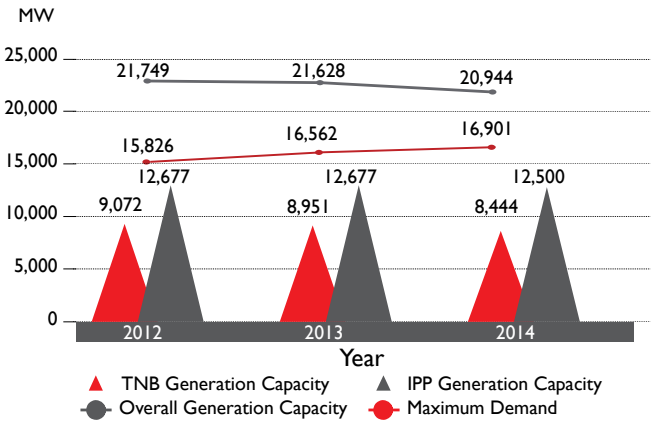
Electricity generation in Peninsular Malaysia and Sabah increased in 2014 compared to 2013. In the Peninsula, electricity generation increased by 2.2% from 112,358 GWh in 2013 to 114,856 GWh in 2014, while in Sabah, electricity generation increased by 1.3% from 5,524.4 GWh in 2013 to 5,594.3 GWh in 2014.

In the Peninsula, the maximum demand posted by the grid system saw an increase of 2.0% from 16,562 MW on 13 May 2013 to 16,901 MW on 11 June 2014. Power generation on 11 June 2014 was 352.9 GWh, a 4.6% increase from the recorded power generation in 2013, which was 337.20 GWh. The highest daily output of 355.8 GWh was recorded on 24 June 2014, an increase of 3.06% from the previous year, which had only recorded 345.25 GWh.

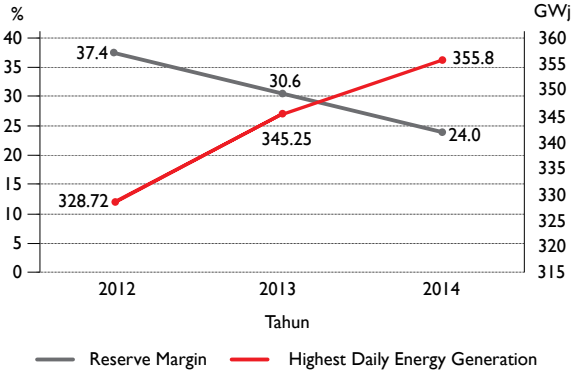
The total installed capacity in the Peninsula was 20,944 MW compared to 21,628 MW in 2013. This decline in capacity is due to the ceased operation of the generation units in Sultan Iskandar Power Station in Pasir Gudang, which had a capacity of 240 MW, and the Jambatan Connaught Bridge Power Station, which had a capacity of 116 MW.

Due to increased demand for electricity and decreased installed capacity on the grid system, the Peninsula's reserve margin dropped from 30.6% in 2013 to 24% in 2014. This reserve margin decrease was also caused by unscheduled power station disruptions that exceeded the allowed rate stipulated in the Power Purchase Agreement (PPA) or the Service Level Agreement (SLA). 32 generation units, with a total capacity of 9,272 MW, had unscheduled disruptions which exceeded the stipulated rate from 2011 to 2014.

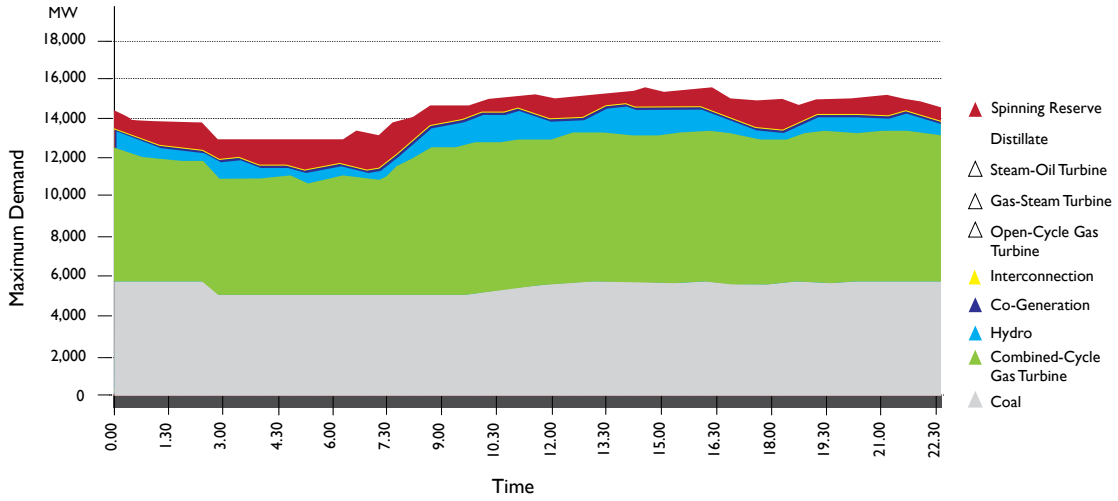
Highest Maximum Demand and Installed Power Generation Capacity in Peninsular Malaysia, 2012-2014



Highest Reserve Margin of Energy Generation in Peninsular Malaysia, 2012 -2014



Generation Profile in Peninsular Malaysia, 11 June 2014



Installed Capacity According to Generator Plant Type, Peninsular Malaysia

Plant Type	Main Fuel	MW
Conventional Thermal	Coal	7,056
Conventional Thermal	Gas/Oil	564
Open-Cycle Gas Turbine	Gas	2,224.4
Combined-Cycle Gas Turbine	Gas	9,200
Hydroelectric	Hydro	1,899.1
Installed Capacity		**20,943.5**

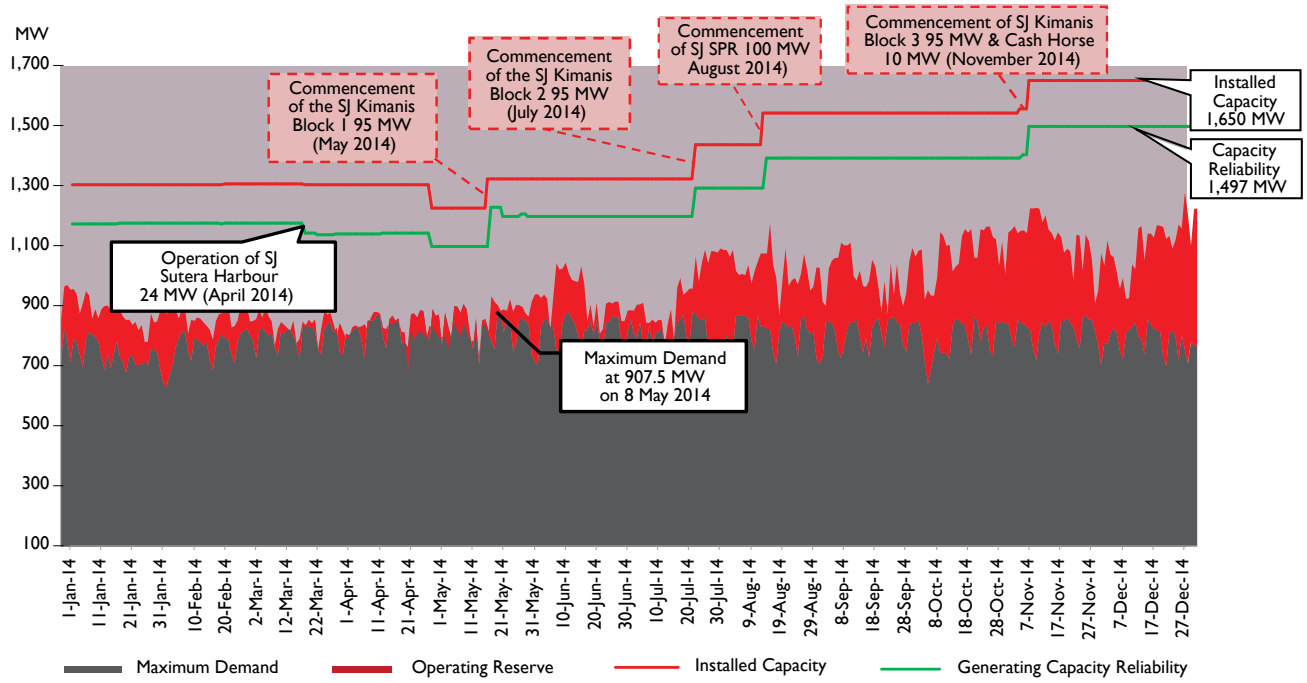
In Sabah, the grid system recorded an increase of 3.6% in maximum demand, from 874.4 MW as of 23 September 2013 to 907.5 MW as of 8 May 2014.

SESB-owned power plants and Independent Power Producers (IPPs) are still showing low levels of availability and reliability, especially in the East Coast. Power generation plants in this area rely mostly on diesel/MFO generation units, and most of these units are ageing.

The first block of the Kimanis Power Plant (KPP) with a capacity of 95 MW began operations in May 2014. This was followed by two additional blocks, each with a capacity of 95 MW, which commenced operations in July and November 2014 respectively. In addition, the SPR 100 MW combined-cycle power plant also commenced operation in August 2014, followed by the 10 MW biomass-powered plant by Cash Horse Sdn Bhd in November 2014. Therefore, the overall new added capacity to the Sabah Grid System in 2014 was 395 MW.

However, Sabah still faces inadequate generation capacity to meet the increasing demand for electricity.

Daily Reserve Operation and Maximum Demand in Sabah

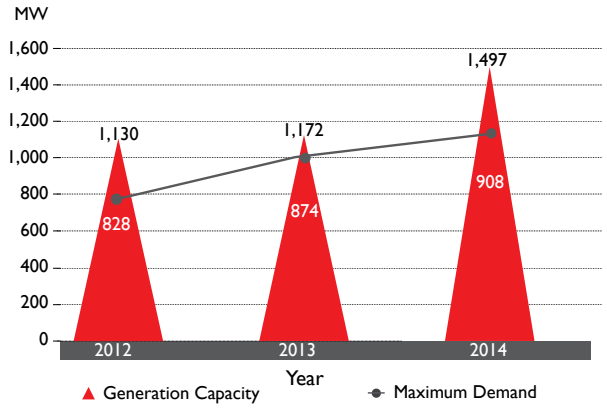


The total installed power generation in Sabah is 1,650 MW. However, most power plants and canopy generating sets owned by SESB ceased operations in April and November 2014 due to damage. After taking deration and generation systems' curtailment issues into account, the generating capacity reliability stood at 1,497 MW.

Of the overall generating capacity reliablity, 1,022.5 MW is generated by IPPs, 400.7 MW by

The overall amount of energy generated in 2014 in Sabah is 5420.9 GWh, 75.7% of which is from gas, 14.9% from MFO and diesel, 5.7% from hydro and 3.6% from renewable energy.

Highest Generating Capacity Reliability and Maximum Demand in Sabah, 2012 - 2014



Installed Generation Capacity and Generating Capacity Reliability According to Fuel Type, Sabah

Fuel	Installed Generation Capacity (MW)	Generating Capacity Reliability			
		West Coast (MW)	East Coast (MW)	Total (MW)	Percentage
Gas	1,034.2	983.5	0.0	983.5	66
Diesel/MFO	487.3	113.0	281.1	394.1	26
Hydroelectric	76.9	74.5	1.6	76.1	5
Biomass	52.0	0.0	43.0	43.0	3
Total	1,650.4	1,171.0	325.7	1,496.7	100

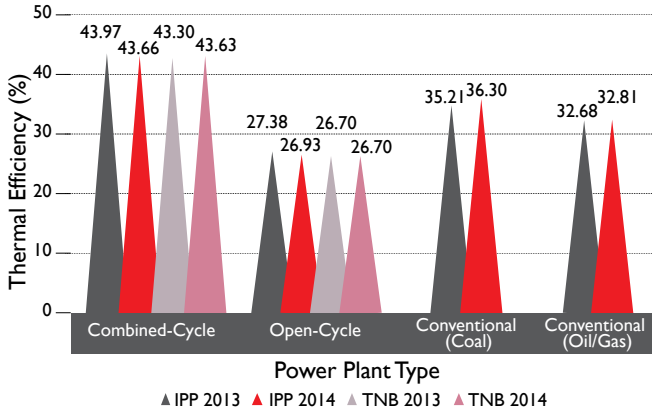
GENERATION SYSTEM PERFORMANCE

PENINSULAR MALAYSIA

Average power plant thermal efficiency is at a satisfactory level. However, certain factors such as operation modes, maintenance, age and degradation affect the thermal efficiency of power plants.

Since 2013, power plant thermal efficiency has been consistent. Coal-fired power plants have shown an increase of 1% in thermal efficiency, following the implementation of scheduled maintenance and a reduction of unplanned disruptions.

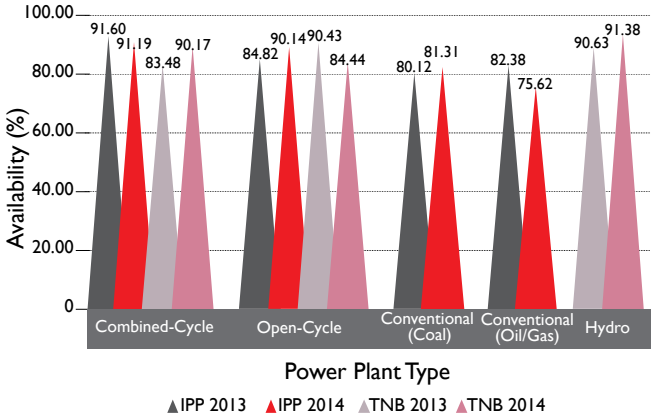
Average Power Plant Thermal Efficiency in Peninsular Malaysia



In terms of Equivalent Availability Factor (EAF), most power plants in the Peninsula recorded an increase of between 1% and 7%. A significant increase was recorded by IPP-owned combined-cycle power plants while open-cycle power plants and conventional power plants (oil/gas) experienced a decrease.

The increase and decrease in EAF for power plants is closely related to the rate of unscheduled disruptions. The entry of imported liquefied natural gas to fulfil domestic fuel supply has also indirectly increased the average EAF.

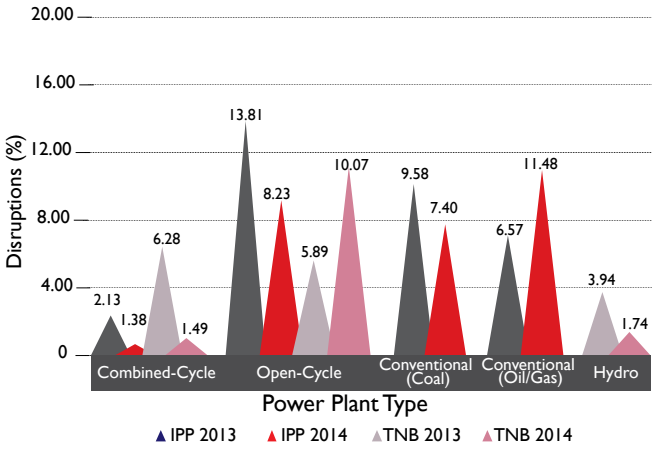
Average EAF for Power Generation in Peninsular Malaysia



The average Equivalent Unplanned Outage Factor (EUOF) decreased in 2014 compared to the previous year. This reflected a more stable electricity supply in the Peninsula. Base load power plants, namely combined-cycle and coal plants, recorded EUOF rates of 1.49% and 7.40% respectively. These high readings are said to be caused by the prevalent boiler tube leak.

Both open-cycle and conventional (oil/gas) power plants have recorded an increase in EUOF rates. Among the factors that contributed to the decline in reliability for these power plants are condenser tube leak, condenser filter choke, poor condenser vacuum, hot gas leakage, vibration and the ageing factor of the power plant itself.

Average EUOF for Power Generation in Peninsular Malaysia

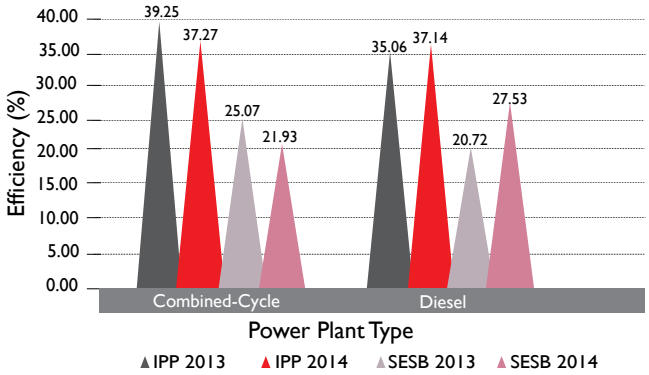


SABAH

Combined-cycle gas turbine power generation plants showed a decrease of 3% in their thermal efficiency, compared to 2013. Among the factors contributing to the decrease were several gas curtailment incidents that occurred in IPP-owned power plants. Another contributing factor was the difficulty of obtaining replacement parts for SESB-owned power plants that have unique designs.

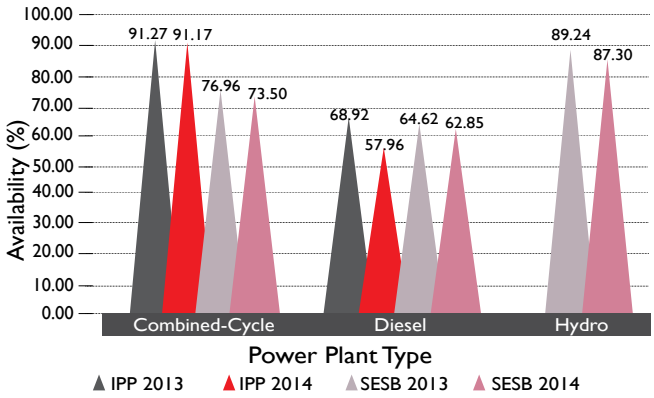
IPP and SESB-owned diesel power plants showed a rise in thermal efficiency between 2% and 7% due to a decrease in cyclic mode operation or start-stop needs by system operators. The main factor that improved the thermal efficiency of SESB-owned diesel power plants was the termination of the Sandakan Power Plant, which was replaced by the more efficient Kubota Power Plant.

Average Power Plant Thermal Efficiency in Sabah



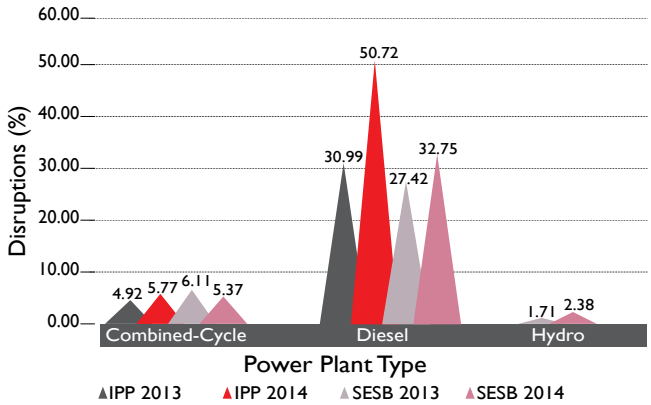
On average, the EAF rate in Sabah declined by a rate of between 2% and 11% due to long-term unscheduled disruptions and gas supply rationing. Meanwhile, SESB-owned power plants declined by 2% due to upgrades made to the first unit of the Tenom Pangi Power Plant to provide it with higher generation capacity.

Average EAF in Sabah



Diesel-powered generation plants have a high EUOF, due to ageing and the prevalence of technical problems. Most power plants have almost reached the end of their lifespan. However, to ensure electricity supply continuity in Sabah, most power plants cannot be terminated. On the other hand, the ARL and Libaran power plants have suffered damage at the end of their PPA terms and had to be terminated due to insufficient repair funds.

Average EUOF in Sabah



FUEL SUPPLY IN PENINSULAR MALAYSIA

Gas remains the main fuel for power generation. The increased percentage in gas-based power generation and the use of MFO and distillates are caused by unscheduled disruptions in coal-fired power plants, due to issues like boiler tube leaks.

Power Generation Fuel Mix, 2012 -2014

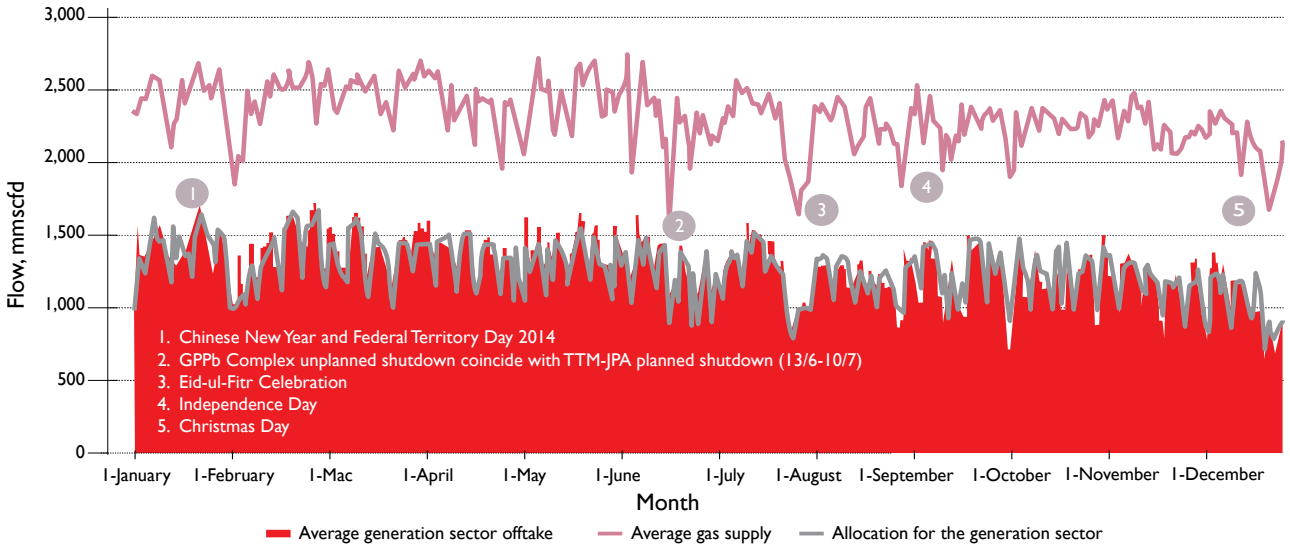
Fuel	2012	2013	2014
Gas	45.4	50.1	51.8
Coal	45.7	42.8	42.3
Hydro	5.0	4.8	3.6
Others	3.9	2.3	2.2

NATURAL GAS

On average, natural gas consumption by the energy sector is at 1,282 mmsfcd compared to the average amount of gas allocated by PETRONAS, which stood at 1,273 mmsfcd. Since the commencement of the regasification terminal in Malacca on 23 May 2013, gas supply for the energy sector improved.

In early 2014, the amount of gas supplied to the energy sector was higher due to several issues faced by the coal-fired plants, such as boiler tube failure. The gas supply for the energy sector improved after the first six months. The average rate of gas consumption by the energy sector was 0.3% higher than planned.

Gas Supply and Offtake for the Energy Sector



Note: Average gas offtake for 2014: 1,282 mmscfd

Scheduled Interruptions for Upstream Gas Facilities

A few scheduled interruptions for upstream gas facilities were implemented. According to early planning, reduction in scheduled interruptions would be put into effect during the scheduled interruptions for the Terengganu Crude Oil Terminal and Regasification Terminal-1. However, due to the stable gas supply situation and coal-fired power generation, no scheduled gas supply reductions were carried out.

Scheduled Interruptions of Upstream Gas Facilities

Scheduled Disruption of Main Facility	Duration of Interruptions	Gas Supply Curtailment
Onshore Slug Catcher Train A shutdown	31 Jan - 9 Feb 2014	No
Jerneh Rig Mobilisation	11 - 15 March 2014	No
Regassification Terminal-1 Maintenance shutdown	9 - 11 May 2014	No
Trans Thailand-Malaysia Maintenance shutdown	13 June - 10 July 2014	Yes
Trengganu Crude Oil Terminal shutdown	16 - 29 Aug 2014	No
Onshore Slug Catcher Train C shutdown	13 - 20 Sep 2014	No
Guntong E Complex shutdown	13 - 20 Sep 2014	No
PM3 Annual shutdown coincides with Resak Vessel Cleaning	24 Sep - 3 Oct 2014	No
Regassification Terminal-1 Turnaround	8 - 28 Oct 2014	No
Guntong E Complex shutdown for control system rectification work	24 - 27 Dec 2014	No

Unscheduled Interruptions of Upstream Gas Facilities

There were a few incidents of unscheduled interruptions on upstream gas facilities. However, the unscheduled disruption which occurred during the Trans Thailand-Malaysia Joint Development Area Maintenance Shutdown (13 June 2014 – 10 July 2014) is the only one that caused the curtailment of gas supply to the energy sector.

Unscheduled Interruptions of Upstream Gas Facilities

Upstream Gas Facility	Capacity (mmscfd)	Date	Cause	Gas Supply Curtailment
Bekok C	100	2 - 7 May	Valve leakage	No
Duyong	320	6 - 7 May	Gas and fire alarm system failure	No
Gas Processing Plant Complex B	800	19 June	Pipe failure	• 19 – 21 June • 26 – 27 June • 28 – 29 June • 3 – 4 July
Guntong E	550	24 - 26 June	Electricity disruptions	
Tabu	250	24 - 29 June	Electricity disruptions	
Telok	300	26 June	Inverter failure on power supply unit	
Palas	70	26 June - 4 July	Pipe leakage	
Jerneh Train C	150	2 - 3 July	Damage on processor	

On 6 May 2014, gas supply allocated for the energy sector was at 1,250 mmscfd, compared to the required 1,600 mmscfd. This demand is high, considering that the daily average nomination of the energy sector is at 1,268 mmscfd, and is due to unscheduled disruptions involving two power generation units at a coal-fired power plant in Manjung. Although the upstream gas facilities commenced operations on 7 May 2014, the allocation of gas to the energy sector was still limited to 1,300 mmscfd to ensure that the pressure monitoring of the pipeline was at a satisfactory level.

Following the capacity generation curtailment due to unscheduled disruptions caused by coal-fired generation units, as well as a limited gas supply situation, it became necessary to use distillate fuel to replace gas for 19 gas generation units on 7 May 2014. The use of 15 million litres

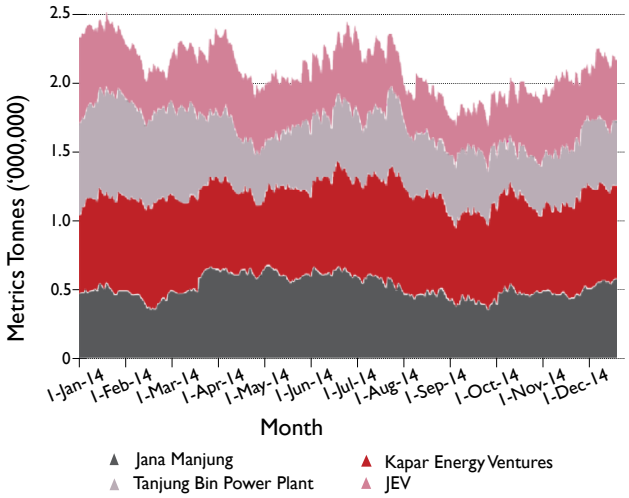
of distillate as replacement fuel caused the gas generation units to generate power at a reduced rate, compared to their actual power generation rate. This deration also contributed to reduced system capacity.

COAL

Overall, coal stock in the Peninsula was stable and sufficient to accommodate the increasing electricity demands in 2014.

18.74 million metric tonnes of coal used for the coal-fired power plants in the Peninsula were imported. Indonesia was the biggest supplier at 60%, followed by Australia at 25%, South Africa at 9% and Russia at 6%.

Coal Stocks at Power Plants



Quantity of Imported Coals at Power Plants (Millions of Metric Tonnes)

Country	Kapar Energy Ventures	Janamanjung	Tanjung Bin	Jimah Energy Ventures	Total
Australia	2.16	-	1.48	1.02	4.66
Indonesia	-	7.13	2.04	2.11	11.28
South Africa	0.75	-	0.93	-	1.68
Russia	0.57	-	0.47	0.08	1.12
Total	3.48	7.13	4.92	3.21	18.74

Types of Imported Coals at Power Plants (Millions of Metric Tonnes)

Coal Type	Kapar Energy Ventures	Janamanjung	Tanjung Bin	Jimah Energy Ventures	Total
Bituminous	3.48	-	3.89	2.26	9.63
Sub-bituminous	-	7.13	1.03	0.95	9.11
Total	**3.48**	**7.13**	**4.92**	**3.21**	**18.74**

Based on coal supplies from 1 September 2013 until 31 August 2014, the Kapar and Jimah Power Plants maintained a sufficient capacity of coal stockpile as stipulated in the PPA.

The storage capacity of the Tanjung Bin Power Plant was below 0.51 million metric tonnes since August 2014 due to the continuous failure of its unloader. Coal deliveries were made according to schedules to ensure that the existing stockpile was above 0.51 million metric tonnes. The damage to the unloader resulted in a low loading rate and delayed coal delivery to the station. The stockpile capacity of the Tanjung Bin Power Plant managed to reach 0.50 million metric tonnes by December 2014.

The storage capacity of coal in the Janamanjung Power Plant saw an increase after TNB Fuel Services finalised all coal-related contracts, amounting to 0.15 million metric tonnes, with the plant. This resulted in a coal storage capacity of 7.30 million metric tonnes for the Janamanjung Power Plant.

The price of coal in all coal-fired power plants saw a decline. This is due to low global demand and declining fuel cost for transportation. The declining oil price also influenced the global coal market price.

Initiative to Increase Reliability of Electricity Supply in Peninsular Malaysia

One contributing factor to the disruptions in the operations of power plants is coal supply that does not suit the design of the generation plants. However, unscheduled disruptions declined due to actions taken by all the parties involved. As at the end of 2014, operating reserves increased due to the lower demand and decreasing unscheduled disruptions.

As a result of the discussions between power plant representatives SB and TNBF, all parties agreed to supply coal according to the preferred coal list, which specifies the coal type that would suit the boiler to prevent slagging and fouling risks. The generators also implemented relevant and reasonable modifications to the boiler design to minimise the shaping of slag and the accumulation of deposits. Moving forward, the use of coal of various qualities will require burning analysis and blending facilities.

The Coal Supply Committee chaired by the Energy Commission established the Boiler Tube Failure Working Group to analyse causes of recurring boiler tube problems in the Peninsula. Research varied from the aspects of coal quality, power plant operations, as well as the boilers' design. The Working Group then recommended steps to be taken to overcome the problems.

One of the mitigation actions taken by the Grid System Operator to ensure sufficient inventory of fuel, is notifying the power plants of issues pertaining to increasing existing stock as soon as possible during the unscheduled disruptions, and the closing of gas facilities. PETRONAS also implemented various initiatives to minimise the unscheduled disruptions in their facilities.

The energy sector, on average, received gas distribution of 1,282 mmsfcd from PETRONAS, compared to the average daily 1,267 mmsfcd supply from TNB.

The average nomination for 2014 was 1,267 mmsfcd and 1,267 mmsfcd for 2013. The increase in distribution was caused by the increase in the number of power outages from 212 days in 2013 to 218 days in 2014. Of the total, 74 days were scheduled disruptions while 144 days were unscheduled disruptions.

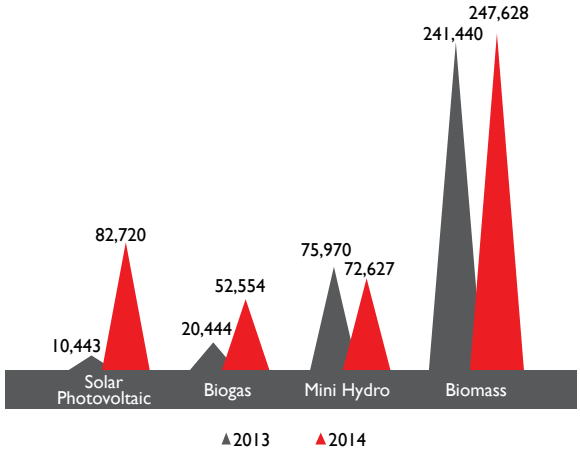
RENEWABLE ENERGY-BASED GENERATION

Biomass-fueled generation still records the highest electricity generation compared to other renewable energy resources. Solar power generation recorded was based on licensed installation, which includes photovoltaic power generation plants that hold Feed-in Approval Holder certificates issued by the Sustainable Energy Development Authority (SEDA).

Power generation from biogas-fuelled plants also showed an increase of 150% as compared to 2013. This is due to the operation of two additional biogas-fuelled plants and improved consistency in power generation as recorded by the other biogas-fuelled plants.

Mini hydro stations showed a reduction of 4% in 2014 compared to 2013 following bad weather at the end of 2013. While mini hydro generation is dependent on the amount of rain, when trapped rainwater exceeds the allowed level, it can cause overflowing and result in damage to the station.

Electricity Generation Using Renewable Energy (MWh)



TRANSMISSION SYSTEM PERFORMANCE

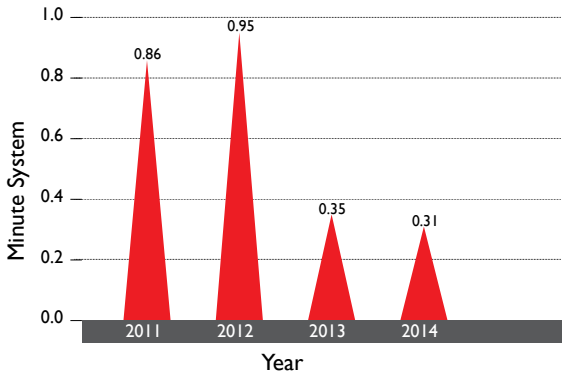
PENINSULAR MALAYSIA

System Reliability

The transmission system performance in Peninsular Malaysia in the last four years showed a 64% reduction from 0.86 minutes in 2011 to 0.31 minutes in 2014. This was measured based on the Delivery Point Unreliability Index (DePUI).

In general, the minute system performance for the national grid was at a satisfactory level and did not exceed the set target, which was 1 minute.

DePUI - Minute System in Peninsular Malaysia



In 2014, one tripping incident occurred on the transmission system in the Peninsula that saw a load loss exceeding 50 MW, compared to two incidents in 2013. This shows that the transmission system performance in the Peninsula remained at the same level. However, one load-shedding incident was reported on 7 May 2014 compared to no incident in 2013. The load-shedding incident involved six states in the Peninsula: Kedah, Perak, Pulau Pinang, Malacca, Negeri Sembilan and Johor.

Grid System

The power curtailment on the grid system remained at 275 kV Segari (previously known as Ayer Tawar)-Batu Gajah Line and Supergrid XGT 500/275 kV Ayer Tawar transformer. Both curtailments were due to the concentration of generators in the Lumut Manjung area, which increased risks during energy transfers from the North to the Middle Zone. In this area, several power generation plants-such as Janamanjung (3,070 MW), Segari (1,303 MW) and GB3 (640 MW)—can cause an extremely high extra load exceeding 150% on the Segari-Batu Gajah Line. This translates to more than 130% of extra load on the Supergrid XGT 500/275 kV Ayer Tawar transformer, if both 500 kV lines between Ayer Tawar-Bukit Tarek and between Bukit Tarek-Janamanjung trip at the same time.

Following the planning of transmission lines to distribute energy from the recent generation projects in Manjung that are predicted to be behind schedule, a few measures were taken to ensure the grid system's strength remains secure. One of the measures was to reconfigure the system involving distribution on the busbar at the 500 kV Janamanjung substation, and connection at 500 kV Ayer Tawar. This configuration aimed to manage the extremely high thermal overload on the 275 kV line from Perak to the Middle Zone that could result in instability in the grid system.

However, this configuration would result in a 500 kV Single Circuit as the only one to operate in connecting the Janamanjung substation to Bukit Tarek.

Therefore, if there is a need to generate and transmit cheaper energy from Janamanjung, any disturbance on the single circuit would cause an under-frequency load-shedding defence scheme and subsequently may result in the collapse of electricity supply in the country.

In relation to that, to ensure that reconfiguration can be performed, a temporary waiver of the N-1 criteria in the Malaysia Grid Code (MGC) and Transmission Security and Reliability Standard (TSRS) for the 500 kV Janamanjung-Ayer Tawar-Bukit Tarek line corridor was granted to TNB. The waiver will remain until the second 500 kV line corridor connecting Ayer Tawar-Bentong South-Kuala Lumpur begins full operation by September 2017.

A load loss incident exceeding 50 MW also occurred in 2014. However, with a strong defence scheme, no incident that caused a huge disruption was reported.

Loss Load Incidents on Transmission Line

Date	Period (Start/ End)	Component	Load Loss (MW)	Energy Loss (MWj)	Cause
17 July	1806/ 1808	132 kV Benta-Raub overhead line and 132 kV Jengka-Jerantut overhead line	50	1.17	132 kV Benta-Raub overhead line tripped due to the bad weather in Benta. At the same time, 132kV Jengka-Jerantut overhead line tripped at the Jengka side.

Incident of Load-Shedding

On the 7th of May 2014, the generation capacity on the grid system in the Peninsula was reduced by 1,400 MW following the unscheduled disruption at two generation units at a coal-fired power plant in Manjung, Perak. This was aggravated by the additional losses of 240 MW at the Tuanku Jaafar Power Plant in Port Dickson, and 560 MW in two generation units at the Kapar Power Plant.

The available capacity on that day was 16, 027 MW compared to the forecast maximum demand of 16,542 MW. Due to the small operating reserve, preventive measures were taken by the Grid System Operator as follows:

i. Instructing all steel factories to cease arcing operations during peak hours;
ii. Notifying large consumers on the possibility of supply rationing;
iii. Importing electricity from EGAT, Thailand (300 MW) and Singapore (200 MW); and
iv. Activating a rotational load-shedding plan when the situation calls for it.

At 14:09, 7 May 2014, the system frequency dropped to 49.78 Hz following an increased demand that could not be balanced with the available generation capacity. To avoid a drop in frequency that can subsequently threaten the stability of the grid system and thus lead to cascade tripping, the Grid System Operator took action to shed some load in scheduling terms until it reached 470 MW, involving several areas in the Peninsula. The action taken by the Grid System Operator is a common practice to ensure that the grid system remains secure.

SABAH

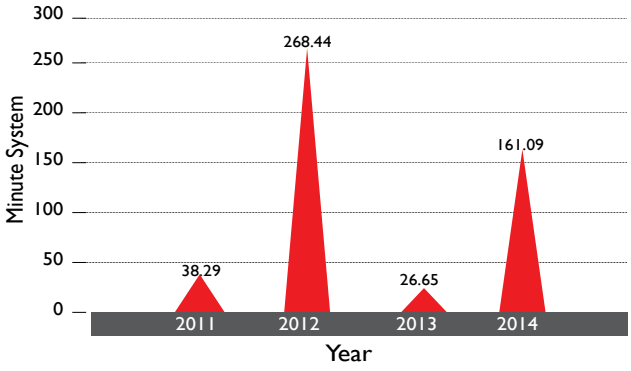
System Reliability

In Sabah, the low level of reliability and the lack of generation capacity were still an issue. In the event of disruptions at the high-capacity generation plants, the ability of existing generation plants to accommodate the electricity demand are affected. Therefore, load management and load-shedding needed to be done. However, the lack of generation capacity was resolved with the operation of new power plants in May, July, August and November 2014 with an additional capacity of 395 MW.

The System Minute for the grid system in Sabah increased significantly to 161.09 minutes compared to 26.65 minutes in 2013. This exceeded the initial target, which was 20 minutes in 2014.

Five tripping incidents were reported in the Sabah grid system, resulting in a load loss exceeding 50 MW. The biggest incident occurred on 23 May 2014 with a load loss of 281.81 MW and unsupplied electricity of 378.603 MWh, which contributed 25.03 to the Sabah System Minute. The incident was caused by the tripping of the 275-kV Kolopis-Segaliud line at both ends due to a lightning strike. This resulted in disruptions of electricity supply in the Sabah East Coast districts.

DePUI – Minute System for Sabah's Grid, 2011 -2014

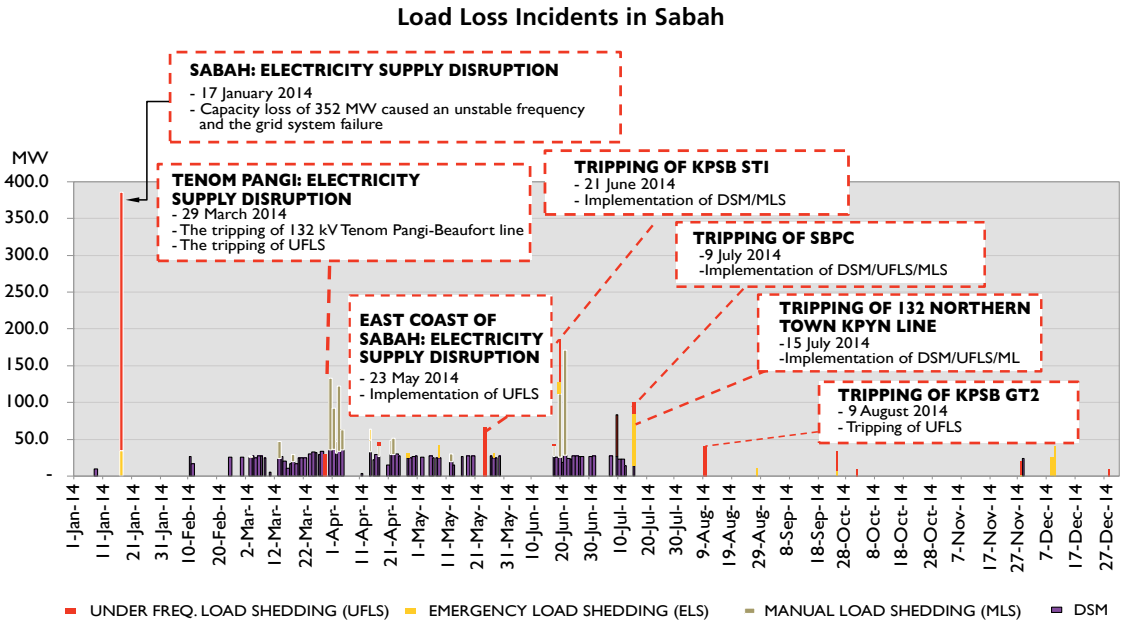


Management Of Load Demand And Load-Shedding

The System Grid Operator, SESB, frequently implemented Demand Side Management (DSM) and load-shedding to prevent the decline in frequency. A significant increase was recorded, in which as of July 2014, a load of 1,334.7 MW of load was shed from the grid system compared to 56.17 MW in 2013.

The implementation of DSM declined to 1,989.8 MW compared to 2,330.3 MW in 2013. Load-shedding and DSM were necessary in the event of the tripping of generation units and electricity transmission lines due to geographical conditions and unpredictable weather.

The highest load-shedding was recorded on 17 January 2014, following the tripping incidents at the main generation units in the west coast of Sabah involving 731.0 MW. This resulted in disruption of electricity supply to the entire Sabah, affecting 542,037 consumers.



Generation Units Disruptions

On 17 January 2014, Sabah experienced a disruption in electricity supply. The disruption occurred due to three incidents: a flashover disruption on the 132 kV UMS2-Unggun transmission line caused by tree branches; tripping at the Rugading Power Station and Teluk Salut; and tripping at the 132 kV UMS2-Unggun transmission line. All areas in Sabah and the Federal Territory of Labuan experienced supply disruptions following insufficient capacity.

Recovery stages began at 12.15 pm at Ranau until the supply fully resumed at 10.20 pm on the same day. Due to this incident, improvement measures were implemented upon the defence system of the Sabah grid based on the proposals by the Special Investigative Committee to ensure that similar incidents would not reoccur.

On 23 May 2014, 159,300 consumers in the east coast of Sabah experienced disruptions in electricity supply caused by the tripping of the first and second 275 kV Kolopis Segaliud transmission lines due to lightning. The outage on the transmission lines resulted in the loss of 120 MW generation capacity, and a UFLS of 64.39 MW was activated in the east coast of Sabah.

However, the increased energy demand of approximately 223 MW after the activation of UFLS resulted in all the power plants in the east coast of Sabah to trip, and the electricity supply across Sabah was disrupted in the evening on the same day. Repairs were carried out in stages until the electricity supply fully recovered on the same day.

DISTRIBUTION SYSTEM PERFORMANCE

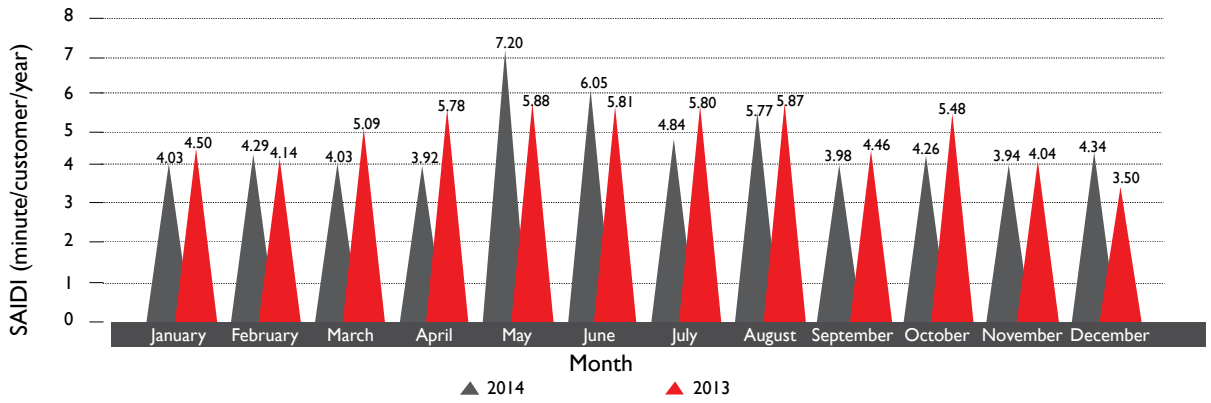
SAIDI PERFORMANCE

Peninsular Malaysia

In general, the monthly SAIDI showed a declining trend compared to the 2013 monthly SAIDI, except the SAIDI for the months of February, May, June and December.

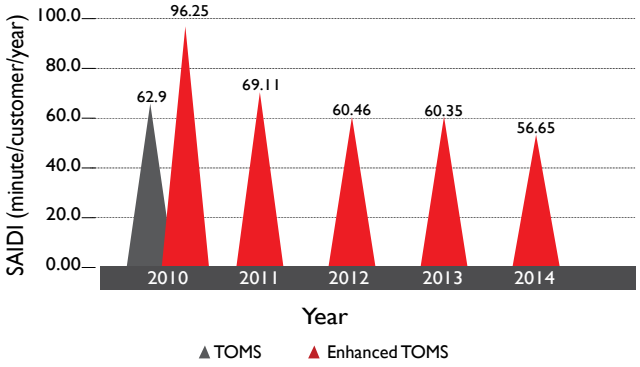
The SAIDI in May was the highest compared to the other months at 7.20 minute/customer/year, due to the load-shedding incident on 7 May 2014 involving several areas in six states: Kedah, Perak, Pulau Pinang, Malacca, Negeri Sembilan and Johor. This incident caused a tremendous increase to the SAIDI in those states for the month of May compared to the previous SAIDI.

Monthly SAIDI in the Peninsula



In 2014, the targeted SAIDI in the Peninsula was set at 60 minute/customer/year. On the whole, the TNB electricity supply SAIDI performance was satisfactory, and showed a declining trend compared to the 2013 SAIDI. The accumulative SAIDI was 56.65 minute/customer/year, which is a reduction of 6.1% compared to 60.35 minute/customer/year and still below the 2014 target.

SAIDI in the Peninsula, 2010-2014



Based on supply disruptions, the medium voltage system remains a major contributor to the overall SAIDI at 50.84 minute/customer/year, compared to the SAIDI of the low-voltage and high-voltage systems. The medium-voltage SAIDI decreased by 9.5% from 56.20 minute/customer/year in 2013 to 50.84 minute/customer/year.

Apart from that, focus and continuous improvement efforts on the existing supply system had to be enhanced, such as increasing preventive maintenance, replacing all problematic cable connections, old cables and small-sized cables, as well as implementing condition-based monitoring to ensure a reliable supply system and prevent the reoccurrence of disruptions.

As in the previous years, in order to reduce the 2014 SAIDI, TNB still focused mainly on the medium-voltage system, which is the largest contributor to the overall SAIDI in the Peninsula at more than 90%. The disruption in the low-voltage system was caused by damage to insulating piercing connectors (IPC), which still recorded the highest percentage compared to other causes.

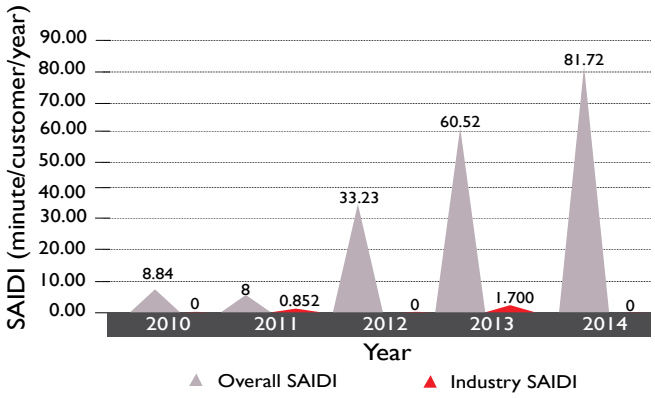
Focus was also given to the underground cable, in which more than 70% of the medium-voltage supply disruption was caused by damage to cable connections, cable termination and disturbance by a third party.

KHTP

The overall SAIDI in KHTP showed a significant increase of 35.0%. This is equivalent to 81.72 minute/customer/year compared to 60.52 minute/customer/year in 2013. However, there were no incidents involving high-voltage industrial consumers compared to 1.70 minute/customer/year recorded in 2013.

The increase in SAIDI was due to incidents that occurred in November 2014, in which an 11 kV circuit network experienced multiple failures. In these incidents, the two 11 kV circuits supplying electricity to 167 consumers were damaged and required a long time to repair. The incident caused an increase of 70 minute/customer/year to the overall SAIDI in 2014.

Overall SAIDI and Industry SAIDI (for high-voltage consumers) at KHTP, 2010-2014



* For high-voltage users only

Sabah

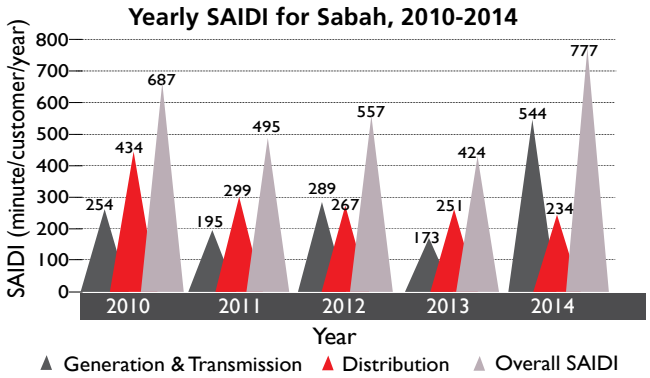
Continuous monitoring of the electricity supply system performance in Sabah was implemented to ensure the target SAIDI was achieved. The SAIDI achievements in Sabah were as follows:

	2014 Target	2014 Achievement (minute/ customer)	2013 Achievement (minute/ customer)
Sector 1	250	628	273
Sector 2	500	925	627
Sector 3	340	997	436
Overall Average	350	777	424

As at 31 December 2014, the overall SAIDI for the state of Sabah was 777 minute/customer/year. This was an increase by 83.25% compared to the overall SAIDI in 2013, which was 424 minute/customer/year, a significant increase caused by a few factors such as:

- Electricity supply disruptions involving almost the entire Sabah on 17 January 2014. This incident contributed to a SAIDI of 254.62 minute/customer/year;
- Disruption in electricity supply system as a result of load-shedding activity due to lack of generation capacity;
- High-impact disruptions in the electricity supply system due to the breakdown or disruption on the transmission line; and
- High-impact disruptions in the electricity supply system due to the breakdown or disruption on the distribution line.

As at 31 December 2014, the generation and transmission SAIDI contributed 544 minute/customer/year, which is 70.01% of the overall yearly SAIDI. The remaining 234 minute/customer/year were contributed by the distribution system. When compared to the same period in 2013, the generation and distribution system SAIDI increased by 214.45%. However, the distribution SAIDI decreased by 17 minute/customer/year or 6.77%.



The short-term action plan taken by SESB to minimise disruptions caused by trees were to:

- Change the exposed conductor with aerial bundled cable for high-voltage, and PVC insulated conductor for low-voltage system;
- Install auto-recloser to minimise the duration of disruption;
- Create a new injection point to minimise the number of consumers involved in disruptions; and
- Intensify cleaning of the transmission line.

Meanwhile, the medium-term initiatives were to:

- Increase the implementation of condition-based maintenance activities;
- Implement identified transmission and distribution projects more effectively and according to schedule; and
- Identify and implement system-strengthening projects that can impact reduction in SAIDI.

ELECTRICITY SUPPLY DISRUPTIONS

PENINSULAR MALAYSIA

TNB

The number of electricity supply disruptions for every 1,000 consumers on the TNB distribution system in 2014 decreased by 13.8% to 8.63 compared to 10.01 in 2013.

The number of scheduled interruptions also increased to 0.17 interruptions for every 1,000 consumers compared to 0.09 interruptions for every 1,000 consumers in 2013, which was an increase of 88.9%. However, unscheduled interruptions decreased by 14.6% to 8.47 for every 1,000 consumers compared to 9.92 for every 1,000 consumers in 2013.

Out of the total disruptions in 2014, unscheduled disruptions still recorded the highest percentage, which was 98.1% compared to scheduled interruptions at 1.9%.

KHTP

In general, the number of electricity supply disruptions for every 1,000 consumers in KHTP reduced by 23.2% to 27.49 disruptions from 35.78 disruptions in 2013.

Unscheduled disruptions in 2014 increased by 5.7% to 12.01 disruptions for every 1,000 consumers compared to 11.36 disruptions for every 1,000 consumers in 2013. However, scheduled interruptions decreased by 36.6% to 15.48 disruptions for every 1,000 from 24.2 disruptions for every 1,000 consumers in 2013.

Out of the total disruptions in 2014, scheduled interruptions recorded a higher percentage at 56.3% compared to unscheduled disruptions at 43.7%.

SABAH

The number of electricity supply disruptions for every 1,000 consumers involving the SESB supply system decreased from 49.59 disruptions in 2013 to 41.95 disruptions in 2014. The number of scheduled disruptions decreased by 43.28% to 2.11 for every 1,000 consumers compared to 3.72 for every 1,000 consumers in 2013.

The number of unscheduled disruptions also decreased by 13.15% to 39.84 disruptions for every 1,000 consumers in 2014, compared to 45.87 disruptions for every 1,000 consumers in 2013. However, the number of unscheduled disruptions still recorded a high percentage, which is 94.97% of the overall disruptions in 2014.

POWER QUALITY PERFORMANCE

In general, power quality issues, such as voltage dip incidents, caused supply disruptions for short durations and deterioration of sensitive operational process in industrial premises.

Among the main causes that contributed to the voltage dip incidents were lightning, breakdown in the transmission system, switching activities and cable failures owing to disruptions by third parties doing construction activities.

PENINSULAR MALAYSIA

System Average RMS Frequency (SARFI) is an index for power quality, to measure the performance of voltage dips recorded by every detector installed on the TNB electricity supply system. Voltage dip incidents in the Peninsula are monitored based on the 11 kV, 22 kV and 33 kV voltage levels. SARFI indicates that the average number of voltage dip incidents was below 70%. A higher SARFI value indicates a higher number of voltage dip incidents occurring on the electricity supply system.

The comparison of SARFIx according to voltage level for the 11 kV, 22 kV and 33 kV systems and the overall system, showed that the 33 kV system recorded the highest $SARFI_{90}$ value compared to the 11 kV system and 22 kV system, which were 7.91. For the overall system, $SARFI_{90}$ recorded the highest average incidents at 6.15.

SARFIx according to 11 kV, 22 kV and 33 Kv Voltage Levels and the Overall System for States in the Peninsula

State	SAFRIx 11 kV System						SAFRIx 12 kV System						SAFRIx 33 kV System						SAFRIx Overall System					
	90	80	70	50	40	10	90	80	70	50	40	10	90	80	70	50	40	10	90	80	70	50	40	10
Johor	4.18	2.82	1.45	0.91	0.64	0.45	6.71	4.14	2.79	1.36	0.86	-	9.00	5.00	2.00	-	-	-	5.12	3.23	2.04	1.12	0.73	0.19
Kedah	9.60	4.00	2.20	0.40	0.40	0.20	-	-	-	-	-	-	7.71	3.71	2.43	1.00	1.00	0.29	6.92	3.31	2.08	0.69	0.69	0.23
Kelantan	26.00	6.00	1.00	-	-	-	-	-	-	-	-	-	31.00	11.00	5.33	0.33	0.33	-	24.75	8.50	4.25	0.25	0.25	-
Malacca	5.88	2.75	1.88	0.38	0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	5.88	2.75	1.88	0.38	0.13	-
Negeri Sembilan	7.89	4.56	2.78	0.78	0.44	0.22	-	-	-	-	-	-	19.00	8.00	2.00	2.00	2.00	2.00	7.40	4.40	2.50	0.70	0.40	0.20
Pahang	13.50	8.25	4.13	1.50	0.75	0.25	-	-	-	-	-	-	51.00	21.00	8.00	3.00	-	-	15.11	8.89	4.33	1.67	0.67	0.22
Pulau Pinang	5.75	2.75	1.75	1.25	0.75	0.50	-	-	-	-	-	-	5.43	1.43	0.57	0.29	0.14	-	4.64	1.55	0.82	0.55	0.36	0.18
Perak	8.27	4.09	2.45	0.91	0.55	-	-	-	-		-	-	12.00	3.29	1.57	0.29	0.14	0.14	7.89	3.28	1.83	0.67	0.39	0.06
Perlis	19.00	11.00	6.00	2.00	2.00	-	-	-	-	-	-	-	16.00	10.00	5.00	3.00	2.00	-	11.50	7.00	4.50	2.50	2.00	-
Selangor	4.50	2.00	1.00	0.50	0.50	-	-	-	-	-	-	-	6.33	2.42	1.33	0.38	0.21	0.04	5.88	2.27	1.27	0.38	0.23	0.04
Terengganu	8.71	5.14	3.71	1.29	1.14	0.14	-	-	-	-	-	-	17.00	14.00	9.00	4.00	3.00	3.00	8.88	5.50	4.13	1.50	1.38	0.50
Kuala Lumpur	6.67	3.67	2.00	1.00	1.00	0.67	-	-	-	-	-	-	6.42	2.58	0.75	0.17	0.08	-	5.60	2.33	0.87	0.33	0.27	0.13
Putrajaya/ Cyberjaya	6.33	3.67	1.67	0.33	0.33	-	-	-	-	-	-	-	14.00	8.00	3.50	1.00	1.00	-	6.20	4.00	1.80	0.60	0.60	-
TNB	6.49	3.82	2.34	0.88	0.60	0.21	6.71	4.14	2.79	1.36	0.86	-	7.91	3.27	1.67	0.55	0.37	0.13	6.15	3.16	1.90	0.75	0.51	0.14

Note : $_x$ = maximum level for the number of cases calculated

As in the previous years, voltage dip incidents in the Peninsula were monitored by the Energy Commission, through TNB reporting based on 155 units of power quality detectors installed at main substations (PMU) in the Peninsula. The overall number of voltage dips reported by TNB in 2014 decreased to 954 incidents compared to 965 incidents in 2013.

Number of Voltage Dip Incidents in the Peninsula

State	Number of Voltage Dip Incidents	Total Number of Customers Affected
Kuala Lumpur	84	10
Putrajaya/Cyberjaya	31	19
Selangor	153	33
Johor	133	20
Malacca	47	3
Negeri Sembilan	74	17
Kelantan	99	3
Pahang	136	4
Terengganu	71	2
Kedah	90	5
Perak	142	7
Perlis	23	-
Pulau Pinang	51	29
Total	954	152

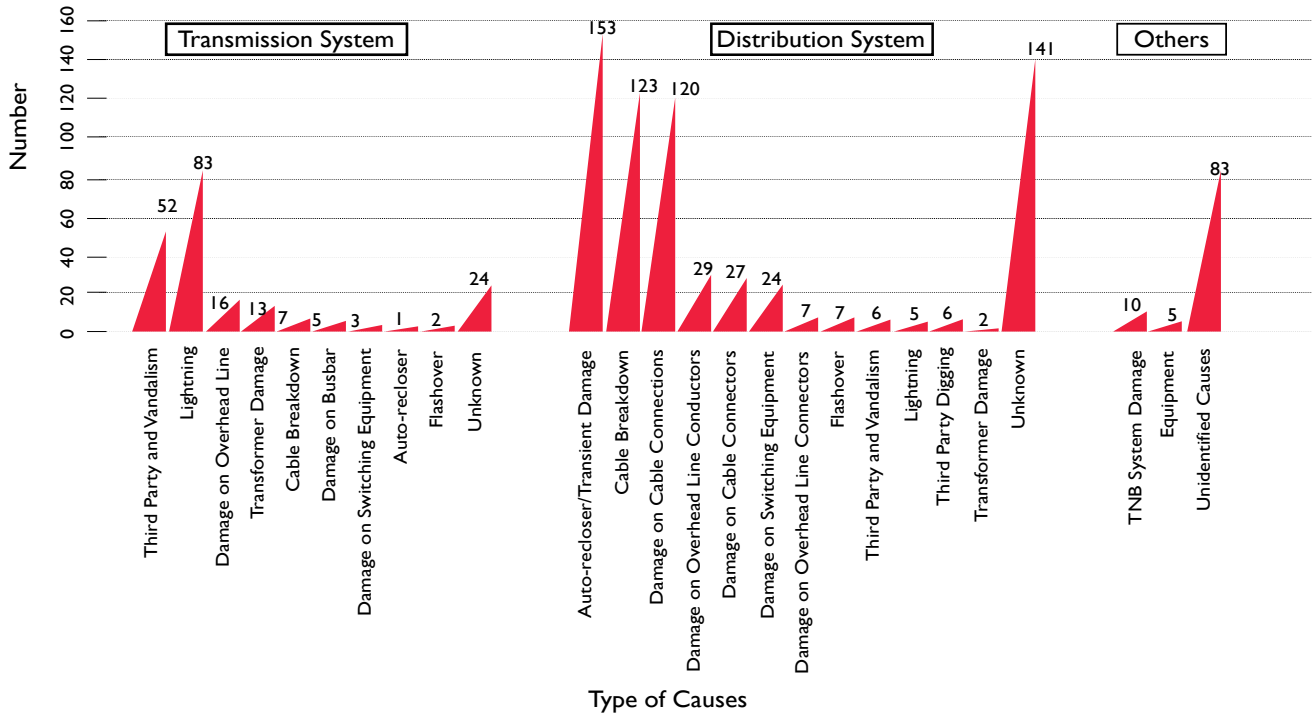
The main cause of voltage dips was the auto-recloser and the damaged transient on the distribution system. It recorded the highest number – 153 incidents – compared to other recorded causes. On the other hand, 141 voltage dip incidents in which the causes were unknown occurred in the distribution system.

Out of the overall voltage dip incidents, TNB received 338 complaints, out of which 152 are industrial consumers in the Peninsula. This showed that complaints pertaining to voltage dip incidents increased by 48.9% compared to 227 complaints involving 95 consumers in 2013.

In an effort to solve the voltage dip issues, TNB provided consultations to industrial consumers and explored the best solutions for those affected by voltage dip incidents.

In 2014, 30 large power customers in the Peninsula received TNB services to manage their power quality issues in Pulau Pinang (6), Perak (3), Kedah (3), Kelantan (1), Negeri Sembilan (2), Melaka (1), Johor (4), Selangor (5), Putrajaya/Cyberjaya (1) and Kuala Lumpur (4). 18 of the 30 voltage dip issues were resolved by TNB.

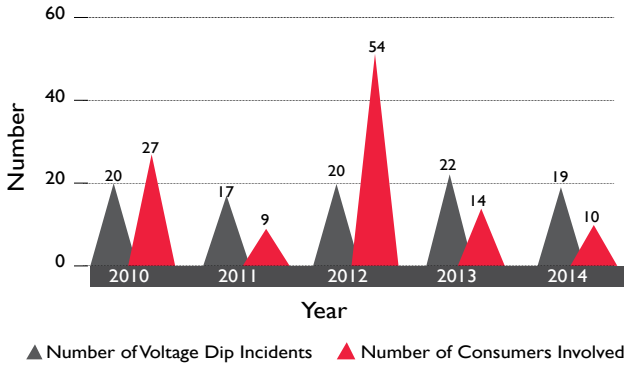
Causes of Voltage Dips in the Peninsula



KHTP

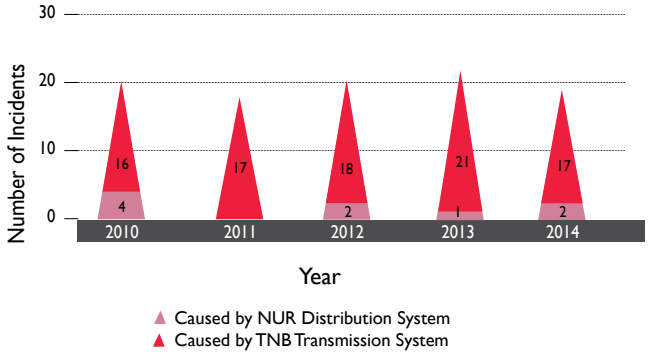
In general, the number of voltage dip incidents reported in KHTP reduced to 19 incidents in 2014 compared to 22 incidents in 2013. The number of customers affected by voltage dip incidents also decreased by 28.6%, from 14 customers to 10. The highest number of customers involved was reported in May 2014, when operations of six main industrial customers with high technology were affected. The incident was due to the tripping of the TNB-owned 275 kV line from Bedong to Kota Setar, caused by damage on the overhead tower grid.

Number of Voltage Dip Incidents in KHTP, 2010-2014



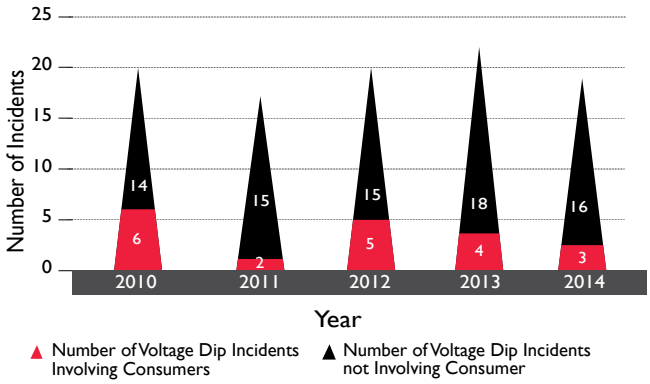
17 of the reported incidents stemmed from the TNB supply system or grid system, while two incidents involved the internal system of NUR Distribution Sdn Bhd. Based on analysis, the number of incidents caused by the TNB grid system decreased in 2014 compared to 2013. The breakdown of the number of incidents caused by the TNB grid system and NUR Distribution Sdn Bhd distribution system are as follows:

Number of Reported Voltage Dip Incidents that Disrupted Supply to Consumers, 2010-2014



The main causes of voltage dip incidents from the TNB grid system were the tripping of the transmission line, cable breakdown, auto-reclosing, transient failures, lightning and others. Meanwhile, the causes of incidents from NUR Distribution Sdn Bhd include line tripping, cable breakdown, damage on gear switch or transformer and others. In other words, any incident on the TNB grid system in the northern area or the NUR Distribution system at KHTP would also affect the electricity supply to consumers in KHTP, especially consumers with sensitive processes or equipment.

Number of Voltage Dip Incidents, 2010 -2014



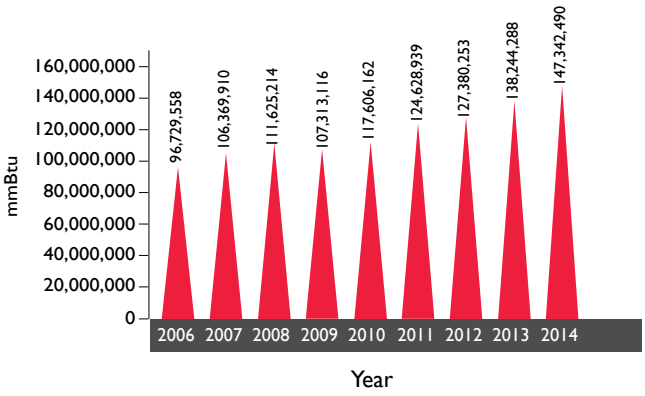
The number of voltage dip incidents not involving consumers decreased to 16 incidents compared to 18 incidents in the previous year. The number of voltage dip incidents involving consumers also decreased from 4 incidents in 2013 to 3 incidents.

PIPED GAS SUPPLY OF NATURAL GAS AND LPG

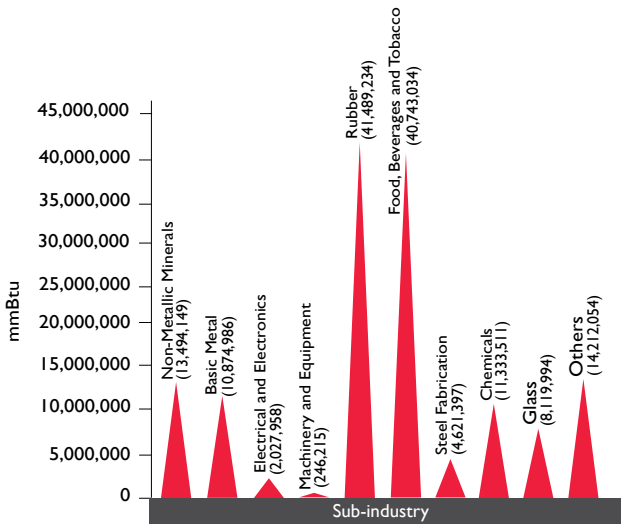
PENINSULAR MALAYSIA

Natural gas supplied by GMB increased by 6.58% to 147,342,490 mmBtu compared to 138,244,288 mmBtu in 2013. The main consumer of natural gas is the industrial sector with a consumption of 146,311,939 mmBtu, which is equivalent to 99.30% of the overall consumption. Meanwhile, the commercial and residential sectors consume 992,935 mmBtu (0.67%) and 37,616 mmBtu (0.03%) respectively.

Natural Gas Consumption in the Peninsula



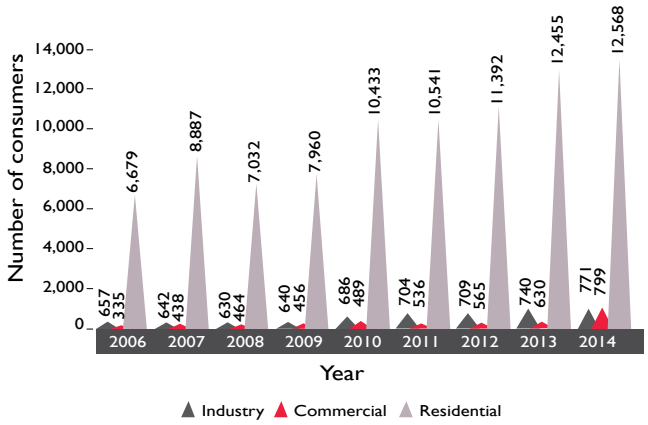
Natural Gas Consumption Based On Sub-Industry Categories in the Peninsula



The rubber-based sub-industry is the largest consumer with a consumption of 41,489,234 mmBtu, which is 28.19% of the total natural gas consumption by sub-industries in the Peninsula.

The number of natural gas consumers in the Peninsula increased in all three sectors compared to 2013. In 2014, the number of consumers increased from 740 to 771. The commercial sector grew from 630 to 790, while residential consumers increased from 12,455 to 12,568 in 2014.

Natural Gas Consumers in the Peninsula

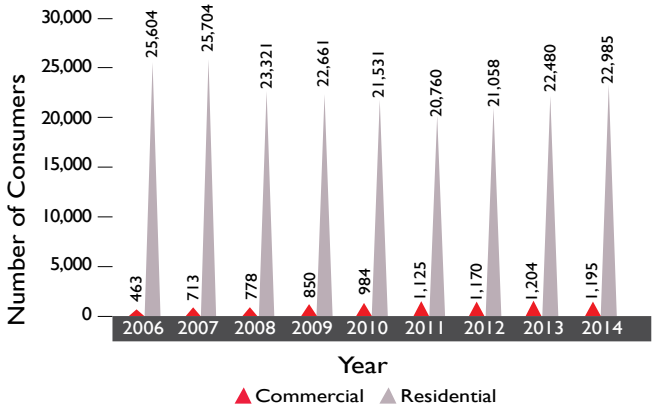


The distance of the gas pipeline increased by 55.4% to 1,993.24 km compared to 1,888.54 km in 2013. The increase in the volume of natural gas supply did not result in any difference to the pipeline length. This is because the additional volume of natural gas supply is only distributed to the premises of existing and new consumers whose locations are close to existing pipelines.

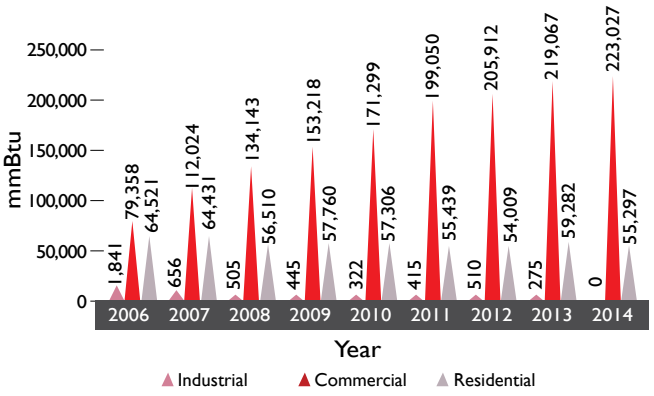
The quantity of LPG supplied by GMB is 278,324 mmBtu, which is a decline of 0.11% compared to 278,624 mmBtu in 2013. The commercial sector was the main consumer with 223,027 mmBtu, which is 80.13% of the total LPG consumption. Meanwhile, the residential sector consumed 55,297 mmBtu (19.87%) while the industrial sector did not consume LPG gas at all in 2014.

The number of residential LPG consumers in the Peninsula increased by 2.25% from 22,480 consumers in 2013 to 22,985 consumers in 2014. The commercial sector experienced a decline of 0.75% from 1,204 consumers in 2013 to 1,195 consumers in 2014. There have been no LPG consumers in the industrial sector since 2008.

LPG Consumers in the Peninsula According to Sector



LPG Consumption in the Peninsula According to Sector



SABAH AND LABUAN

Natural gas in Sabah and Labuan is consumed only in the industrial sector by Kota Kinabalu Industrial Park (KKIP) and Labuan. Consumption of natural gas in Sabah and Labuan showed a surge of 149.755% to 233,723 mmBtu in 2014 compared to 93,582 mmBtu in 2013, due to huge consumption by Steels Industries Sabah Sdn. Bhd. at KKIP. The number of natural gas consumers in Sabah and Labuan in 2014 increased by 11.11% to 20 consumers compared to 2013.

Natural Gas Consumption in Sabah and Labuan

Year	Consumption (mmBtu)	Number of Consumers
2006	171,598	8
2007	178,551	11
2008	185,388	13
2009	52,335	11
2010	62,236	11
2011	66,795	12
2012	74,684	12
2013	93,582	18
2014	233,723	20

ENSURING PIPED GAS SUPPLY DISTRIBUTION

Piped gas supply performance grew compared to 2013, with the SAIDI for 2014 at 0.1492 minute/customer/year. Among the measures implemented by licensees to ensure supply were increasing inspections and maintenance activities as well as taking immediate action once there were issues raised through feedback from customers.

GMB Performance Indicator, 2010-2014

Performance Indicator	2010	2011	2012	2013	2014
SAIDI	0.6299	0.3630	0.7489	0.1480	0.1492
SAIFI	0.0037	0.0039	0.0029	0.0022	0.0021
CAIDI	169.27	90.96	260.90	66.83	70.71
Leakage along the Gas Pipeline For Every 1,000 km	7.47	5.43	3.74	2.06	2.47
Leakage in Stations and Consumers' Premises for Every 1,000 Consumers	6.94	6.66	4.95	4.02	5.44

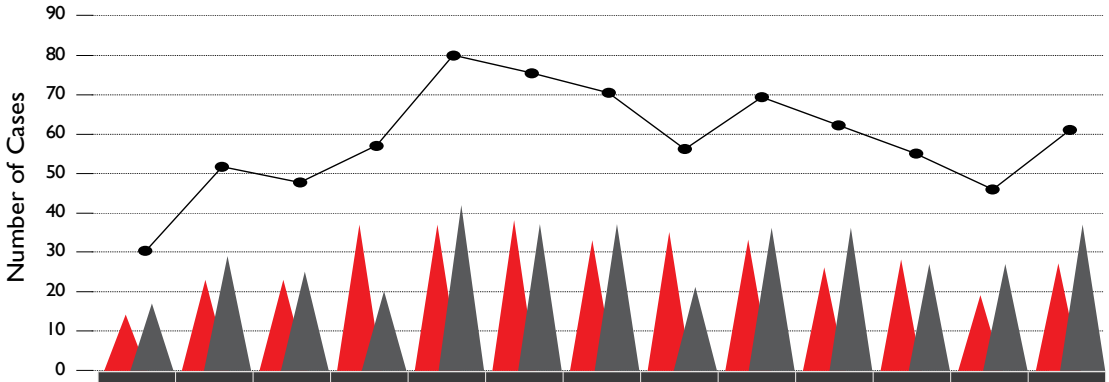
Note:
SAIDI = System Average Interruption Duration Index (minute/customer/year)
SAIFI = System Average Interruption Frequency Index (disruption/customer/year)
CAIDI = Customer Average Interruption Duration Index (minute/customer/year)

ELECTRICAL AND GAS SAFETY

ELECTRICAL ACCIDENTS

A total of 63 cases of electrical accidents were reported in 2014, an increase of 17 cases from 2013. The number of fatalities increased from 8 to 27 while non-fatal accidents also increased by 9 to 36 cases.

Electrical Accidents, 2002-2014

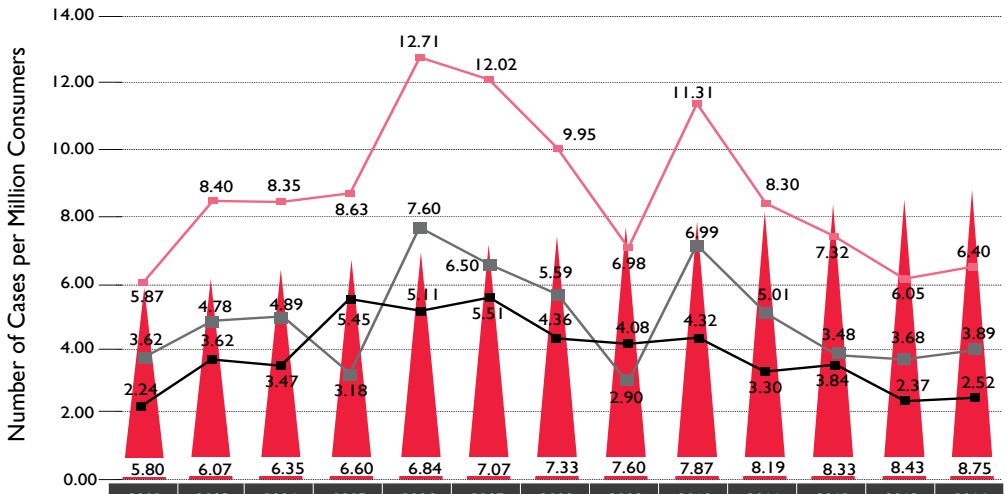


	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
FATAL	14	23	23	37	37	38	33	35	33	26	28	19	27
NON-FATAL	17	29	25	20	42	37	37	21	36	36	27	27	36
TOTAL	31	52	48	57	79	75	70	56	69	62	55	46	63

The number of victims per million consumers is 6.40 compared to 6.05 in the previous year. The number of fatalities per million consumers is 2.52, an increase from 2.37 in 2013. The number of non-fatalities per million consumers is 3.89, an increase from 3.68 in 2013. The number of TNB and SESB utility consumers also increased from 8.43 to 8.75 million consumers in 2014.

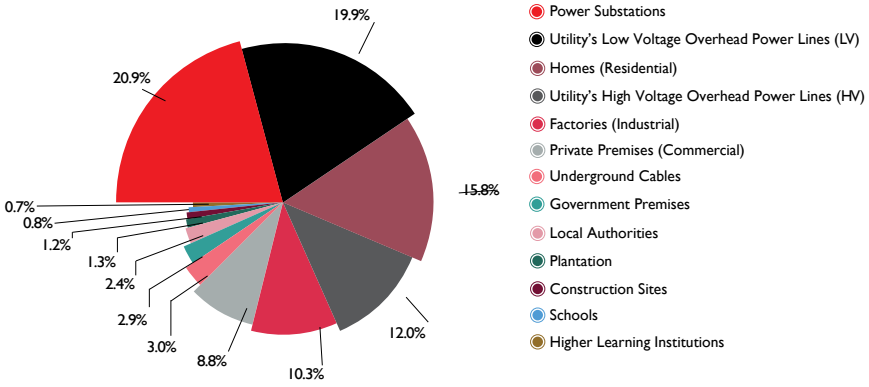
From 2002 to 2014, the number of electrical accidents happened at the utility's substations (20.9%), followed by electrical accidents involving the utility's low-voltage transmission lines (19.9%) and in residential buildings (15.8%).

Number of Fatalities per Million Consumers, 2002-2014



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Electricity Users (Million)	5.80	6.07	6.35	6.60	6.84	7.07	7.33	7.60	7.87	8.19	8.33	8.43	8.75
Non-fatalities / Million Consumers	3.62	4.78	4.89	3.18	7.60	6.50	5.59	2.90	6.99	5.01	3.84	3.68	3.89
Fatalities / Million Consumers	2.24	3.62	3.47	5.45	5.11	5.51	4.36	4.08	4.32	3.30	3.48	2.37	2.52
Victims / Million Consumers	5.87	8.40	8.35	8.63	12.71	12.02	9.95	6.98	11.31	8.30	7.32	6.05	6.40

Electrical Accident Locations, 2002 -2014



In 2014, most electrical accidents occurred at the utility's substations (14 cases), followed by electrical accidents involving the utility's low-voltage overhead transmission lines (11 cases) and residential buildings (11 cases). Meanwhile, there were no reports of electrical accidents in schools, higher learning institutions and farms for the last 5, 3 and 2 years respectively.

Two main causes of electrical accidents in 2014 were failure to comply with safe working procedures for installations and maintenance that did not comply with requirements. The cases involving these and public activities near the utility's substations increased since 2013.

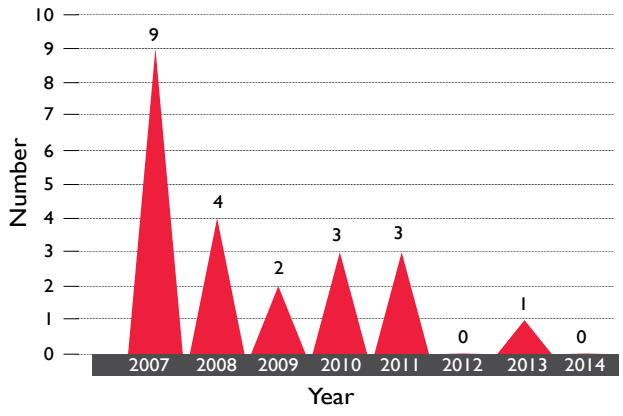
Causes of Electrical Accidents, 2002 -2014

Year	Installation/ maintenance that do not comply with requirements	Non-compliance with safe working procedures	Trespassing an electrical substation installation	Public activity near an electrical installation	Misuse of wiring system	Flawed electrical equipment	Others
2002	11	12	1	4	2	0	1
2003	18	18	3	9	1	0	3
2004	15	15	3	9	1	1	4
2005	24	22	3	2	1	1	4
2006	26	22	10	7	3	3	8
2007	34	23	7	5	1	1	4
2008	25	21	11	6	1	1	5
2009	27	13	6	6	2	0	2
2010	18	21	12	9	4	3	2
2011	24	15	6	5	2	4	6
2012	22	15	5	5	2	4	2
2013	12	16	9	7	2	0	0
2014	20	21	7	11	1	3	0

PIPED GAS ACCIDENTS

There were no reported piped gas incidents compared to one case in 2013. In 2014, the Energy Commission issued warnings related to repair work and audit on gas installation that private licensees are responsible for. In addition, the fact that it is compulsory for each premise with a piped gas system to have one Responsible Person on-site contributed to the lack of gas-related incidents.

Number of Piped Gas Accidents, 2007-2014



ENERGY EFFICIENCY DEVELOPMENT

MONITORING ELECTRICITY USAGE

Energy intensity is an indicator used to highlight a nation's performance in the energy sector. It is also a method to indicate annual performance in comparison to other countries. Electricity intensity refers to the amount of electricity required to produce a unit of Gross Domestic Product (GDP).

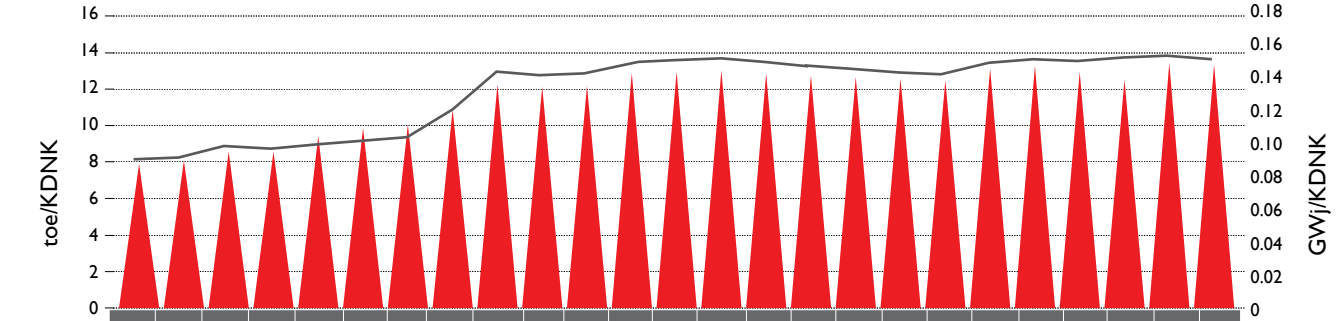
Electrical power intensity is often associated with the energy efficiency performance of countries. Other factors such as weather, geography and the social and economic aspects of the population also play influential roles in the performance.

Energy efficiency performance between 1990 and 1999 showed an improvement as we move towards achieving developed country status, in which economic activities are focused on the industrial sector. From 2000 to 2014, electricity intensity was stable as our country's economic

structure switched to sectors that consume less electricity than the manufacturing industry.

The energy efficiency performance for 2014 declined with the increase of electricity-consuming activities in the country. Electricity intensity in Malaysia decreased by 1.3% compared to the previous year, which was 0.154 GWh/GDP.

Electricity Intensity, 1990-2014



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Electricity Intensity (toe/GDP at 2005 Constant Price (RM million))	7.9	8.1	8.57	8.61	9.44	9.89	10.06	10.88	12.26	12.15	12.2	12.91	12.96	13.06	12.87	12.77	12.67	12.59	12.49	13.15	13.29	12.97	12.31	13.45	13.26
Electricity Intensity (GWh/GDP at 2005 Constant Price (RM million))	0.092	0.094	0.1	0.1	0.11	0.115	0.117	0.126	0.143	0.141	0.142	0.15	0.151	0.152	0.15	0.148	0.147	0.146	0.145	0.153	0.154	0.151	0.155	0.156	0.154

▲ Electricity Intensity (toe/GDP at 2005 Constant Price (RM million)) —— Electricity Intensity (GWh/GDP at 2005 Constant Price (RM million))

PREPARATION OF THE NATIONAL ENERGY EFFICIENCY ACTION PLAN (NEEAP)

The National Energy Efficiency Action Plan (NEEAP) is a comprehensive and holistic action plan to implement energy efficiency programmes in the country. The implementation of the NEEAP programmes would encourage good energy practices as well as increase energy saving rates and conservation efforts. It would also contribute to the Government's aim to reduce the intensity of carbon dioxide. The NEEAP also creates opportunities to enhance the security of the country's energy supply through energy efficiency, in an effort to strengthen the country's socio-economy development.

The NEEAP programmes cover the public, industrial, commercial and domestic sectors as follows:

- Campaign on 5-Star refrigerators
- Campaign on energy efficient light bulbs
- Campaign on 5-Star air-conditioners
- Audit and energy management in large commercial buildings
- Audit and energy management in medium-sized commercial buildings
- Audit and energy management in the large and medium industrial sector
- Development of energy performance standards for high-efficiency motors
- Audit and energy management in government buildings
- Enforcement of MS 1525:2014 for energy efficiency in new buildings
- Encouraging the use of co-generation in the industrial and commercial sectors

In November 2014, the Energy Commission was mandated by KeTTHA to review the latest data and energy savings target under the NEEAP before it was presented for government approval. The Energy Commission started discussions with stakeholders, reviewed the data under the NEEAP and established energy-saving targets.

EFFICIENT MANAGEMENT OF ELECTRICITY ENERGY

Under the *Efficient Management of Electricity Energy Regulations 2008* (EMEER 2008), 191 Energy Managers (EM) registered with the Energy Commission compared to 89 EM in 2013. In total, 497 EM registered with the Energy Commission.

To increase the knowledge and skills of registered EM, 33 training development companies were certified to run courses related to energy management.

1,945 installations were subjected to the EMEER 2008 as they consumed electricity energy exceeding 3 million kWh for six consecutive months. Around 830 installations appointed EM.

A comparison between the total installations under EMEER 2008 and the appointment of registered EM in 2013 and 2014 is as follows:

	2013	2014
Number of installations which use electricity exceeding 3 million kWh	1,867	1,945
Number of installations that appointed EM	261	110
Accumulated number of installations that appointed EM	717	830

Under the Energy Service Company (ESCO) registration programme, 41 ESCOs registered with the Energy Commission to implement energy management activities in government buildings.

To further encourage the efficient use of electricity in the country, the Minimum Energy Performance Standard (MEPS) was gazetted as part of the regulations in May 2013. For light bulbs alone, 17 types of lamps received certifications from the Energy Commission under MEPS.

Electrical Appliances Rated Under MEPS

	2 Star	3 Star	4 Star	5 Star	Total
Refrigerators	21	30	23	85	159
Televisions	2	4	4	281	291
Air-Conditioners	51	64	47	211	373
Fans	28	13	49	135	225


2009–2010
$1,710
Government funding
2010–2011
$1,160
$368
$153
64%
20%
9%
7%
2009–2010
$1,143
$309
67%
18%
Quarter 1
Quarter 2
Quarter 3
Quarter 4

ENHANCING COMPETITIVENESS AND ECONOMIC EFFICIENCY

DEVELOPMENT OF POWER PLANTS

To ensure the future security of the electricity supply in Sabah and the Peninsula, a review on the additional generation capacity increment plan and monitoring of the implementation of main generation and transmission projects were given priority.

In the Peninsula, the grid system had operated with a comfortable reserve margin capacity of more than 40% for over 10 years. To optimise the reserve margin and reduce the cost of electricity supply that keeps increasing, the development of power plants in gradual stages was implemented to meet the increasing demand, in addition to the termination of retiring power plants. It is important to maintain the reserve margin at an optimum level, between 20% to 25%, to meet the probability of load loss of 1 day/year criteria planning, if the reliability of power plants is as per plan. This is because the estimated cost to maintain a reserve margin of between 20% to 25% for the energy supply system is between RM1.33 billion to RM1.66 billion yearly or RM0.4 million/MW.

In line with the progress within the industry, the need to speed up plant development was highlighted. This was because of the challenges in the system due to ongoing performance recovery processes at coal-fired plants, delay in several main generation projects, and the late decision on the Pengerang Project by PETRONAS. Apart from that, delay in the transmission lines due to wayleave issues, end-of-service period or termination of operation at power plants within the period of 2015-2018 also contributed to the challenges faced.

In relation to that, the Energy Commission awarded several power plant projects for the operation period between 2018 to 2021. Based on the result of the competitive bidding process conducted on 3 June 2014, the Energy Commission, with the approval of the government, awarded a 2x1000 MW coal-fired power plant development under 3B Projek to the 1Malaysia Development Berhad (1MDB)-Mitsui Consortium. This power plant would begin to operate in stages on 1 October 2018 and 1 April 2019. The scope of this project includes the construction of a new 500 kV transmission line connected to PMU Olak Lempit for the electricity transmission of 2,000 MW, as the current line could only accommodate an additional generation of 1,000 MW.

The government also decided that SIPP Energy and TNB should jointly be offered the development project of a 1,000-1,400 MW Combined Cycle Gas Turbine (CCGT) at Pasir Gudang, Johor, expected to start operating in April 2018.

Additionally, the government approved the conditional award of a 2,000-2,400 MW gas-based combined cycle power plant development in Alor Gajah, Malacca to 1MDB with the joint participation of TNB. This power plant is scheduled to commence its commercial operation on 1 January 2021.

In executing these decisions, the Energy Commission issued a Conditional Letter of Award, which outlined several conditions requiring compliance, in order to obtain the best offer and most competitive selling price, including levelised tariff that is benchmarked against the projects obtained through the bidding process.

Meanwhile, in Sabah, a reliable power plant in the east coast is needed due to disparity in the electricity demand and supply between the east and west coast of Sabah. The maximum transmission rate of the existing grid network could only accommodate a capacity of 200 MW. A higher capacity would cause instability in the grid system. Therefore, the Economic Council had, in principle, granted an approval for the construction of a 300 MW combined cycle power plant in Sandakan on 20 January 2014.

The approval for the construction of a 500 km Trans Sabah Gas Pipeline (TSGP) along the coast of northern Sabah from Kimanis to Sandakan came with an estimated cost of RM2.5 billion, which would be financed by PETRONAS and the federal government.

A special purpose vehicle (SPV) company known as PipeCo would be established to determine the basic engineering design, with an estimated early allocation of RM80 million.

The Energy Commission also continuously monitored the progress of new power plant development in the Peninsula and Sabah to ensure that the projects could begin operations according to the planned schedule. A total of 22 new power plant projects were under construction

and had been approved for commencement – 12 in the Peninsula and 10 in Sabah. A few projects in the Peninsula were experiencing delays in their planning, namely the Hulu Terengganu hydro project, the Ulu Jelai hydro project as well as the redevelopment of the combined gas power plant at Connaught Bridge Power Plant and the coal-fired Tanjung Bin Energy Power Plant. The developers were, however, informed that a review on the project schedule was done and they were positive that the projects would commence operation.

All projects in Sabah were delayed due to factors such as delay in the construction of the transmission line, delay in the gas supply distribution, conflicting pricing of LNG and slow project implementation. The Kimanis and SPR project, on the other hand, experienced delays due to the late construction of transmission line and gas supply.

The Energy Commission was aware of the challenges in finding suitable sites for the development of new generation plants and thus conducted a study on the suitability of several identified sites. The scope of the study covered an early evaluation of the identified sites in terms of area measurement, suitability of connecting transmission lines and piped gas.

RING-FENCING OPERATIONS FOR THE SYSTEM OPERATOR AND SINGLE BUYER

To ensure a level playing field in the electricity supply industry, the Minister of Energy, Green Technology and Water approved the implementation of ring-fencing for System Operators and Single Buyers on 28 November 2013, enforced on 1 January 2014 and 1 February 2014 respectively.

On the whole, the implementation of ring-fencing for System Operators and Single Buyers was smooth. To reinforce it, the existence of these two entities was included in the amendments in the *Electricity Supply Act*, which would be tabled in the Parliament in 2015.

Ring-fencing uses a principles-based approach which aims to ensure that System Operators and Single Buyers are not involved in any conflicting situations. This is exercised via ring-fenced accounting practices, separation of operations with other TNB entities, code of work ethics and non-discrimination towards any decisions made, identification of boundaries and the need for information-sharing as well as budget allocation as per approval. Among other steps taken were the establishment of Single Buyer Working Groups, the Oversight Panel and the Rule Change Panel.

Through the Single Buyer Rules, Single Buyers help reduce the procurement cost, encourage transparency in procurement, increase competition in the generation sector, and ensure the security of electricity supply in the medium and long term. Ring-fenced System Operators, on the other hand, increase transparency, objectivity and fairness in the grid system operation. This would prevent perceptions of discrimination in the scheduling process and operational command by System Operators, which was formerly one of the departments in TNB.

In order to disseminate the latest information on the management and operation of the national grid system, a Single Buyer website (www.singlebuyer.com.my) and a System Operator website: (http://gso.org.my/Home) were created.

An Oversight Panel was established to monitor Single Buyers and their compliance towards the Single Buyer Rules. The panel also monitored the performance of System Operators and performed compliance audits. Technical aspects in relation to the Grid Code were monitored by the existing Grid Code Committee. The Oversight Panel met twice throughout the year 2014.

The Rule Change Panel was established to study the need to modify the Single Buyer Rules and Grid System Operator Guidelines in the event of any amendment proposals. Any proposal or improvement would be studied by the Rule Change Panel before it is submitted to the Energy Commission for consideration. Proposals for amendment that are policy-related would be forwarded to the Minister of Energy, Green Technology and Water for approval. The performance benchmarks for these two entities were monitored in line with the implementation of the Incentive-Based Regulation (IBR).

IMPLEMENTATION OF THE FUEL COST PASS-THROUGH MECHANISM

Implementation of the IBR framework to determine electricity tariff in the Peninsula started on 1 January 2014. The main characteristics in terms of regulations to enhance effectiveness in the utility operation are:

- separation and creation of a regulatory account;
- stipulation of a reasonable return, performance benchmark that has to be achieved and allowed capital spending;
- establishment of an uncontrollable cost pass-through mechanism

IBR aims to ensure that the electricity tariff is determined in an organised and transparent manner towards an improved utility efficiency. IBR is also practised in many developed and developing countries such as Australia, the United Kingdom, Singapore, Thailand and the Philippines. This mechanism enables the existence of a tariff rate that reflects a more transparent electricity supply cost.

One of the main components of IBR is the Imbalance Cost Pass-Through (ICPT) mechanism which allows the utility company to pass on any changes in terms of generation cost and costs beyond the utility's control, such as changes in fuel pricing to the consumers. The cost of piped gas, LNG, coal and other generation costs such as PPA-related costs, displaced costs from renewable energy and the cost for purchasing electricity from other countries are also taken into account under the ICPT mechanism.

At the moment, gas and coal are the main fuels for electricity generation in the Peninsula, at 54.5% and 39.8% respectively. Therefore, any increment to the pricing of gas and coal will lead to the revision of electricity tariff using the ICPT mechanism. Through this system, consumers pay for electricity based on the actual rate of the electricity supply, in accordance with the government's plan to rationalise subsidy.

Based on calculations of the ICPT underlined under the Regulatory Implementation Guidelines (RIG), the total forecasted ICPT cost for the period of January until June 2014 stood at RM465.93 million, while the cost for the period between July and December 2014 stood at RM382.03 million. In total, the ICPT cost is RM847.96 million, which is equivalent to the electricity tariff rate increment at 1.62 sen/kWh.

However, on 5 November 2014, the government decided to keep the electricity tariff rate at 38.53 sen/kWh until June 2015. To ensure this, the government absorbed the costs of fuel and generation at RM1.683 billion using the savings from the PPA renegotiation with first-generation IPPs. The government also kept the pricing of piped gas supplied by PETRONAS to the electricity sector at RM15.20/mmBtu. As a result of the government's decision to postpone the increment of piped gas pricing, PETRONAS had to bear the foregone revenue for the period of July 2014 to June 2015 totalling RM836 million.

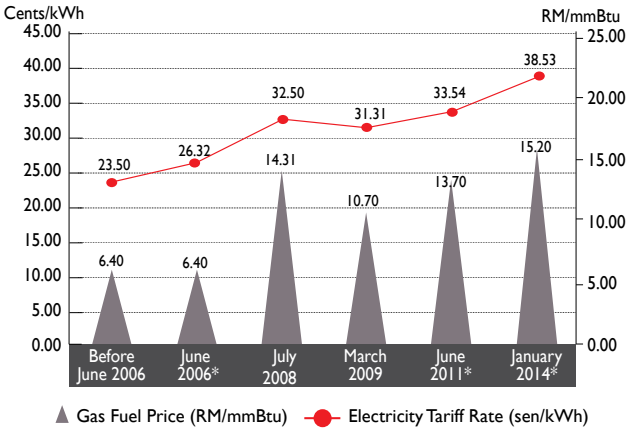
Following a decline in global oil price to below US$50 per barrel at the end of 2014, the Energy Commission reviewed the implementation of the ICPT mechanism that was previously decided.

FUEL PRICING TO DETERMINE ELECTRICITY TARIFF

GAS PRICING FOR THE ENERGY SECTOR

The stipulated gas price for the energy sector from 1997 to 2006 was RM6.40/mmBtu, which was below the actual gas price as the aim was to maintain a low electricity tariff rate. But the move was no longer viable as it would result in a waste of resources and a loss of income for the country. Therefore, when global oil prices increased unexpectedly to US$130 per barrel in early 2008, the government started revising the gas price for the electricity generation sector. Beginning 1 July 2008, gas price was increased to RM14.31/mmBtu. The rise in gas price caused a revision and increase of the average tariff rate in the Peninsula by 23% from 26.32 sen/kWh to 32.50 sen/kWh.

Relation between Fuel Gas Pricing Revision and Average Electricity Tariff Rate in the Peninsula



* Increase includes revaluation of TNB basic tariff

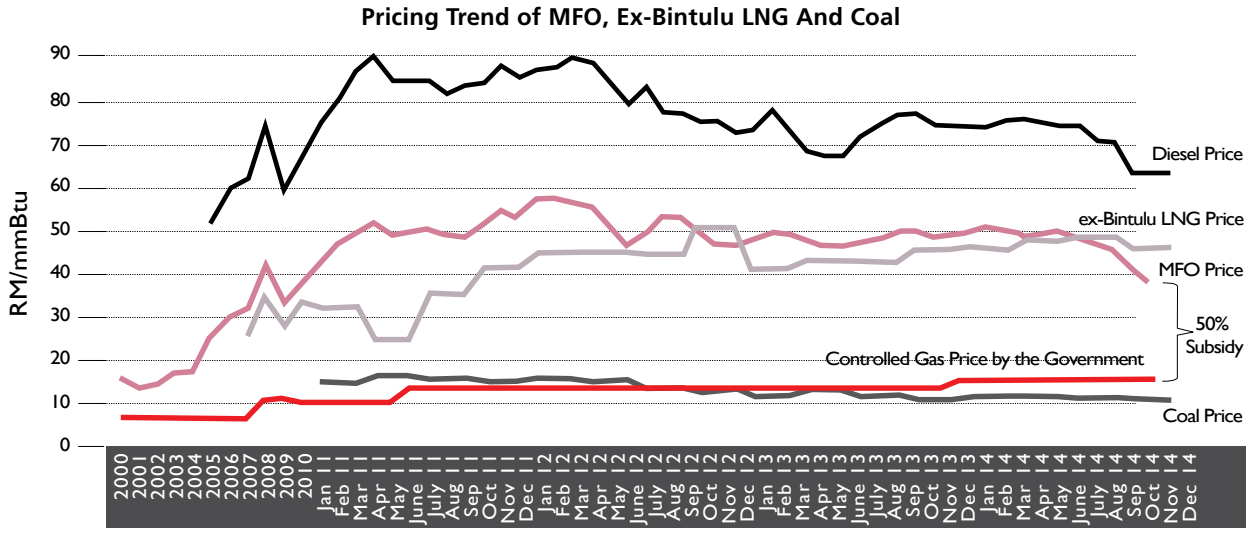
In March 2009, as global oil prices declined, the government reviewed gas price for the generation sector in the Peninsula, which led to a reduction from RM14.31/mmBtu to RM10.70/mmBtu. This subsequently affected the average electricity tariff rate, with a decline of 5% from 32.50 sen/kWh to 31.31 sen/kWh.

Global oil price reached its peak in 2011 and the government revised the gas price for electricity generation from RM10.70/mmBtu to RM13.70/mmBtu with an electricity rate stipulated at 33.54 sen/ kWh from July 2011 onwards. The revision of electricity tariff rate also took into account TNB's basic tariff rate at 2%.

In line with the efforts to rationalise fuel and gas subsidies, the government decided that gas price, which received subsidy of 50% against the market price, was to be increased by RM1.50/mmBtu every six months until it reached the market price. Therefore, in January 2014, gas price was increased at an amount of RM1.50/mmBtu to RM 15.20/mmBtu. Electricity tariff rate was also reviewed and stipulated at 38.53 sen/kWh while taking into account the revision of coal price, LNG cost and TNB basic tariff cost review of 2.69%.

EX-BINTULU LNG AND COAL PRICES

Apart from gas, coal and LNG are among the other main fuel components that determine the electricity tariff rate. Starting from 2013, the usage of LNG was needed to support the depleting gas supply in order to meet the increasing electricity demand as a result of the domestic gas rationing in the generation sector. Therefore, the government decided that the LNG supply used in the generation sector was to be determined at a market price.



The Energy Commission monitored the pricing trend of MFO, ex-Bintulu LNG and coal to compare with the gas pricing as stipulated by the government. Starting from January 2014, the government decided to revise the gas price for the electricity sector from RM13.70/mmBtu to RM15.20/mmBtu. Even though the global oil price trend decreased to around RM40/mmBtu by the end of 2014, it was still higher than government-controlled gas price at RM15.20/mmBtu. This meant that the government had to bear the 50% subsidy for the electricity generation sector, which was absorbed by PETRONAS.

Up until December 2014, ex-Bintulu LNG was the highest-priced component in determining the electricity tariff at RM45/mmBtu, while the coal price, determined through the Applicable Coal Price (ACP), was the lowest at RM11/mmBtu.

GAS BILLING MECHANISM

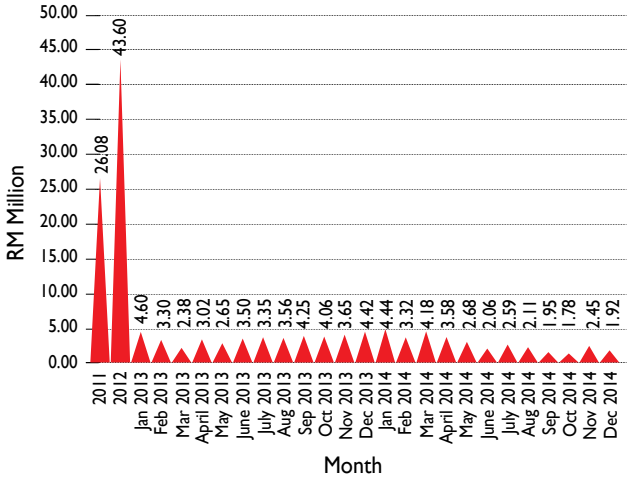
Implementation of the new gas billing mechanism continued in 2014, to manage the issue of unintended gains by IPPs that generate electricity using natural gas and thus creating a sustainable electricity supply industry. The implementation of this mechanism remains under the monitoring and regulation of the Gas Billing Mechanism Committee, which is chaired by the Energy Commission.

Under the new gas billing mechanism, PETRONAS issued two types of bills as follows:

- Bill to IPPs at the price of RM6.40/mmBtu based on the quantity of gas supplied to power plants
- Bill to TNB for the current gas price difference for the energy sector at the price of RM6.40/mmBtu, based on the quantity of gas supplied to IPPs.

The savings gained by TNB as a result of the reduced payment of fuels to IPPs was channelled to the Consolidated Fund of Funds. However, in 2014, the government decided for the savings to be channelled through the ICPT mechanism in order to help the consumers' burden in the case of positive fuel cost pass-through. In totality, the new gas billing mechanism recorded savings of RM145.48 million or average of RM4.28 million per month from March 2011 to December 2014.

Savings from the Gas Billing Mechanism, March 2011 - December 2014



IMPLEMENTATION OF APPLICABLE COAL PRICE (ACP) MECHANISM

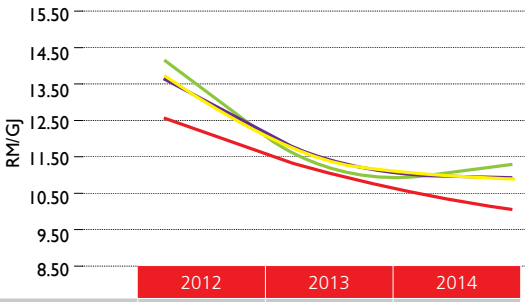
Since 2011, the ACP mechanism has determined the pricing of coal supplied to power plants based on the ratio of coal type as agreed in the following PPA:

Power Plants	Type of Coal	
	Bitumen (%)	Sub-Bitumen (%)
Kapar Energy Venture (KEV)	100	-
TNB Janamanjung (TNBJ)	-	100
Tanjung Bin Power (TGBIN)	70	30
Jimah Energy Venture (JEV)	70	30

The Price Monitoring and Coal Cost Committee, which is chaired by the Energy Commission, monitors the supply and cost of coal procurement by TNBF. The pricing of coal supplies to coal-fired power plants is determined every quarter of the year.

The implementation of the ACP mechanism proved to have a positive effect. The price of coal decreased, with the ACP in 2014 being significantly lower than in 2013 and 2012.

Average Price of Coal, 2012-2014



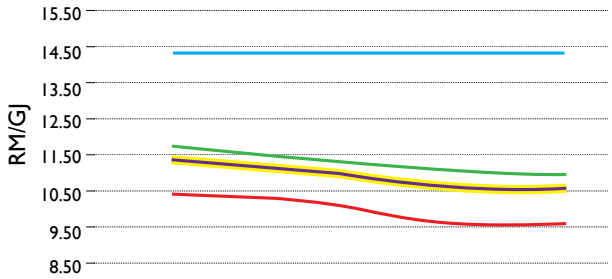
	2012	2013	2014
Jimah Energy Ventures (JEV)	13.65	11.31	10.89
TNB Janamanjung (TNBJ)	12.54	10.95	10.02
Kapar Energy Ventures (KEV)	14.12	11.07	11.27
Tanjung Bin Power (TGBIN)	13.65	11.31	10.89

Throughout 2014, there was a price decline in ACP coal supplied to all coal-fired generation plants.

The decrease in coal pricing was also due to a reduction in global supply activity and demand for coal, as well as a declining bunker rate, namely the fuel cost of shipping freight. The price of coal in 2014 remained below the global gas price at 14.407 RM/GJ.

In relation to the purchase of coal, China and India reduced the import of coal in 2014 owing to lower prices domestically. The import of coal in China was also lower than before, as China is currently planning the development of nuclear plants. Meanwhile, the weakening of the rupee currency in 2014 had discouraged the purchase of imported coal.

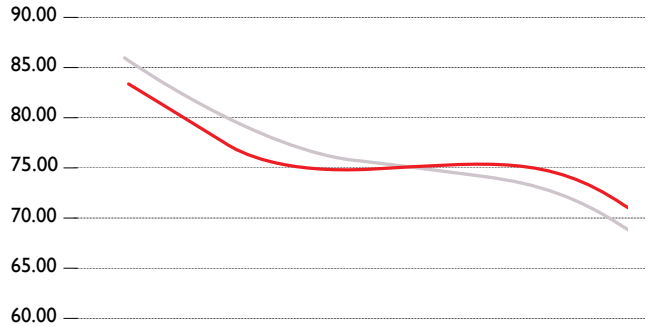
FIXED COAL PRICE



PLANT	FIRST QUARTER, 2014 (RM/GJ)	SECOND QUARTER, 2014 (RM/GJ)	THIRD QUARTER, 2014 (RM/GJ)	FOURTH QUARTER, 2014 (RM/GJ)
Jimah Energy Ventures (JEV)	11.33	11.04	10.66	10.53
TNB Janamanjung (TNBJ)	10.44	10.30	9.68	9.64
Kapar Energy Ventures (KEV)	11.71	11.36	11.08	10.91
Tanjung Bin Power (TGBIN)	11.33	11.04	10.66	10.53
Gas Price	14.41	14.41	14.41	14.41

The Newcastle Coal Price Index (NEWC) and Argus McCloskey Coal Price Index (API#4) also showed that coal prices are expected to decline by 11.0% and 10.8% respectively, due to an imbalance in supply and demand. This is linked to the reduction of coal imports by monopoly countries such as China and India.

Market Price Index



	FIRST QUARTER, 2014 (USD)	SECOND QUARTER, 2014 (USD)	THIRD QUARTER, 2014 (USD)	FOURTH QUARTER, 2014 (USD)
NEWC	85.30	77.50	74.70	72.35
API4	83.30	75.45	75.30	74.55

REVIEW OF SPECIAL INDUSTRIAL TARIFF SCHEME FOR ELECTRICITY CONSUMERS

On 13 August 2014, the government approved a proposed revision of the Special Industrial Tariff (TIK) scheme. Among the agreed decisions was a 2% reduction in the TIK discount for every revision, which is once every six months until 2017. However, after considering the plight of industry players who will have to bear higher operational costs due to the subsidy rationalisation programme, compliance to the minimum salary regulation, and the implementation of the Goods and Services Tax starting July 2014, the Energy Commission agreed to review the implementation of the TIK.

Among the decisions for the new TIK plan are:

- The reduction of TIK discount by 2% per year until 2020, starting from 1 January 2016;
- The discontinuation of new applications for the TIK discount on 1 January 2016;
- The implementation of the energy management programme based on the PPTEC 2008 as new criteria to be qualified for TIK discount;
- The end of TIK discount by 2020; and
- The introduction of Enhanced Time of Use (EToU) Tariff as an option starting from 1 January 2016 to help industrial players cope with the increase in operational cost when the TIK discounts end.

MONITORING THE FINANCIAL PERFORMANCE OF GENERATION LICENSEES

The financial performance of generation licensees is reviewed annually to monitor the level of reliability in terms of financial and technical aspects. Analysis is performed based on audited financial statements submitted by the generation licensees to the Energy Commission, as stipulated by the licensing requirements.

TNB

TNB recorded a net profit of RM5.907 billion, which is an increase of 13.4% from the 2013 Financial Year (FY). The increase in profit is due to a 2.5% rise in electricity sold, as well as the revision of TNB's electricity tariff rate under the IBR mechanism. This contributed to a 14.1% increase in TNB's total income. Therefore, the return on rate base in FY2014 is within the range of 6.0%, compared to FY2013, which was 5.8%.

In terms of debt-equity ratio, TNB recorded a decline from 80% in FY2013 to 64% in FY2014. This is due to a 7.4% reduction in the total loan to RM24.99 billion compared to FY2013 (RM26.98 billion).

SESB

The financial performance of SESB in the last two years was better than the previous years. SESB recorded a net profit of RM96.67 million compared to RM208.52 million in FY2013. This profit is due to a reduction in operational expenses, accommodated by the fuel of RM683 million in 2014 and RM734.8 million in 2013 by the government. Without the subsidy, SESB would still be experiencing loss in its operations.

SESB reported a net profit of RM13.9 million in FY2013. However, SESB performed readjustments on some of its financial details such as asset certification, which is transferred from consumers, and a recalculation of financial charges which requires a company to report its liability in a PPA to the IPP.

The total electricity sold and the total income of SESB increased due to a 2.8% rise in electricity demand, as well as the revision of SESB's electricity tariff that was approved by the government on the 1st of January 2014. SESB RoRB rate in FY2014 stood at 1.5%, compared to 2.7% in FY2013.

IPP

In the Peninsula, first-generation IPPs recorded an average return on asset (ROA) of 17.5%, 8.4% from second-generation IPPs, and 2.2% from third-generation IPPs in FY2013. Overall, the financial performance of IPPs in the Peninsula is good and stable.

In Sabah, the ROA of IPPs ranges between 1.3% and 7%. The highest ROA was recorded by IPP Sepangar Bay Power Corporation. On the whole, the ROA of IPPs in Sabah retained a record of stable performance in FY2013.

[1] $\text{RoRB} = \frac{\text{(Sales – Operation Costs – Value Depreciation – Consumer Deposit Interest – Corporate Tax)}}{\text{(Power plants, properties and equipment – Delayed Income – Users Deposit)}}$

REVISION OF GMB NATURAL GAS AVERAGE TARIFF

On 1 May 2014, in line with the national fuel subsidy rationalisation plan and the government's decision on 9 April 2014, the price of natural gas sold by PETRONAS to the non-energy sector would be automatically increased to RM1.50/mmBtu every six months. Meanwhile, the pricing of LNG sold by PETRONAS to the non-energy sector was based on the weighted average price of ex-Bintulu LNG with 10% discount rates (including the costs of shipping, regasification and transmission).

As a result, two revisions of GMB's average tariff were implemented, with an average tariff of RM19.32/mmBtu on 1 May 2014 and an average tariff of RM19.77/mmBtu on 1 November 2014. The percentages of the increment at both revisions were 20.22% and 2.33% respectively.

Tariff for Every Category of GMB Consumer

Tariff Category	Category of User	Gas Consumption (mmBtu)	Tariff (RM/mmBtu)		
			June – April 2014	May – October 2014	November 2014 – April 2015
A	Domestic	0	19.52	19.52	19.52
B	Commercial	0-600	20.61	20.61	21.00
C	Commercial	601-5,000	13.98	17.64	18.19
D	Industrial	5,001-50,000	14.61	18.14	18.55
E	Industrial	50,001-200,000	16.07	19.00	19.44
F	Industrial	200,001-750,000	16.07	19.18	19.63
L	Industrial	750,000 and above	16.45	19.65	20.11
Average Tariff (RM/mmBtu)			**16.07**	**19.32**	**19.77**

The revision of GMB's average tariff on 1 November 2014 only took into consideration the price changes of LNG and piped natural gas, as well as the volume of natural gas supplied by GMB to its consumers for six months before the revision, and before the implementation of the Fuel Cost Pass-Through.

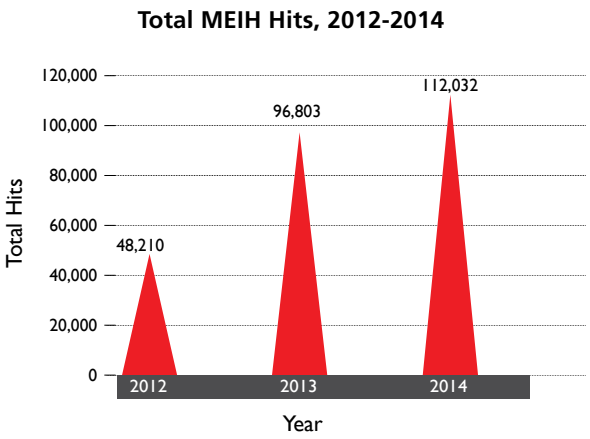
INFORMATION AND DATA ON THE ENERGY SECTOR

Information on the energy sector is shared on the Malaysian Energy Information Hub (MEIH) to assist the energy policy-planning in the country. MEIH became a reference hub for stakeholders from within and outside the country.

The MEIH, which was launched in 2012, had 35,749 visitors that year. In 2014, it had 112,032 visitors from around the world, compared to 96,083 visitors in 2013.

In addition to a publication on the performance of the Malaysian electricity and gas supply industries, MEIH statistics, such as *Energy Balance, Economic Data Analysis, Electricity Supply Statistics*, and *Gas Supply Statistics* could also be

downloaded for free. Most of the statistics were obtained from government agencies, private agencies and the energy industry.

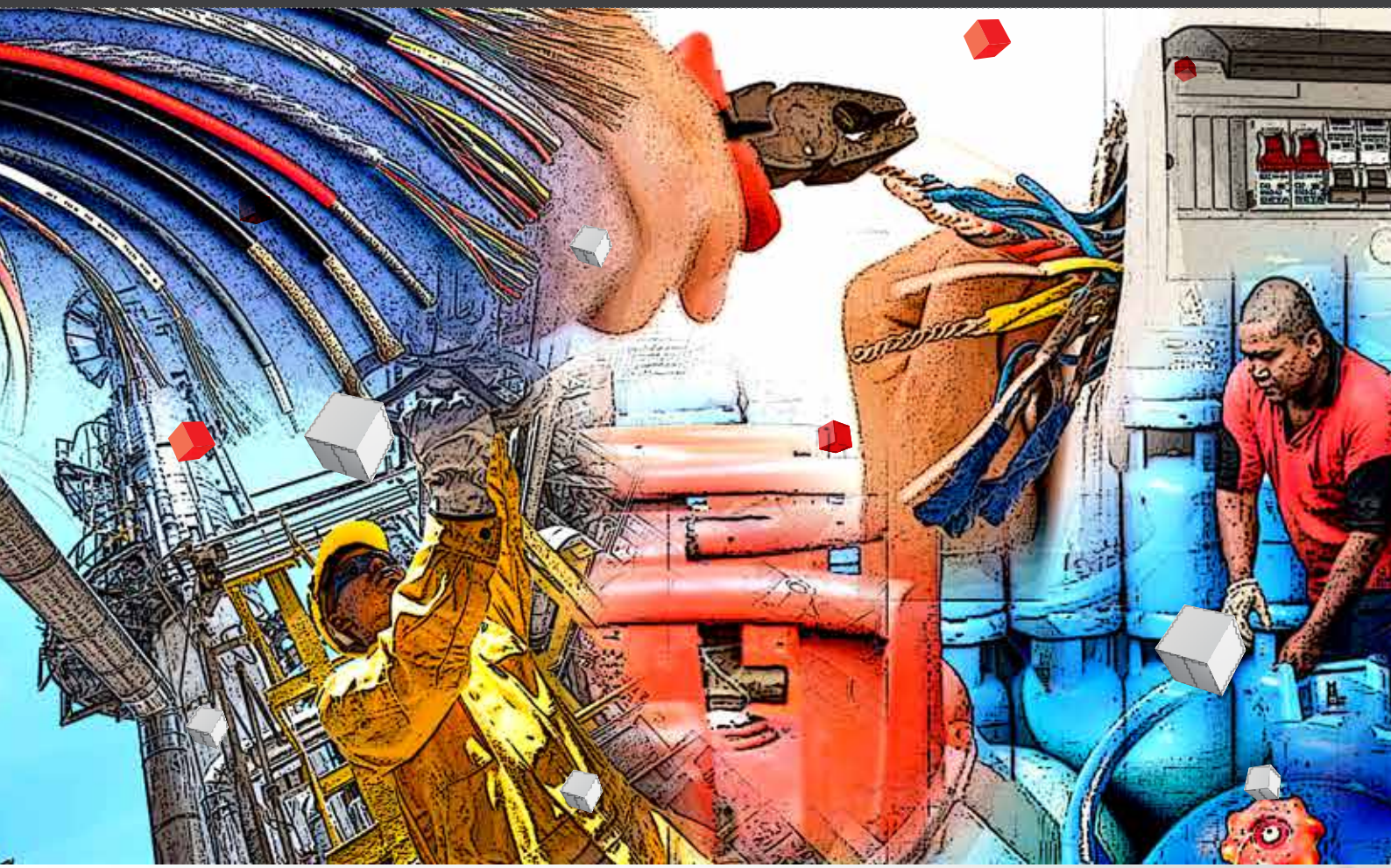


Total MIEH hits according to country

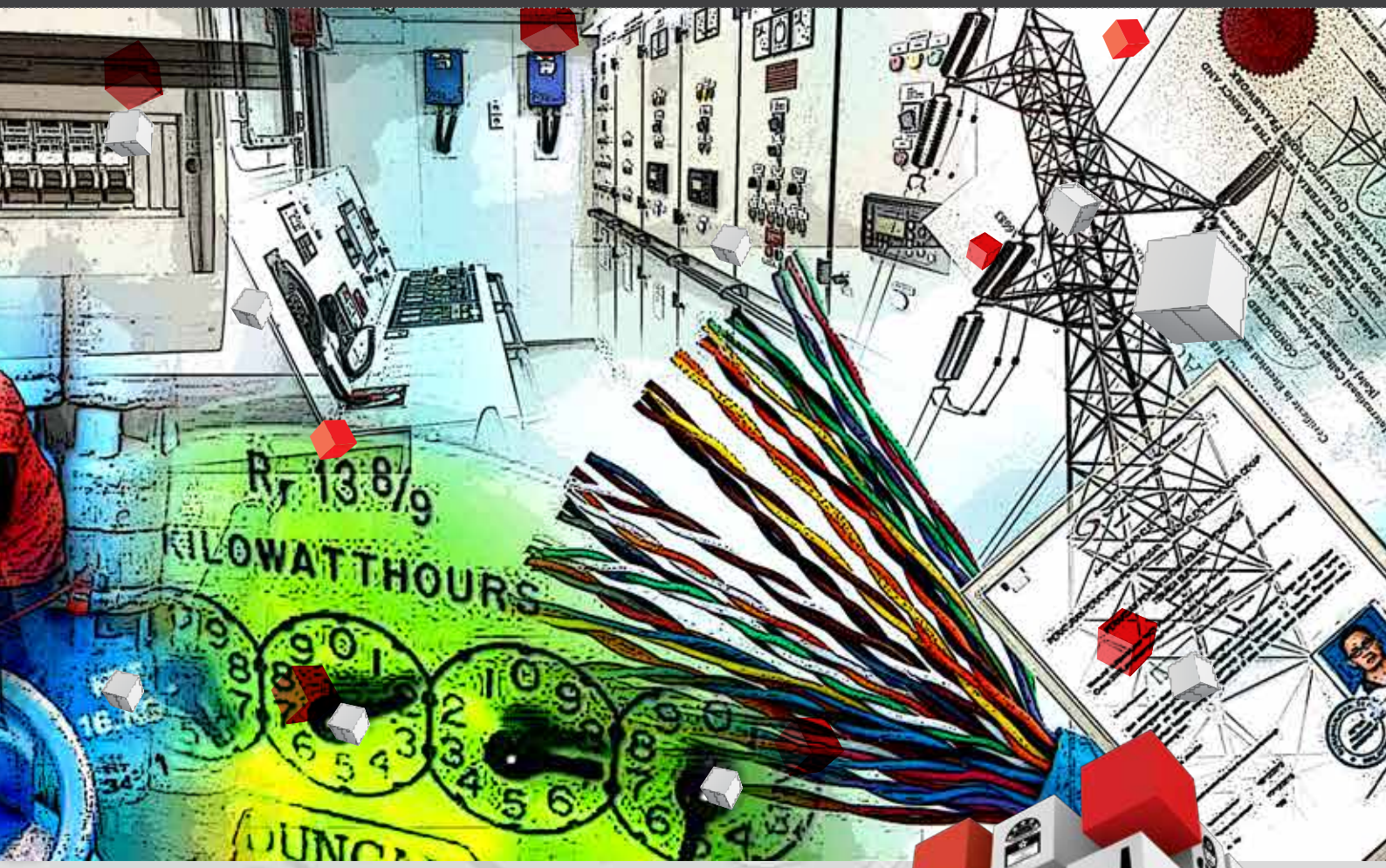
Country	Hits
Malaysia	75,690
Singapore	6,885
The United States	4,553
Japan	3,334
India	2,908
United Kingdom	2,840
South Korea	1,882
Australia	1,788
Thailand	1,749
Iran	1,217
Others	9,186
TOTAL	112,032

The MEIH was updated with independent data by data providers for the National Energy Balance (NEB). The Energy Commission also conducted training for data suppliers in the Peninsula, Sabah and Sarawak.

The Energy Commission also held discussions with representatives from the Sarawak energy industry on the importance of data-sharing, especially for the publication of *National Energy Balance* and *Performance and Statistical Information on the Electricity Supply Industry in Malaysia.*



STRENGTHENING LEGAL COMPLIANCE AND SERVICE QUALITY



LICENSING AND CERTIFICATION

ISSUANCE OF PUBLIC LICENSES AND PRIVATE LICENSES

The Energy Commission issued 177 public licences and 2,560 private electrical licences (including 1,031 in Sabah). A Public Generation Licence was issued to TNB Prai Sdn Bhd (1,071 MW) and TNB (6,501 MW). A total of 13 licences were amended and six were cancelled. Amendments to licences were done in cases of any addition or reduction to the installation capacity as stipulated under the licensing conditions.

1,015 private gas licences were issued in 2014, with 375 being new licences and 640 licence renewals.

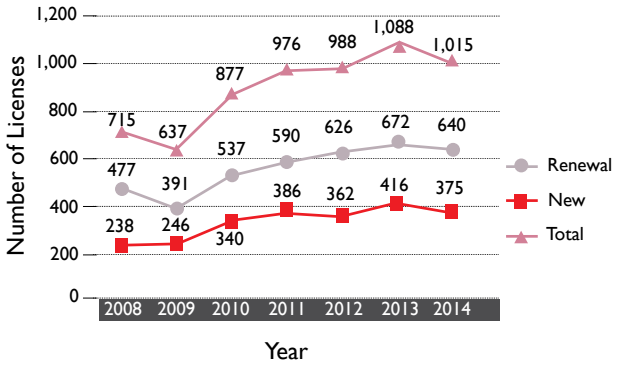
Public and Private Licences Issued, 2013-2014

Type of license according to category	Number of licences issued	
	2013	2014
Public Licence for Electricity Generation	4	2
Public Licence for RE Generation	57	76
Public Licence for Electrical Distribution	46	30
Provisional License for RE	67	43
Private Licence (5MW and above)	4	4
Private Licence (less than 5 MW)	2,377	2,556
Private Licence for Gas	1,088	1,015
Total	**3,643**	**3,726**

76 public renewable energy (RE) licences were issued, 73 of which were issued in the Peninsula (86.3 MW) and three in Sabah (2.7 MW).

For private licences, the number of new applications and renewals is 1,015, compared to 1,088 in 2013. The decline in the number of licences issued was a result of premise-owners not complying with the *Gas Supply Regulations 1997*, which stipulates that they have to appoint a Gas Competent Person to perform installation inspection audits every two years.

Private Licences Issued, 2008-2014



Private Gas Licenses according to Consumer Category

Category	Number of Licences
Educational Institutions	163
Restaurants	196
Recreational Places	68
Hotels	137
Hospitals	128
Supermarkets	134
Others	189
Total	**1,015**

REGISTRATION OF INSTALLATION AND APPROVAL

Registration of electrical installations (new registrations and renewals) increased from 10,488 in 2013 to 10,599 in 2014.

For gas installations, the Energy Commission issued 2,288 approvals for the installation and handling of natural gas and liquefied petroleum gas (LPG) in 2014 compared to 2,083 in 2013.

Issued approvals include those of pipelines, transmission pipe systems, metering stations, area stations, control stations and additional gas installations.

Registration of Electrical Installations

State	2013	2014
Perlis	36	33
Kedah	338	384
Pulau Pinang	855	920
Perak	640	740
Selangor	2,371	2,443
Federal Territory of Kuala Lumpur and Putrajaya	1,735	1,550
Negeri Sembilan	402	396
Malacca	327	332
Johor	1,505	1,433
Kelantan	186	173
Terengganu	245	226
Pahang	517	565
Sabah	1,331	1,404
Total	**10,488**	**10,599**

Approvals for Installing and Handling Natural Gas and LPG Installation

Approval	Category	Natural Gas Installation		LPG Installation	
		2013	2014	2013	2014
Approval to Install	Industrial	74	86	1	0
	Commercial	61	104	918	1,012
	Residential	12	19	22	34
	Total	**147**	**209**	**941**	**1,046**
Approval to Operate	Industrial	79	83	1	0
	Commercial	68	94	808	824
	Residential	11	9	28	23
	Total	**158**	**186**	**837**	**847**

REGISTRATION OF ELECTRICAL AND GAS CONTRACTORS

The registration of electrical contractors numbered 3,714, an increase of 5% compared to 2013. For gas contractors, eight new contractors were registered.

Registration of Electrical Contractors

State	2013	2014
Perlis	13	47
Kedah	198	203
Pulau Pinang	243	251
Perak	245	264
Selangor	795	1,075
Federal Territory of Kuala Lumpur and Putrajaya	337	429
Negeri Sembilan	153	139
Malacca	120	133
Johor	356	360
Kelantan	199	188
Terengganu	150	159
Pahang	192	167
Sabah	345	216
Total	**3,376**	**3,714**

Registration of New and Renewed Gas Contractor 2014

Application Type	Class A	Class B	Class C	Class D	Total
Renewal	37	40	13	6	96
New	3	1	1	3	8

COMPETENCY CERTIFICATION

ELECTRICAL COMPETENCY CERTIFICATION

The number of Electrical Competency Certifications issued until 2014 is 107,674. For 2014 alone, the number was at 5,376. This is a decline of 10.9% from 2013. Of the total amount, 90.8% of the certifications were issued through examinations managed by accredited institutions. Meanwhile, 9.2% of the certifications were issued through examinations by the Energy Commission.

Competency Certifications Issued According to Category Since 2014

Category	Limit	Number
Electrical Service Engineer	11 kV	43
	22 kV / 33 kV	103
	66 kV	2
	132 kV	41
	275 kV	40
	500 kV	9
	Total	238
Competent Electrical Engineer	1 kV	2
	11 kV	224
	22 kV / 33 kV	296
	66 kV	10
	132 kV	155
	275 kV	474
	500 kV	29
	Total	1,190
Electrical Supervisor	1 kV	221
Certified Chargeman	A0	14,955
	A1	13,480
	A4-2	589
	A4-1	703
	A4	6,344
	B0-2	306
	B0-1	563
	B0	4,114
	B1	1,195
	B4	1,421
	Total	43,670
Cable Jointer	1 kV	165
	11 kV	161
	22 kV / 33 kV	118
	66 kV	-
	132 kV	4
	275 kV	-
	Total	448
Wireman	PW1	11,141
	PW2	23,053
	PW3	6,802
	PW4	20,858
	PW5	5
	PW6	48
	Total	61,907
Total Number		**107,674**

Certifications Issued for Electrical Competency

	Competency Certification Category						
	PW	PJ	PK	PE	JPE	JEK	TOTAL
Through the Energy Commission Examination	135	279	1	18	15	47	495
Through Accredited Institutions	2,977	1,898	6	0	0	0	4,881
Total	3,112	2,177	7	18	15	47	5,376

Since 2012, the Energy Commission has not conducted the competency examination for the following categories:

a) Wireman (PW1,PW2,PW3,PW4), and
b) Certified Low-Voltage Chargeman (A0 and A1)

The competency examination for these categories has been outsourced to accredited training institutions. The Energy Commission conducts competency examinations only for Electrical Service Engineers, Competent Electrical Engineers, Electrical Supervisors and Certified Chargemen A4-2, A4-1, B0-2, B0-1, B0, B1 and B4. The Energy Commission gave 43 new approvals through accredited institutions compared to 40 in 2013.

In 2014, the Energy Commission handled 16 competency examinations for Electrical Service Engineers, Competent Electrical Engineers and Electrical Supervisors. Of 77 candidates, 73 passed.

For Certified Chargeman (theory) competency examinations (A4-2, A4-1, A4, B0-2, B0, B1 and B4), the Energy Commission conducted the examinations on 11 March 2014 for 792 private candidates. 230 candidates passed.

New Approvals in Accredited Institutions

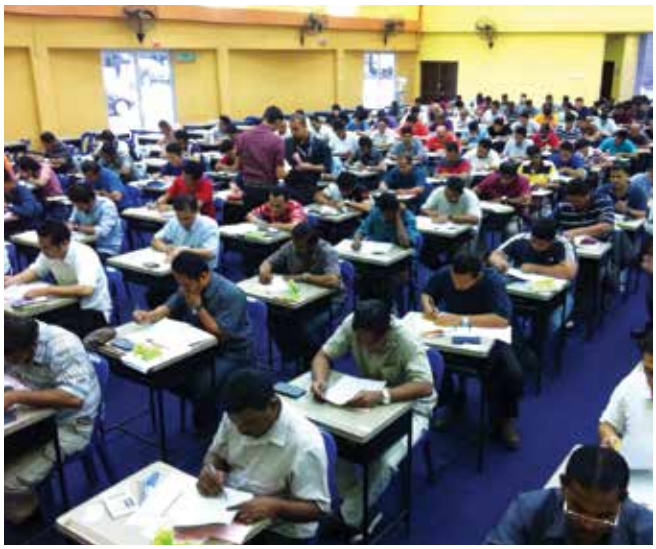
No.	Institution	New Approval
1.	ILP Kota Bharu	A0 (Full-Time / Part-Time)
2.	ILP Kuala Lumpur	A1 (Full-Time / Part-Time)
3.	ILP Kuala Lumpur	Low-Voltage Overhead Line Module (Full-Time / Part-Time)
4.	ILP Kuantan	A0 (Part-Time)
5.	IKBN Wakaf Tapai, Terengganu	PW2 (Full-Time / Part-Time) – plus trainers
6.	ILP Kuala Terengganu	Low-Voltage Alternating Power Generation (Full-Time / Part-Time) – plus trainers
7.	ILP Kuala Terengganu	Low-Voltage Overhead Line Module (Full-Time / Part-Time) – plus trainers
8.	ILP Kuala Terengganu	A0 (Full-Time / Part-Time)
9.	IKM Kuala Lumpur	A0 (Part-Time) – plus trainers
10.	IKBN Bukit Mertajam	A4 (Full-Time / Part-Time) – plus trainers
11.	IKBN Bukit Mertajam	PW2 (Full-Time / Part-Time) – plus trainers
12.	IKBN Jitra, Kedah	PW2 (Full-Time / Part-Time)
13.	IKM Jasin, Malacca	Low-Voltage Overhead Line Module (Full-Time / Part-Time)
14.	IKM Lumut, Perak	PW2 (Part-Time)
15.	IKM Lumut, Perak	PW4 (Full-Time / Part-Time)
16.	IKM Lumut, Perak	A0 (Part-Time)
17.	IKM Lumut, Perak	A1 (Full-Time / Part-Time)
18.	IKM Lumut, Perak	Low-Voltage Overhead Line Module (Full-Time / Part-Time)
19.	IKM Lumut, Perak	Low-Voltage Alternating Power Generation Module (Full-Time / Part-Time)
20.	ADTEC Kemaman	A0 (Full-Time / Part-Time)
21.	ADTEC Kemaman	A4 (Full-Time / Part-Time)
22.	IKM Kota Kinabalu	Low-Voltage Overhead Line Module (Full-Time / Part-Time)
23.	ILSAS, Bangi	11 kV Substation Management Module (Full-Time / Part-Time)
24.	ILSAS, Bangi	11 kV Substation Management Module (Full-Time / Part-Time)
25.	ILSAS, Bangi	11/33 kV Cable-Lacing Test Module (Full-Time / Part-Time)
26.	Kolej Yayasan Sabah, Kota Kinabalu	PW2 (Full-Time / Part-Time)
27.	IKTBN Sepang	A1 (Full-Time / Part-Time)
28.	IKTBN Sepang	Low-Voltage Overhead Line Module (Full-Time / Part-Time)
29.	ILP Mersing	PW2 (Full-Time) – plus trainers
30.	ILSAS, Malim Nawar	11 kV Substation Management Module (Full-Time / Part-Time)
31.	IKM TASYA Pekan	PW2 (Full-Time / Part-Time) – plus trainers
32.	IKM TASYA Pekan	PW4 (Full-Time / Part-Time) – plus trainers
33.	IKM TASYA Pekan	A0 (Part-Time) – plus trainers
34.	IKM TASYA Pekan	A1 (Full-Time / Part-Time) – plus trainers
35.	IKM TASYA Pekan	Low-Voltage Overhead Line Module (Full-Time / Part-Time)
36.	IKM TASYA Pekan	Low-Voltage Alternating Power Generation Module (Full-Time / Part-Time)
37.	ILSAS, Bangi	Modular Course for High- and Low-Voltage Maintenance Operator
38.	ILSAS, Bangi	Course for Voltage Limit Increase from 11 kV to 33 kV for High-Voltage Maintenance Operators (Full-Time / Part-Time)
39.	IKM TASYA Pekan	A4 (Full-Time / Part-Time)
40.	KISMEC Sg. Petani	A0 (Part Time) – Theory class at PGM Langkawi
41.	ILP Pasir Gudang	PW4 (Full-Time) – plus trainers
42.	PGM Gaya, Sabah	PW2 (Full Time) – change of address
43.	PGM Gaya, Sabah	PW2 (Part Time) – change of address

Notes :

PW2 : One Phase and Test Endorsement
PW4 : Three Phases and Test Endorsement
AO : Low-Voltage System (Without Aerial Line and Generation Station)
A1 : Low-Voltage System (Without Generation Station)
A4 : Low-Voltage System
PK 1 : Until 1 kV
PK 2 : Until 11 kV
PK 3 : PK3 Until 22 kV/33 kV

Every year, the Energy Commission deliberates on issues related to implementation, procedure or competency examination policies. Among the main challenges identified is the lack of Electrical Competent Persons in the industry. To address the issue in 2014, the Energy Commission implemented the following two measures:

* Removed category/limit minus on maintenance operators; and
* Created a (limited) high-voltage maintenance operator category.



Written examination (theory) for maintenance operators

Cable-lacing test for low-voltage overhead line for the A1 maintenance operator category

GAS COMPETENCY CERTIFICATION

832 gas competency certifications were issued by 2014, 10% of which is for gas engineers, 33% for gas engineering supervisors and 57% for gas fitters. 71 certifications were issued in 2014.

In 2014, 278 Competent Persons were registered, 270 of which were renewals of registration, while eight were new registrations.

Total Number of Gas Competency Certifications and Registration, 2013 -2014

Competency Class	Total Number of Issued Gas Competency Certifications		Total Number of Registered Gas-Competent Person			
			(Renewals)		(New Registration)	
	2013	2014	2013	2014	2013	2014
Gas Engineer	1	1	27	26	2	0
Gas Engineering Supervisor	4	4	116	94	3	0
Gas Fitter I	11	21	125	96	7	1
Gas Fitter II	1	0	36	21	2	0
Gas Fitter III	5	45	27	33	12	7
Total	22	71	331	270	26	8

32 interview sessions were conducted that were attended by 82 candidates. 71 candidates passed and obtained the Gas Competency Certification, 1 of which was for gas engineers, 4 for gas engineering supervisors and 66 for gas fitters.

APPROVAL OF EQUIPMENT CERTIFICATION

ELECTRICAL EQUIPMENT

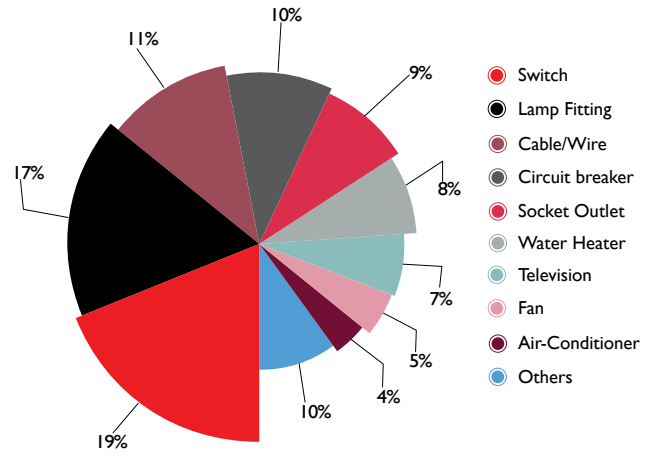
To ensure that electrical equipment is safe to use, the Energy Commission issues an Approval Certification for imports, manufacturing and exhibitions. The Energy Commission also issues a release letter for controlled and uncontrolled equipment in the Royal Malaysian Customs Department in some circumstances.

The Approval Certification for import activities increased by 25.8% in 2014 compared to 2013, while the Approval Certification for manufacturing activities increased by 32.3% in 2014 compared to 2013.

Approval Certifications and Release Letters for Electrical Equipment, 2010- 2014

Year	New Registration					Release Letters	Total
	Imports	Manufacturing	Exhibitions	Imports	Manufacturing		
2010	3,389	986	50	1,768	871	156	6,805
2011	3,402	1,206	35	1,817	837	853	8,303
2012	3,848	1,061	17	1,902	1,045	1,286	9,381
2013	5,426	1,282	6	1,841	905	1,819	11,377
2014	7,311	1,894	29	1,738	792	2,016	13,788

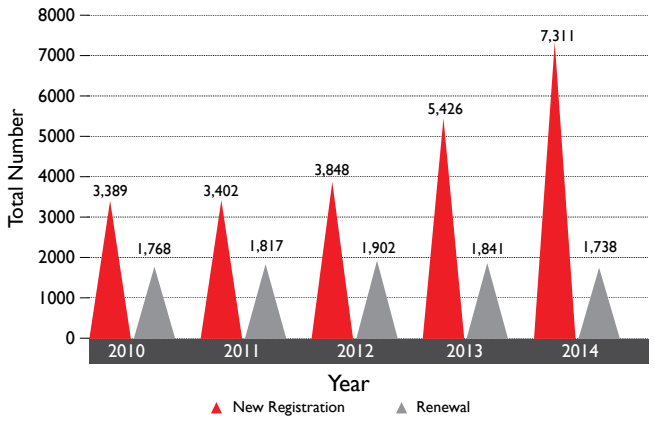
Manufactured Electrical Equipment Categories



Approvals for Gas Equipment and Appliances

Type of Approval	2013	2014
Approvals for installing and manufacturing gas appliances and equipment	27	0
Approvals for importing gas appliances and equipment	6	4
Approvals for gas appliances and equipment	27	37

Approvals to Import Electrical Equipment



Gas Equipment and Appliances

37 new registrations for gas equipment and appliances were approved, including gas components such as gas meters, pressure valves, gas leak detectors, gas stoves, polyethylene pipes and others. However, only 4 applications for manufacturers and importers of gas appliances were approved in 2014.

COMPLIANCE AUDIT

ENGINEERING AND MANAGEMENT AUDIT

Power plants in the Peninsula and Sabah are required to perform engineering and management audits every four financial years or according to an agreed period. This requirement is stated in the terms and conditions when the licenses are approved. The objectives of the audit implementation are as follows:

- To perform an independent and detailed evaluation of the license holder's performance
- To evaluate the progress of the license holder in terms of engineering, finance and management of power plants or licensed activities
- To ensure the license holder complies with the terms and conditions of the approved licensing
- To propose improvements on the service and performance of the license holder

Audited Power Stations

Stations	Audit Period	Audit Status
Musteq Hydro Sdn. Bhd.	January 2004 – December 2012	Completed
Sepangar Bay Power Corporation Sdn. Bhd.	December 2008 – January 2012	Completed
TNB Janamanjung	September 2008 – August 2012	Completed
Tenaga Nasional Berhad	September 2008 – August 2012	Completed
KKIP Power Sdn. Bhd.	January 2008 – December 2011	Completed
Kapar Energy Ventures	September 2008 – August 2012	Completed
SESB	1 September 2009 – 31 August 2013	Yet to be completed
Jimah Energy Ventures	January 2009 – December 2012	Completed
Prai Power Sdn. Bhd.	1 January 2010 – 31 December 2013	Completed
Segari Energy Ventures Sdn. Bhd.	1 January 2010 – 31 December 2013	Completed
GB3 Sdn. Bhd.	1 January 2010 – 31 December 2013	Completed
Tanjung Bin Power Sdn. Bhd.	1 January 2010 – 31 December 2013	Completed

TNB

TNB completed the audit for the financial year 2009-2010 until 2011-2012. The implemented scope encompassed power generation, transmission, distribution, financial aspects, and corporate and human capital management. PriceWaterhouseCoopers was the appointed management and engineering auditor.

The audit indicated that TNB had planned an improved working operation. However, there are still some proposed improvements that need to be implemented by TNB. The observation by the auditor also indicated that TNB had taken actions over all proposed suggestions on the 2008 management and engineering audit.

SESB

SESB performed its audit for the financial year from 1 September 2009 to 31 August 2013. The appointed auditor was Ernst & Young. Audit activities in SESB's power plants were conducted between 11 August 2014 and 20 August 2014, with the participation of an Energy Commission officer. The final audit report is expected to be submitted at the end of March 2015.

Centralised Utility Facilities (CUF), PETRONAS

The engineering and management audits for the financial year 2010 until 2013 on CUF were completed. Findings indicated CUF's good performance in electricity generation activities through co-generation and electricity distribution. The auditor submitted several proposed improvements in CUF operations, such as continuous monitoring on the thermal efficiency of power plants, continuous improvement in safety, and efforts to enhance the level of competency among CUF employees in line with Malaysian law requirements.

KEV

KEV performed its audit for the financial year from 1 September 2008 to 31 August 2012 by its appointed auditor Ernst & Young. The result of the audit report was presented during the Meeting of the Joint Committee on Licensing on 27 June 2014. Based on the audit, the Energy Commission requested KEV to prepare a more comprehensive action plan as most problems encountered by KEV started a long time ago and continue to reoccur.

Following this request, KEV presented a follow-up action plan during the Meeting of the Joint Committee on Licensing on 16 December 2014 that comprised its short- and long-term action plans, including the cost to be borne by KEV to ensure the continuity of electricity supply in Malaysia's middle zone.

TNB Janamanjung

The audits for the Sultan Abdul Aziz Power Stations or TNB Janamanjung were performed at the end of 2013 for the financial year between September 2008 and August 2012. Overall, TNB Janamanjung complied with the legal aspects and operated according to the requirements stipulated under the Malaysian Grid Code. The auditor suggested several improvements and proposed that TNB Janamanjung provide documentations and Substance Registration System reports for the reference of the power stations operator.

MALAKOFF Corporation Berhad

The audit performed on the four IPPs owned by Malakoff Corporation Berhad was completed on 16 December 2014. The audit report for the period between 2010 and 2013 was presented at the Meeting of the Joint Committee on Licensing. The suggestions by the consultant will be used as a reference for the IPPs to improve their performance in the future. The results of the audit and improvement suggestions will continue to be monitored in 2015.

AUDIT ON RELIABILITY OF ELECTRICITY GENERATION IN SABAH AND LABUAN

The audit on reliability of electricity generation performed on SESB and IPPs was implemented on 5 November until 5 December 2014, comprising visits and inspections of the power stations in Sabah's west coast. For the east coast of Sabah, audits were performed on 10-20 November 2014.

Audits aim to establish the reliability of generation in power stations and ensure that the station management complies with the requirements stipulated under the *Electricity Supply Act 1990* and *Electricity Regulations 1994*, as well as the Sabah and Labuan Grid Code. In addition, it helps identify the challenges encountered by the power station management. 12 power stations were inspected and tested in the Sabah's West Coast and Labuan. In the East Coast of Sabah, 13 power stations were inspected and tested, of which 7 are owned by IPPs and the remaining are owned by SESB.

Audited Power Stations at the West Coast of Sabah and Labuan

IPP-owned Stations	SESB-owned Stations
1. Teluk Selut Station 2. Reguding Station 3. Sepanggar Bay Power Corporation Station 4. ARL Station 5. Kimanis Power Station 6. SPR Energy Station 7. Omega Brilliance Sdn. Bhd Station 8. Kadamaian Mini Hydro Station 9. Pangapuyan Mini Hydro Station	1. Melawa Power Station 2. Patau-Patau Power Station 3. Sayap Mini Hydro Station

Audited Power Stations in the East Coast of Sabah

IPP-owned Stations	SESB-owned Stations
1. Seguntor Bioenergy Sdn. Bhd. 2. Kina Biopower Sdn. Bhd. 3. Simbest GST 4. Libaran Power Station 5. Serudong Power Sdn. Bhd. 6. TSH Bioenergy Sdn. Bhd. 7. Teck Guan Biomass	1. Kubota Power Station 2. Tawau Power Station 3. Lahad Datu Power Station 4. POIC Power Station 5. Semporna Power Station 6. Labuk Power Station

Almost every power station in Sabah's West Coast and Labuan were inspected. They also underwent the station reliability test. Of 14 stations, only two were not inspected—Melangkap Hydro Mini Station and Pangi Hydro Station—due to a breakdown during the auditing period.

The inspection indicated that the reliability of the gas-fired power stations exceeded that of diesel-fired stations. The reliability of diesel-fired stations was at a low level due to several generation units that were experiencing failures.

In terms of compliance with the requirement of a visiting Competent Person, there were stations with underqualified Competent Persons. Therefore, a notice of instruction to enhance competency level among the existing Competent Persons was issued to all stations.

In the east coast of Sabah, the protective relay in SESB-owned stations had to be calibrated. In addition, SESB-owned stations that act as a standby power suffered from lack of maintenance, and there was no TAAC/performance test conducted for several power stations.

ELECTRICAL SAFETY AUDIT

In an effort to mitigate electrical accidents in installation sites, the Energy Commission audited installations by electricity suppliers. The implementation of electrical safety audit programmes will continue, to enhance the safety level in installation sites as stipulated by the legal requirements.

Four locations were identified for the implementation of electrical safety audits. The audit activities consisted of two stages:

- The review and verification of written documents for the Competent Person training programmes, lists of Competent Persons and working procedure at electrical substations
- Observation visits to working sites and observation of electrical-switching tasks conducted in electrical substations

Electrical Safety Audits Performed

Substation Owner	Date of Audit	State
NUR	18 - 20 March 2014	Kulim, Kedah
SESB	24 - 26 June 2014	Sabah
Kota Kinabalu Industrial Park Power Sdn. Bhd. (KKIP)	14 - 16 October 2014	Sabah
TNB	28 - 30 October 2014	Pahang

Among the identified non-compliance to the *Electricity Supply Act 1994* are:

- Protective gear is not used while performing electrical switch-related tasks
- Warning signs are not placed in working sites
- Hygiene issues for the equipment in the installation site
- The substation gate is not closed properly and the substation itself is not well-maintained
- Fire alarm control panels are not functioning properly
- RMU gates and apparatus involved in the electrical switch-related task is locked using a non-standard lock and the warning signs are not placed on site

Protective gear is not used properly

Non-functional installation status indicators

Substation gate is not closed securely

AUDITS ON ACCREDITED INSTITUTIONS

12 audits were performed on accredited institutions in 2014. Yearly audits are performed to ensure that accredited institutions always comply with the conditions attached to the accreditation. The conditions encompass learning equipment, student recruitment and a sufficient number of competent training workforce. Other conditions are updated for the institutions regularly.

List of Audited Accredited Institutions

No.	NAME OF INSTITUTION	CATEGORY
1.	ILP Mersing, Johor	PW2
2.	PGM Keluang, Johor	PW2
3.	ILP Bukit Katil, Malacca	PW2, PW4 and A0
4.	PGM Prima Tasek Gelugor, Pulau Pinang	PW2, PW4 and A1
5.	IKM TASYA, Pekan, Pahang	PW2, PW4, A0, A1, A4, Modul TAVR and Modul JKSVR
6.	PGM Pekan, Pahang	PW1 and PW4
7.	IKM Kota Kinabalu, Sabah	A0, A1 and Modul TAVR
8.	KISMEC, Sg. Petani, Kedah	A0
9.	IKM Sg. Petani, Kedah	PW1, PW2, PW4, A0 and A1
10.	ABM Wilayah Utara, Sintok, Kedah	PW1, PW2, PW3, PW4, A0 and A1
11.	ABM Wilayah Selatan, Johor Bahru, Johor	PW1, PW2, PW4 and A0
12.	PGM Gelang Patah, Johor	PW2

Audit performed on a tester device used in accredited institutions

The Energy Commission conducted eight meetings with the Chairs of Competency Examinations Committee at the institutional level to deliberate on issues related to accreditation and competency examinations. Among the matters discussed were:

i. Upgrading and revocation of Certificates of Competency for Chargemen
ii. Fee review
iii. Registration of certificates of competency of training institution lecturers
iv. Delays in the submission of examination results.

MONITORING AND ENFORCEMENT

MONITORING AND INSPECTION

Similar to previous years, the Energy Commission appointed several special unit officers to manage issues related to electricity and gas to ensure legal compliance. The Energy Commission gave priority to the following enforcement activities:

- Safety inspection of Electrical Installations
- On-site inspection of Electrical Contractors
- Inspection of the Seller/Importer/Manufacturer of Electrical Equipment
- On-site inspection of Electricity Meter
- Audit of Energy Efficiency Management System in Industry
- Inspection of Piped Gas Installations and
- Curbing Electricity Theft

The issuance of warning notices, confiscation, compounding and court actions were also undertaken to manage non-compliance issues.

Inspections According to State

State	Inspection of Electrical Installations	Inspection of Electrical Contractors	Inspection of the Premises of the Seller / Importer / Manufacturer	On-site Inspection of Electricity Meters	Inspection of Energy Efficiency Practices	Inspection of Piped Gas Installations	Total
Perlis	11	0	5	22	1	0	39
Kedah	30	12	19	31	5	0	97
Pulau Pinang	52	17	10	68	6	15	168
Perak	109	25	12	102	9	13	270
Selangor	147	2	15	54	29	0	247
Federal Territories and Putrajaya	97	2	10	73	7	4	193
Negeri Sembilan	46	15	7	39	10	1	118
Malacca	65	25	26	71	6	29	222
Johor	100	18	11	101	4	15	249
Kelantan	51	7	26	84	12	41	221
Terengganu	26	5	6	36	0	0	73
Pahang	129	20	7	107	6	17	286
West Coast of Sabah	46	45	6	99	6	4	206
East Coast of Sabah	133	8	8	120	6	7	282
Amount	**1,042**	**201**	**168**	**1,007**	**107**	**146**	**2,671**

Joint inspection with Kluang Local Council at Kluang, Johor and IPD Kluang, Johor

Enforcement actions were taken against the following offences:

- Unregistered/unlicensed and poorly maintained piped gas and electrical installations
- Electrical contractors not registered with the Energy Commission and unsafe wiring installations
- Electrical equipment not approved by the Energy Commission and without the SIRIM-ST label
- Tampering of electric meters, billing and inaccuracy issues
- No Electrical Power Manager for installations that require energy exceeding 3 million kWh in a 6-month period
- No Competent Person appointed to conduct electrical tasks
- Electricity theft or fraudulent use of electricity and
- Using, managing, and supplying electricity without a license issued by the Energy Commission

INSPECTION OF DIGITAL METERS IN CONSUMER PREMISES

The accuracy of electric meters in the premises of consumers is monitored to ensure the meters are functioning properly and accurately as stipulated in sub-regulation 12 (2) Licensee Supply Regulations 1990, with an allowed accuracy range of 3%. The Energy Commission has performed inspection and tests since 2012. Utility companies are urged to immediately replace all digital meters that function outside the allowable range.

INSPECTION OF CONSUMERS' PRECISION ELECTRIC METERS, 2012-2014

Year	Number of Inspected Premises	Meter Precision in the Allowed Range (3%)	Meter Precision out of the Allowed Range (More Than 3%)		Damaged Meters
			(+ve)	(-ve)	
2012	214	204	2	8	0
2013	914	844	29	34	7
2014	1,039	938	12	83	6

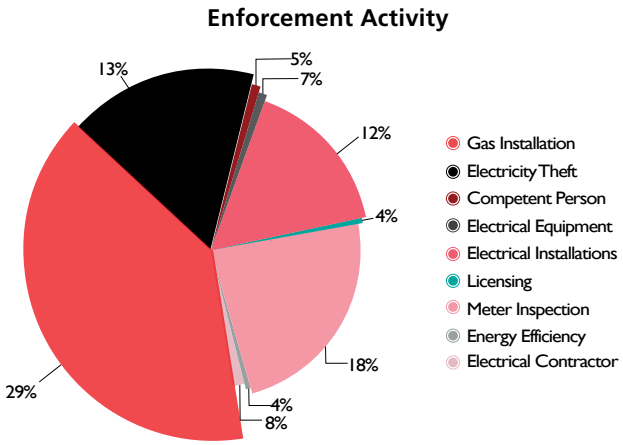
MONITORING OF ENERGY EFFICIENCY COMPLIANCE

118 visits were conducted to enforce EMEER 2008. The aim of the visits was to increase compliance on the importance of appointing an EEM for installations as stipulated in the EMEER 2008.

The Energy Commission also conducted visits to retail premises, supermarkets and shopping malls to monitor their compliance towards the MEPS criteria and energy efficiency labelling. 20 visits were conducted throughout the year 2014.

ENFORCEMENT

673 enforcement activities were conducted.



ELECTRICAL EQUIPMENT

The Energy Commission instructed that equipment that does not comply with the regulations as stipulated under Regulation 101 (2), *Electricity Regulations 1994* be confiscated and destroyed. Two confiscation operations were made when premises failed to comply with the issued notices.

Two Investigation Papers were opened for cases that failed to comply with Regulations 97 and 98, *Electricity Regulations 1990*. For the two operations that involved confiscations, the estimated market value for the seized equipment was RM55,041.

Energy Commission officers sorting confiscated items according to type of equipment

Inspection by an Enforcement Officer from the Energy Commission in an electrical warehouse

FRAUDULENT USE OF ELECTRICITY

82 premises under suspicion of fraudulent use of electricity were inspected. Of the 82, 10 were large power consumers (LPCs) while the rest were ordinary power consumers (OPCs). Operations that affected the OPCs increased significantly from previous years as the Energy Commission launched an integrated operation with an organisation under the Ministry of Federal Territories to curb illegal activities (OPS BAH) that involved high-risk areas in Kuala Lumpur.

Based on complaints about the ice production industry in electricity theft activities, the Energy Commission conducted inspections on several ice factories by taking data on average electricity usage. The data acts as a benchmark to estimate the electricity consumption and can be used as a method for early detection to determine whether the premises are involved in electricity theft.

COMPETENT PERSON

From the competent control enforcement activity in 33 premises, it was found that nine premises do not have Competent Persons. Most of the premises monitored were aware of the requirements under the law, that is Section 23 of the Electricity Supply Act 1990 and Regulations 60-70, 110-113 *Electricity Regulations 1994.*

An officer from the Energy Commission investigating an irregular electricity meter reading case

The Energy Commission's inspection of Competent Persons and electrical contractors in a construction site in Putrajaya

The Energy Commission, police and TNB in the OPS BAH work together to inspect and enter one of the premises suspected of committing an offence

Unsafe wiring in a temporary installation at a construction site

GAS INSTALLATION

The inspection of 198 premises in Peninsular Malaysia and Sabah aims to ensure that piped gas systems are registered with the Energy Commission and are well-maintained. Following the inspections, the Energy Commission issued 173 repair notices to the building management.

An unlocked storage room for LPG cylinders, exposing people to danger

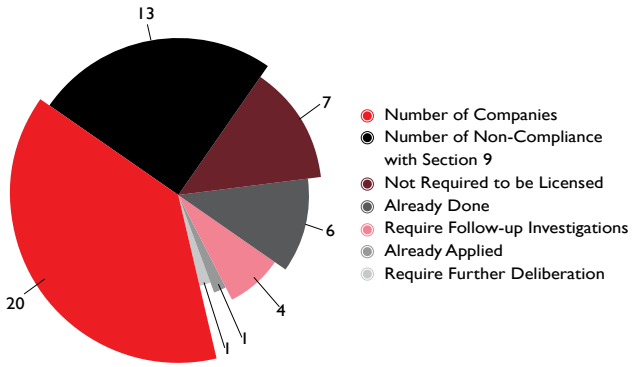
Neglected gas installation

LICENSING

In 2014, enforcement visits focused on premises suspected of not having public distribution licences to conduct electricity buying or distribution activities. The focus of enforcement was private universities and student accommodations.

20 premises were inspected and it was found that 13 of them did not comply with Section 9 of the *Electricity Supply Act*. As a result, the Energy Commission issued a notice of non-compliance. However, no investigation papers were opened as they complied with the notice demand.

Enforcement and Follow-up Actions

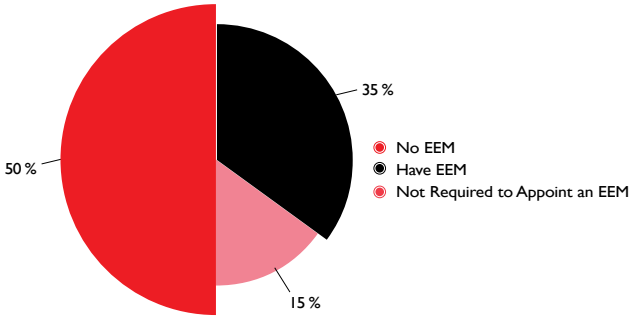


ELECTRICAL ENERGY MANAGERS (EEM)

Based on the results of enforcement activities at 27 premises, 16 premises had no EEM. Many premises have difficulty complying with the EMEER 2008 because of the following reasons:

i. Premises are not aware of the gazetted EMEER 2008
ii. Premises do not receive the notices issued by the Energy Commission on the EMEER 2008 and
iii. Premises have been closed down or moved

Results of Inspections of Electrical Installations for the Requirement to Appoint an EEM



ELECTRICAL INSTALLATION

70 premises were inspected for electrical installation registration and of that, 51 properties have a valid Registration Certification from the Energy Commission. Other than that, 14 premises did not have any Registration Certification while the other five did not renew their Registration Certification for electrical installation.

In ensuring the safety of high-risk installations, inspection activities were focused on public places such as recreational parks and shopping malls. 10 locations were randomly selected for inspection and two of them were found to have unsafe electrical installation.

Inspection of Competent Persons and electrical installation activities at Taman Botani, Shah Alam

Inspection of generation installation by officers of the Energy Commission

INVESTIGATION AND PROSECUTION

INVESTIGATION

The Energy Commission opened 41 Investigation Papers in response to non-compliance with laws under the *Electricity Supply Act 1990, Gas Supply Act 1993* and the subsidiary regulations. Out of the total, 34% are electricity theft cases, 49% are electrical accident cases and the remaining were equipment incidents, installation and others. The number of reported electrical accidents increased by 39.13% compared to 2013.

Investigation Papers Opened

Investigation Paper Category	2013	2014
Electrical accident cases	29	20
Electrical installations	4	2
Electrical equipment	3	3
Fraudulent use of electricity	20	14
Disruption in electricity supply	2	1
Gas supply without licence	1	0
Electrical contractors	1	1
Gas accidents	1	0

PROSECUTION AND COMPOUNDING

Five cases of the fraudulent use of electricity were charged in court and out of that, four cases were convicted. The court imposed a fine of RM162,000.

Companies Charged in Court

Defendant	Type of Offence	Ruling
Ngan Kiu Yieng	Fraudulent use of electricity under Section 37(3)(e) ESA 1990.	Fine of RM6,000 or 1 week imprisonment for every charge by the Sessions Court of Kota Kinabalu, Sabah
LB Aluminium Berhad	Fraudulent use of electricity under Section 37(3)(e) ESA 1990.	Fine of RM35,000 by the Sessions Court of Kajang, Selangor
Rank Metal Sdn. Bhd.	Fraudulent use of electricity under Section 37(3)(e) ESA 1990.	Fine of RM35,000 by the Sessions Court of Kajang, Selangor
WRP Asia Pacific Sdn. Bhd.	Fraudulent use of electricity under Section 37(3)(e) ESA 1990.	OKS is found not guilty. An appeal was filed by the Deputy Public Prosecutor.
AWP Enterprise (M) Sdn. Bhd.	Fraudulent use of electricity under Section 37(3)(e) ESA 1990.	A fine of RM80,000 by the Sessions Court of Ampang

CANCELLATION AND SUSPENSION OF COMPETENCY CERTIFICATION

The Energy Commission suspended the Competency Certification of two Competent Persons involved in a fatal electrical accident case while on duty. Investigations indicated that both Competent Persons breached several clauses under sub-regulation 59 (4) of the Electricity Regulations 1994 and the stipulations under other laws related to safe work practices.

As a result, actions have been taken against these Competent Persons under the sub-regulation 59 (4) of the Electricity Regulations 1994, for the act of wrongdoing which caused electrical accidents.

Suspension of Competency Certification Following Fatal Electrical Accidents in Kg Melayu Subang, Shah Alam, Selangor

Name	Certification	Ruling
Mohd Nizam Bin Baharom	PJ-T-6-H-0839-2001 (Chargeman)	Suspended for 1 year
Shariman Bin Shammim	PJ-T-2-H-0017-2005 (Chargeman)	Suspended for 1 year

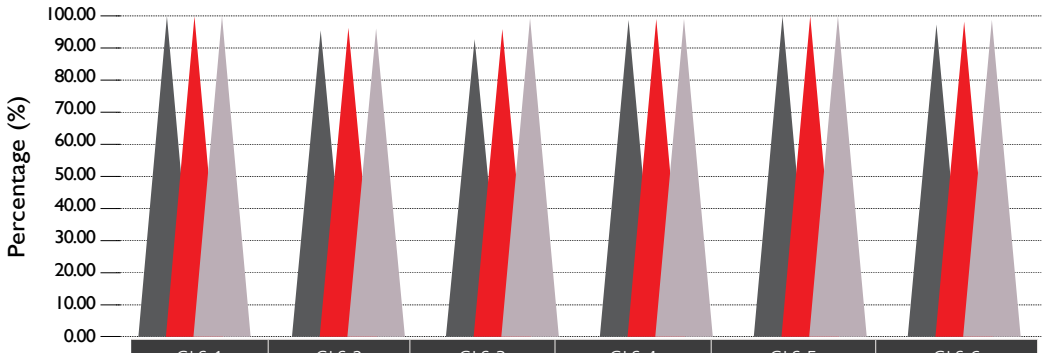
MONITORING OF SUPPLY AND SERVICE QUALITY

MONITORING OF THE ENFORCEMENT FOR GUARANTEED SERVICE LEVEL (GSL) AND MINIMUM SERVICE LEVEL (MSL)

It was agreed by the Ministry of Energy, Green Technology and Water that the enforcement of TNB Electricity Supply Service Standard would begin from 1 January 2012. However, only GSL 3, GSL 4 and GSL 5 that were enforced while the enforcement for GSL 1 and GSL 2 was postponed until Corporate Geospatial Information System (CGIS) was completed. Despite that, the monitoring on GSL 1 and GSL 2 was still performed from time to time to ensure TNB does what it takes to enhance their performance.

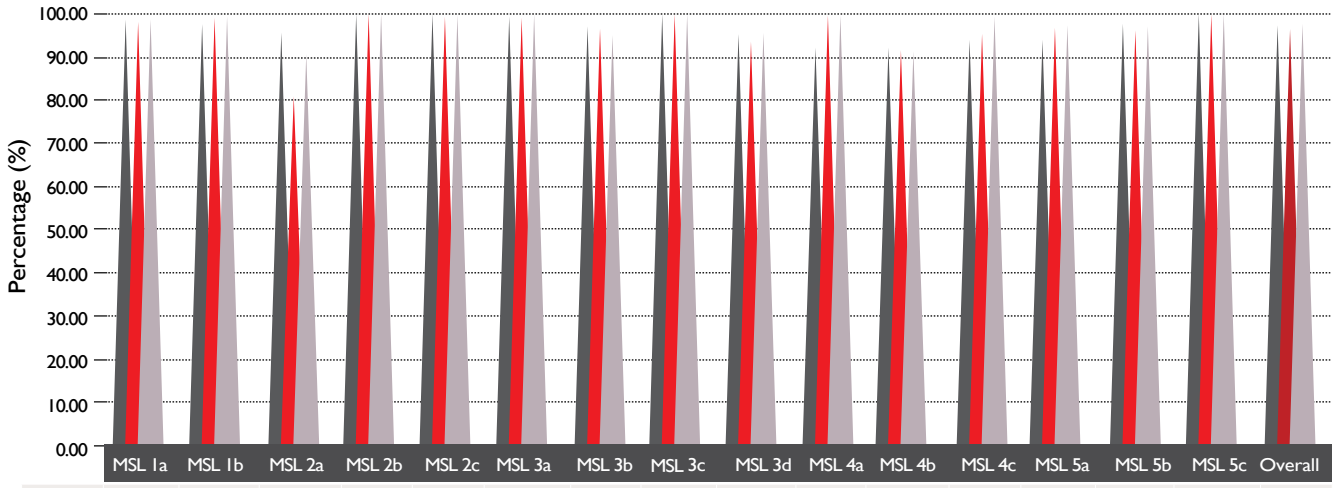
The GSL showed improvement from 98.29% (2013) to 98.98% in 2014.

GSL Achievement Progress, 2012 - 2014



	GLS 1	GLS 2	GLS 3	GLS 4	GLS 5	GLS 6
▲ 2012	100.00	95.79	92.72	98.87	100.00	97.48
▲ 2013	100.00	96.30	96.01	99.15	100.00	98.29
▲ 2014	99.99	96.21	99.55	99.16	100.00	98.98

MSL Achievement Progress, 2012-2014



	MSL 1a	MSL 1b	MSL 2a	MSL 2b	MSL 2c	MSL 3a	MSL 3b	MSL 3c	MSL 3d	MSL 4a	MSL 4b	MSL 4c	MSL 5a	MSL 5b	MSL 5c	Overall
▲ 2012	98.60	97.53	95.52	100.00	100.00	99.15	97.06	100.00	95.19	91.95	91.95	93.67	93.85	97.54	99.99	97.19
▲ 2013	98.12	98.91	80.63	100.00	99.20	99.03	96.33	100.00	93.50	99.61	91.59	95.11	96.81	96.05	100.00	96.33
▲ 2014	98.31	99.42	90.48	100.00	99.54	99.94	94.82	100.00	95.53	99.43	91.10	99.40	97.17	97.07	99.99	97.48

Even though there were cases involving non-compliance with GSL, no consumers made any claim. The Energy Commission then held a series of six GSL and MSL briefings to spread awareness on GSL and MSL.

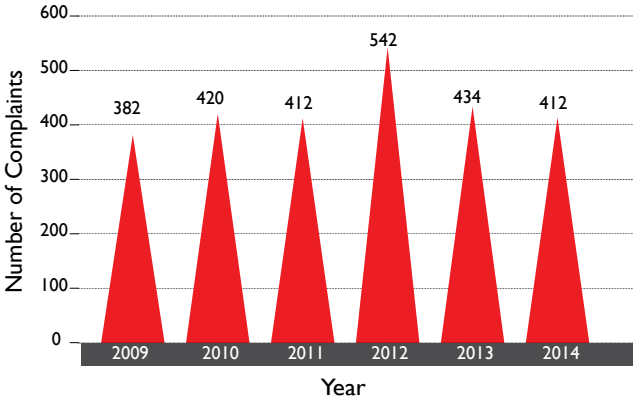
TNB Electricity Supply Service Standard will be reviewed every two years or whenever it is deemed needed. After it was enforced in 2012, the Energy Commission and TNB held several series of deliberations on TNB Electricity Supply Service Standard while taking into account the changes and improvement in TNB working procedure and current development.

MANAGEMENT OF COMPLAINTS ON SUPPLY AND UTILITY SERVICE

COMPLAINTS TO THE ENERGY COMMISSION

412 complaints were received in 2014, a decline by 5% compared to 434 complaints in 2013. The decline is due to the periodic enforcement and monitoring performed by the Energy Commission.

Complaints Received, 2009-2014



COMPLAINTS ACCORDING TO CATEGORY

Category	2013	2014
Electricity Supply	232	216
Quality of Electricity Supply	14	17
Electrical Equipment	25	34
Electrical Installation	101	88
Electrical Competency	31	19
Electrical Contractor	18	19
Gas Competency and Supply	6	2
Energy Management	1	1
Others	6	16
Total	**434**	**412**

The highest number of complaints received are in the category of electricity supply (52%) followed by electrical installation (21%). The complaints on electricity supply showed a decline by 7% in 2014 from 232 complaints to 216 complaints in 2013.

11 complaints were resolved, two complaints are still under investigation, while another two are awaiting further action. The complaint status 'under investigation' requires a follow-up inspection by SIRIM on a sample or product unit such as Type Test Report, evidence of ST-SIRIM label buying and Approval Certification. The complaint status 'awaiting action' are the recently received complaints that are still under investigation.

ENHANCING REGULATORY FRAMEWORK AND ORGANISATIONAL COMPETENCY

AMENDMENTS TO ACT AND REGULATIONS

The Energy Commission strives to improve the legal framework to enhance the effectiveness of technical and economic regulatory activities in the gas and electricity supply industry.

The following are the amendments undergoing the enactment process:

a. Regulation of Third Party Access System in the Gas Supply Industry;

   i. Proposed amendments to the Gas Supply Act 1993;
   ii. Preparation of the Code, Guidelines and Tariff Structure for the Implementation of Third Party Access System; and
   iii. Proposed Amendments to the Gas Supply Regulations 1997.

b. Legal Framework for ESCO Registration

   i. Proposed Amendments to the *Efficient Electricity Management Regulations 2008*.

c. Regulation of the electricity and gas supply industry

   i. Proposed Amendments to the *Electricity Supply Act 1990*
   ii. Proposed Amendments to the *Gas Supply Act 1993;*
   iii. Proposed Amendments to the *Electricity Regulations 1994*;
   iv. Proposed Amendments to the *Gas Supply Regulations 1997;* and
   v. Proposed Amendments to the *Licensee Supply Regulations 1990*

The following are the approved amendments:

   i. Amendments to the *Electricity Regulations 1994* for fee increments (gazetted on 14 March 2014);
   ii. Amendments to the *Gas Supply Regulations 1997* for fee increments (gazetted on 2 December 2014 and will be enforced in 2016)

FRAMEWORK OF ELECTRICITY REGULATION

AMENDMENTS TO THE ELECTRICITY AND LICENSEE SUPPLY REGULATIONS

The amendments are made to update the regulations in line with the amendments on the *Electricity Supply Act 1990.*

For *Electricity Regulations 1994*, the Energy Commission has amended it as follows:

i. Part III, Rule 10, for Public Installation Fees, other than the generation referred to in subrule (2); namely fee rates which have been increased by 10%; and
ii. Part IIIA, Rule 10, [subrule 10(2)], for Public Installation Fees for electricity generation that uses biomass, biogas, hydro power, solar power, heat power, wind power, waves and tides with a power aggregate not exceeding 5 megawatts.

The Energy Commission is also reviewing the proposed amendments to the *Licensee Supply Regulations 1990* to ensure that the licensees comply with the required standards. Several new regulations are also being proposed to be included in the *Licensee Supply Regulation* to further explain electricity supply procedures and technical requirements, such as:

i. System of Supply
ii. Registration of Supply
iii. Licensees' obligation to supply and ensure the installation's safety
iv. Supply period for licensees
v. Prepaid meters

GUIDELINES ON PROCEDURES FOR LICENSEES TO CLAIM COMPENSATION FROM CASES INVOLVING FRAUDULENT USE OF ELECTRICITY

In line with its role to enforce the laws and regulations of the *Electricity Supply Act 1990* especially in terms of electricity theft, the Energy Commission has published a set of guidelines titled *Compensation Claiming Procedures for Licensees for Cases Involving Fraudulent Use of Electricity.* This guideline is a reference for licensees to recover their losses in a more organised manner.

These guidelines are part of the Energy Commission's efforts to manage fraudulent use of electricity, and reduce the losses and expenses that the licensees may have to bear. It is important that the guidelines are implemented according to clear, organised and detailed procedures to ensure that the actions taken can be executed effectively.

With the establishment of the guidelines, license holders in Peninsular Malaysia, Sabah and Labuan are required to comply with all the procedures under the claim compensation process, as stipulated by Section 38 of the *Electricity Supply Act 1990*, for the offence under subsection 37(1), 37(3) and 37(14) in the same Act. This guideline was made mandatory on 1 June 2014 and explains the following issues:

i. Provision under the *Electricity Supply Act 1990* which allows licensees to make claims
ii. Provision under the *Electricity Supply Act 1990* which allows licensees to cut electricityl supply
iii. Operating procedures before claims are made
iv. Claim calculation methods

GUIDELINES ON ELECTRICITY METERS

The first electricity meter guideline titled *Guideline for Electricity Meter: Approval, Testing and Initial Verification Requirements* was produced in 2014. Up to December 2014, 33 electricity meters, produced by 9 electricity meter manufacturing and supply companies, have been accredited.

To further strengthen the electricity meter regulating framework, a working group chaired by the Energy Commission with members that include the Ministry of Domestic Trade, Co-operatives and Consumerism; the National Metrology Laboratory; SIRIM Berhad; SIRIM QAS International; and TNB have developed other protocols for electricity meters, called the *Guideline for Electricity Meter: In Service Testing*. The guideline provides information on how to test installed electricity meters.

The main principles of the guidelines include:

i. Classifying the electricity meters according to population
ii. Obtaining the test results samples of the installed meters
iii. Analysing test results in terms of statistics
iv. Making evaluation on whether a meter is functional or should be replaced

The full implementation of the guidelines for installed meters will be in 2015.

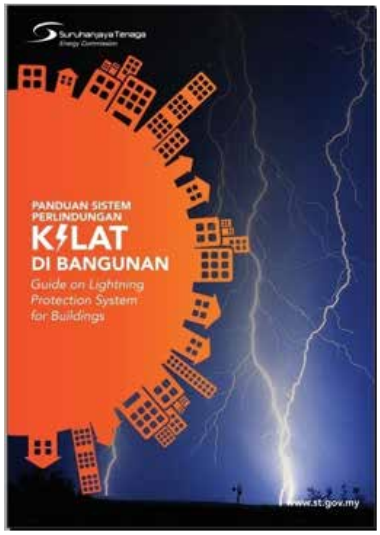
A portable tester used to test the accuracy of electricity meters on consumers' premises

GUIDELINES FOR LIGHTNING PROTECTION SYSTEM IN BUILDINGS

Complaints about lightning protection systems in buildings were submitted to the Ministry of Science, Technology and Innovation in 2009. In September 2011, after a discussion with all parties involved, the Energy Commission issued a circular, Pekeliling Suruhanjaya Tenaga Bil 3/2011, explaining how to install lightning protection systems in buildings.

In December 2014, the Energy Commission published a guidebook about lightning protection systems in buildings that aimed:

i. To increase the knowledge of electrical engineers on the MS IEC 62305 standard
ii. To increase the knowledge of building owners in deciding the type and specifications of lightning protection systems to install
iii. To make it easier for consumers to decide which systems offered by consultants and suppliers meet the standard requirements, where the system is able to protect buildings and appliances from direct/indirect dangers of lightning



iv. To reduce the number of injuries or losses of property, equipment, services and livestock due to lightning.

AMENDMENTS ON POWER QUALITY STANDARDS

Issues pertaining to power quality that were raised by the American Malaysian Chamber of Commerce (AMCHAM) have been discussed in a series of meetings, conducted every quarter of the year. The Energy Commission chaired these meetings, and its members include AMCHAM, Malaysian Investment Development Authority (MIDA), Malaysian Productivity Corporation (MPC) and TNB.

Through these meetings, the issues were discussed and resolved. In addition, TNB explained the reason for the voltage sag incidents that occurred.

Several initiatives have been implemented to increase the power quality in Malaysia. One of the initiatives includes a proposal to the Ministry of Finance to replace the existing Accelerated Capital Allowance incentive with the new Investment Tax Allowance (ITA) for companies that install power-quality controlling devices. The technical criterion to be qualified for ITA was brought forward to the MOF in June 2014.

The Energy Commission has also continuously monitored reports of power quality incidents from TNB to the industry, with the reports for each voltage sag incident issued to the companies involved within 14 days from the receiving date. TNB also has to send a monthly report to the Energy Commission on the performance of power quality in the Peninsula, as well as the Power Quality Map (which is the SARFI Index) for every state.

954 voltage sag incidents have been recorded by TNB. The number of cases has declined from 2013, which had 965 voltage sag incidents. The evaluation of the Electromagnetic Compatibility (EMC) level for all recorded voltage sag incidents in 2013, based on the MS IEC 61000-4-35 (Class 3) standard, was executed by TNB. Of the total incidents, 73% are above the immunity level, while 27% are below the immunity level.

Results from the Power Quality Baseline Study for Peninsular Malaysia suggested that amendments should be made to the MS IEC 61000-4-34 and MS IEC 61000-4-11 voltage sag standards. The amendments for MS IEC 61000-4-34 have been brought forward to the Industry Standard Committee for Generation, Transmission and Distribution (ISCE) for approval, while the amendments for MS IEC 61000-4-11 will be discussed in 2015.

THIRD PARTY ACCESS SYSTEM REGULATION

The third party access system was introduced to ensure the continuity of natural gas supply and to accelerate the growth of the gas industry in Malaysia. It will create competition among natural gas suppliers by allowing entities other than existing ones to import LNG through LNG regasification terminal facilities, and distribute the gas through the pipeline transmission system and supply consumers.

The Energy Commission has prepared a regulatory framework to amend the Gas Supply Act 1993 and the relevant regulations, as well as to develop codes and guidelines to ensure that the third party access system is implemented smoothly and effectively. The proposed amendment is currently awaiting action by the Energy Commission, the Economic Planning Unit and the Attorney General's Chamber of Malaysia.

CODE PREPARATION FOR THE IMPLEMENTATION OF THE THIRDPARTY ACCESS SYSTEM

Three codes have been prepared to implement the third party access system in Malaysia. In addition to the *Gas Supply Act 1993*, these access codes will be the main anchors for the regulatory framework. The codes are as follows:

i. Third Party Access Code for Malaysian Regasification Terminal
ii. Third Party Access Code for Malaysian Transmission Pipeline
iii. Third Party Access Code for Malaysian Distribution Pipeline

The codes have been developed with the following approaches:

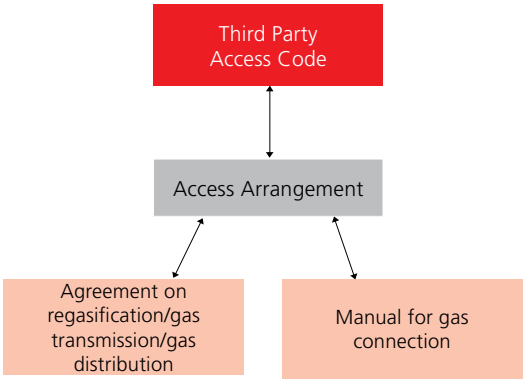
i. In reference with the proposed amendment draft of the *Gas Supply Act 1993*
ii. In comparison with the third party access system in other countries to ensure the best practices

The objectives of the codes are as follows:

i. To encourage the development of a competitive gas market with uniform principles for owners, operators and users of regasification terminals, and transmission and gas distribution pipelines
ii. To ensure transparency, fairness and non-discriminatory actions in the use of regasification terminals, transmission and distribution pipelines
iii. To prevent the fraudulent use of dominant influence and anti-competition practices
iv. To ensure a continuous gas supply.

Every code contains the main concept and principles related to the third party access that needs to be observed by owners, operators and users of regasification terminals, gas pipeline transmission and gas pipeline distribution.

The summarised structure under the third party access system is as follows:



Explanation regarding the basic principles of Access Arrangement for the use of the infrastructure including regasification terminal, gas transmission pipeline and gas distribution pipeline comprises:

i. The need for owners/operators to provide an Access Management document that explains in detail the services provided by each type of infrastructure (regasification terminal, transmission or distribution pipeline), its procedures, terms and conditions
ii. The need for the owners/operators to provide the licensed services, such as regasification, gas transmission and distribution, as well as to provide information about the responsibilities of owners/operators and users. Several basic principles are applied for the basic access

services namely capacity allocation mechanism, use-it-or-lose-it, transfer of reserved firm capacity, sub-letting, open season and others.

iii. The need for owners and operators to provide a Metering Philosophy to explain the procedures involved in measuring the amount of gas supplied and used.

iv. The need for owners and operators to ensure that the gas/LNG that goes through the infrastructure meets the specification mentioned in the Access Arrangement document.

v. The need for owners and operators to provide a gas/LNG management planning procedure such as daily gas supply management in normal situations or vice versa.

vi. The need for owners/operators to provide a gas/LNG balance mechanism to ensure the stability of terminal regasification, and gas transmission or distribution pipeline.

vii. The need for operators to provide service tariffs based on the tariff structure provided by the Energy Commission.

viii. The need for owners and operators to provide annual maintenance schedules. Meanwhile, unscheduled maintenance can be done with consideration of the owners and operators.

AMENDMENTS TO THE GAS SUPPLY REGULATIONS 1997

The fee amendments for the *Gas Supply Regulations 1997* was gazetted on 2 December 2014 and will be enforced starting 1 January 2016. The principles in the fee amendments are as follows:

i. Fee increment of 10% involving Gas Licensing Fee;

ii. Fee increment to initial rate before the amendments in 2001, following instructions by The National Economic Action Council due to the Asian financial crisis. This amendment involved fees for Private Gas Licensing, Examination on Installation, Competency Accreditation, Gas Contractor, Gas Equipment and Appliances; and

iii. Introduction of a new fee to process the Approval to Install and Approval to Operate.

DEVELOPMENT OF THE ENERGY COMMISSION'S ORGANISATIONAL COMPETENCY

HUMAN CAPITAL DEVELOPMENT

LEVERAGING CAPACITY AND ORGANISATIONAL COMPETENCY

A review of the organisation structure has been implemented to evaluate the relevance of the existing structure to enable the Energy Commission to continue giving its best as a regulatory body.

As a result of the review, the organisation structure has been amended through the strengthening of several departments and staff exchanges. In addition, a unit has been removed while three new units have been created; Development and Training Unit, New Projects Unit and Investigation Unit. The new organisational structure will be enforced starting 1 January 2015.

Recruitment of new personnel continued in 2014 with the appointment of 13 staff (lower management executives), 3 staff (non-executive) and 2 staff (middle management). At the same time, two promotions were made to fill in two positions in the middle-level management.

INCREASING HIGH PERFORMANCE WORK CULTURE

The annual evaluation of staff performance has started to be fully implemented through the e-PMS online system since 2013. The e-PMS module underwent improvement in 2014.

The improvements that were made included amendments to the behavioural competency aspect and discipline aspect to make it more detailed. This system is also used for the 2014 performance evaluation for all staff members.

Through this system, the staff are evaluated according to 3 Key Performance Index (KPI) aspects: skills, knowledge and ability, and discipline. At the end of 2014, 54 of 71 KPI that were set recorded an achievement of 80% and above, reflecting a high staff performance.

Staff Skills And Competency Development

Focus on improving staff members' basic competency continued in 2014. In an effort to increase their abilities and competencies, the Energy Commission's staff participated in training development programmes encompassing the legal field, regulatory process, technical aspects, as well as grooming and appearances. These were followed by courses in the operation of power stations, financial procedures, computer applications, public relations, administrations, driving techniques and others.

To ease the application process for the training programme, an online module has also been set up in the e-Human Resource Management System. This enables the training record of every staff to be seen and accessed by the staff themselves in real time. These training and development modules are targeted to be available beginning 2015.

Capacity Development Programme For The Implementation Of The Third Party Access System

In an effort to strengthen the existing capacity in exercising their responsibility to regulate the Third Party Access System, the Energy Commission organised a technical visit to the Virtual Pipeline System (VPS), which was developed by Sabah Energy Corporation in Sabah. The aim of the visit was to provide exposure and increase the knowledge of the officers on the VPS network, to help them determine the scope of issue in the amendments of the *Gas Supply Act 1993*.

VPS is a gas distribution innovation to overcome the distance and land surface issues that restrict the ability of infrastructure to reach natural gas consumers in Sabah.

INTERNAL PROCESS DEVELOPMENT

In 2014, an e-Leave system was developed for the employees to apply for leave online. At the same time, this system allows both the staff and the manager to access the leave record in real time. The first phase, which enables employees to apply for leave online, was implemented in 2014. The second phase for the other types of leave, such as sick leave, is under development and is expected to start in 2015.

The Energy Commission has also improved the procurement process by developing related documents with the purpose of detailing the existing procurement process and ensuring that they are all uniform. The documents involved include procurement manuals and guidelines on the technical evaluation of tender procurement and quotations.

The Energy Commission has also developed a project and budget monitoring system. This system enables observing project implementations using the provided dashboard and relevant reports. It also allows the monitoring of revenue and annual budget spending.

SERVICE DELIVERY

E-PAYMENT

The Energy Commission will soon launch a payment receiving method for the e-Gas and e-Electricity application through the Online Application System (OAS). Consumers can pay directly via the internet by accessing the OAS system at http://oas.st.gov.my and thus check the payment required for the submitted application.

This online payment is available daily from 1:00 am to 12:00 midnight. Consumers can conduct payments using individual or company accounts for CIMB, Maybank, Bank Islam, RHB, Hong Leong Bank and Public Bank.

REGISTRATION OF ELECTRICAL CONTRACTORS

The Energy Commission Operating System (ECOS) provides services such as registration of electrical contractors, registration of electrical installation, licensing for private installation, registration for electrical competent person, registration for electrical competency examination and PTE registration via the internet. With this ECOS system, applications can be processed in a faster and more efficient manner.

Besides this, applicants no longer need to attach supporting documents. Applicants only need to make an online acknowledgement indicating their compliance with all terms and conditions. If required by the Energy Commission, applicants will be contacted to submit the necessary documents to complete processing. This system will start operating in the middle of 2015.

e-DIK - IMPORTER AND MANUFACTURER REGISTRATION SYSTEM

The e-Dik System (Registered Importer and Manufacturer) was developed so that importers and manufacturers can register with the Energy Commission to obtain a Certification of Registration (COR). Prior to this, applications were performed manually. This system can be browsed at the following link: http://edik.st.gov.my.

e-TER - TECHNICAL EVALUATION REPORT SYSTEM

The Energy Commission has developed an e-TER system for SIRIM to implement an online evaluation for online Approval Certification registrations. This system, which was launched in December 2013, integrates with e-Kelengkapan, Kastam Information System and E-Permit. Complaints by applicants on the failure of the e-TER system have also declined and are almost at zero.

ENHANCING BILATERAL RELATIONS AND COOPERATION

JOINT SECTORAL COMMITTEE FOR ELECTRICAL AND ELECTRONIC EQUIPMENT (JSC EEE)

The Energy Commission attended two ASEAN level JSC EEE meetings in 2014. The 17th meeting was held in Yangon, Myanmar while the 18th meeting was held in Manila, Philippines. The meetings were attended by representatives from Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Vietnam and the ASEAN secretariat.

VISITS FROM OVERSEAS AGENCIES

The Energy Commission received visits from public and private organisations from abroad, who came to learn about the Energy Commission's roles as a regulatory body for the piped gas and electricity supply industry in the power sector, as well as explore the energy-efficient elements in the Diamond Building.

Among the overseas visits received by the Energy Commission include the Energy Commission of Ghana on 15 August, Dutch delegates on 9 September, representatives from the Ministry and Perusahaan Listrik Negara Indonesia on 11 September and Isolux Corsan, Spain on 3 December.

INCREASING AWARENESS, COOPERATION AND GOOD PRACTICES

INTENSIFYING OUTREACH PROGRAMMES

For the purpose of directly disseminating information and enhancing service quality, the Energy Commission has implemented outreach programmes that help increase awareness among members of the community about electrical safety in residential buildings and business premises. The Energy Commission also highlighted safety and efficiency in the use of piped gas and electricity by the public.

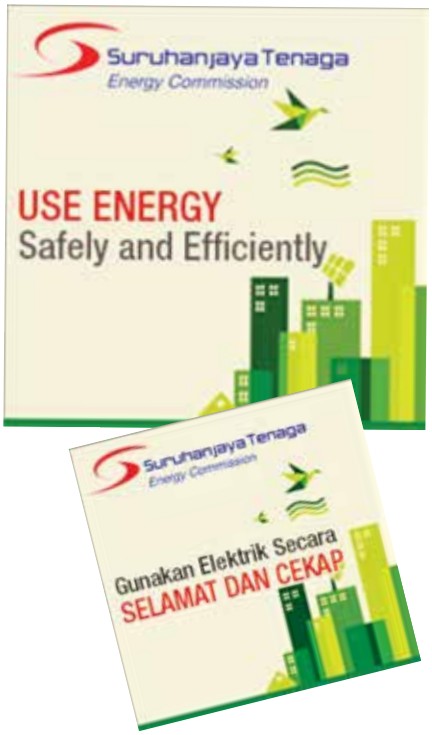
COMMUNICATION AND PUBLIC INVOLVEMENT

PROMOTION ON MASS MEDIA

In 2014, the Energy Commission broadcasted more than 600 public service announcements on electrical safety and gas, energy efficiency, latest tariffs, utility service quality and news from the energy sector through a number of major media outlets. These include Rangkaian Televisyen Malaysia (TV1 and TV2), Media Prima (TV3, 8TV and TV9) and local radio stations such as ERA FM, Radio BERNAMA, IKIM FM and BFM Radio.

In addition to electronic media, the Energy Commission has used print media to enhance awareness about electrical safety, enforcement and information about the energy industry. The print advertorials include information such as the test of Residual Current Devices for the public, electrical safety during floods, and energy-efficient electrical equipment.

The Energy Commission have also appeared on a number of talk shows such as *A-La Carte Pagi* on NTV7 and on the BERNAMA radio station. In addition, for the first time in 2014, the Energy Commission embraced online media and enhanced its branding via BERNAMA and *The Star* online portals.



A DAY WITH CONSUMERS: SEMINARS AND WORKSHOPS

Five one-day programmes with the consumers were held in Pulau Langkawi, Kedah, Malacca, Sabah and Selangor.

The Energy Commission collaborated and interacted with stakeholders through continuous briefings, trainings, seminars and dialogue sessions encompassing many target-audience categories, such as licensees, industry players, local authorities, associations and students.

Number of Seminars and Dialogues

State	Seminar	Dialogue	Total
Perlis	1	0	1
Kedah	3	2	5
Pulau Pinang	2	2	4
Perak	10	10	20
Selangor	3	1	4
Federal Territories of Kuala Lumpur and Putrajaya	1	2	3
Negeri Sembilan	2	1	3
Malacca	5	3	8
Johor	7	9	16
Kelantan	8	3	11
Terengganu	4	2	6
Pahang	8	17	25
Sabah	16	9	25
Total	70	61	131

CAMPAIGN, SEMINAR AND DIALOGUE

The Energy Commission organised a number of campaigns, seminars and dialogues aiming to:

i. Increase awareness and understanding among electricity consumers on the significance of complying with the related rules and regulations;
ii. Educate the public on the roles and responsibilities of the Energy Commission;
iii. Update the public about the latest developments and announcements;
iv. Provide opportunities for consumers to give feedback, file complaints or bring proposals forward;
v. Formulate action plans to enhance service quality

In total, 70 seminars and 61 dialogues have been held with industry players, such as installation owners, contractors, local authorities and utility companies.

Smart Energy Seminar organised by the Energy Commission's office in Pulau Pinang, Kedah and Perlis

Smart Energy Seminar organised by the Energy Commission's office in Selangor, Kuala Lumpur and Putrajaya

Gas Supply and Safety Seminar at the Sultan Ahmad Shah International Convention Centre, Pahang

Electrical Safety Briefing at Sekolah Menengah Kebangsaan Pulau Pangkor, Perak

Electrical Safety Briefing at Kolej Vokasional Slim River, Perak

The Energy Commission organised an online seminar, *TENAGA 2014 WEBINAR*, with United Business Media (M) Sdn Bhd on 11 March 2014 at the Energy Commission headquarters. More than 100 invitees from the electricity supply industry from around the world watched the webinar's live broadcast. With the theme *Sustainability Development Through Energy Efficiency and Energy Management Initiatives in Malaysia*, the webinar discussed issues related to current development and future planning for the continuity of energy supply through energy efficiency, as well as identifying industry challenges and the best solutions for the problems identified.

ST continued to be active in public awareness programmes by participating in relevant exhibitions, including international exhibitions such as the *Asian Utility Week 2014*, *Ecobuild South East Asia 2014 and International Construction Week 2014*. The objective was to promote awareness on the duty of the Energy Commission as a regulatory agency for electrical and piped gas safety in Malaysia, and its role in venturing into efficient energy and water technology for offices.

Indirectly, the Energy Commission's involvement in public awareness programmes also offered the public the opportunity to refer any issues related to supply quality and electrical and piped gas safety to the Energy Commission.

ENERGY CONSULTATIVE PANEL

To date, every Panel of Energy Consultation meeting has received good response as the agenda and discussion topics revolve around the latest issues in the energy sector. The meetings include the involvement of policy-makers, industry players and other stakeholders.

Among the issues discussed in the meetings are:

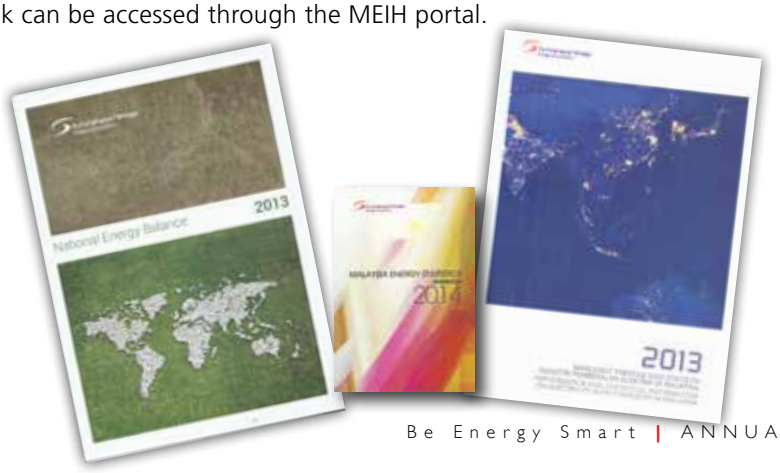
- Implementation of ICPT Mechanism in Peninsular Malaysia
- Electricity Supply and Demand Situation in Peninsular Malaysia
- ToU Tariff Proposal
- Gas Supply Situation in Peninsular Malaysia

PUBLICATIONS

For the first time, the Energy Commission published *Energy Malaysia*, a magazine for the energy sector, which emphasises the initiatives, programmes and activities undertaken by the Energy Commission to increase efficiency, safety and transparency in the Malaysian energy sector. *Energy Malaysia* plays a role in improving the bilateral relations between the Energy Commission and industry players as well as the public. The magazine has been distributed to more than 5,000 organisations, including government agencies, industry associations and non-government bodies, embassies, public and private universities, training institutions and exhibition visitors.

Four editions of Energy Malaysia published

Based on the positive feedback received on the National Energy Balance Report and their report on the *Performance and Statistics of the Electricity Supply Industry in Malaysia*, the Malaysian Energy Statistics Handbook was published in 2014. This book is an initiative to consolidate selected details from the existing publications in a smaller and refined version. The digital version of this book can be accessed through the MEIH portal.

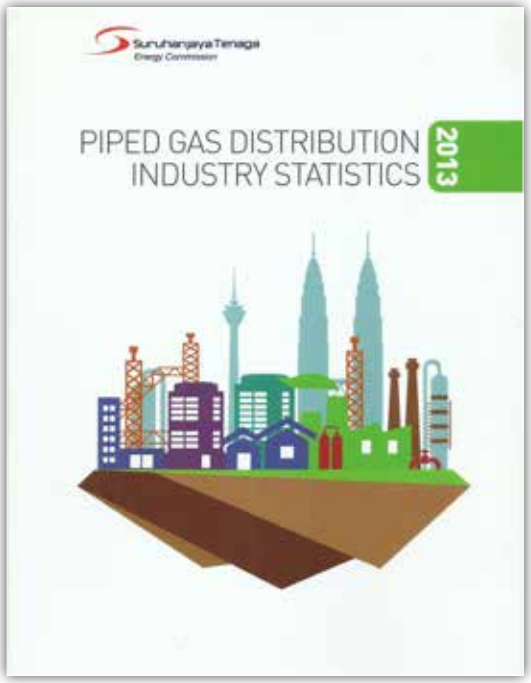


The Energy Commission also published its first *Electrical Safety Performance Report*, which aims to disseminate information to the public and increase awareness on electrical safety. The publication is targeted at government agencies and departments, the private sector, engineers, consultants, electrical contractors, Competent Personnel, manufacturers, importers and the public who are involved in the electrical energy industry in Malaysia.

The report covered the statistics on electrical accidents in Malaysia (except Sarawak) from 2002 to 2012 and the initiatives and measures undertaken to reduce these accidents. This report also aimed to increase the knowledge of its readers about electrical safety in the country.

In addition, the Energy Commission also published *Peninsular Malaysia Electricity Supply Industry Outlook 2014,* which covered the forecasted energy demand, the mechanism for establishing the electricity tariff and the latest information on the energy sector in Peninsular Malaysia. On the other hand, *Sabah Electricity Supply Industry Outlook 2014* has information on the energy demand in Sabah, generation capacity, information on fuel and long-term plans to develop the electrical industry in the state.

In 2014, the Energy Commission has also published Piped *Gas Distribution Industry Statistics 2013* that covered the statistics related to gas composition, gas supply and piped gas consumer data in Peninsular Malaysia and Sabah.



EE CHALLENGE (ENERGY EFFICIENCY CHALLENGE)

EE Challenge was organised for the first time to build awareness and inculcate energy-saving practices among students, teachers and staff members. In the beginning, the competition was only open to high schools in Selangor, Putrajaya and Kuala Lumpur.

The winners were evaluated based on the highest percentage of energy savings that they managed to achieve in the three-month period of the competition, where it was compared against the electrical consumption before the competition started. In addition, winners were evaluated based on the amount and effectiveness of the energy efficiency activities that were executed during the competition period.

The awarding ceremony was held in December 2014. The grand prize winner of the *EE Challenge 2014* was Sekolah Menengah Kebangsaan (SMK) Cheras Jaya, the runner-up was SMK Putrajaya Presint 11(1), and the second runner-up was SMK Methodist Banting.

CORPORATE SOCIAL RESPONSIBILITY

TOUCH POINT

The *Touch Point* programme is the Energy Commission's corporate social responsibility towards the local community in selected districts, and has been implemented in Keningau and Petaling Jaya. The concept of the programme involves conducting inspections at nurseries, recovery centres, elderly homes, special children's homes and places of worship, checking their wiring systems, replacing their electric protection devices and encouraging their use of energy-efficient electrical equipment.

An elderly home in Petaling Jaya, Selangor


A nursery in Keningau, Sabah

An Energy Commission officer acquires information before starting inspections

Performing electrical wiring

Energy Commission officers visit a children's home in Selangor

DONATIONS AND SPONSORSHIP

To increase corporate social responsibility, the Energy Commission has given donations and sponsorships to energy-related agencies, higher institutions, schools, non-profit organisations, media and charity homes as an initiative to support charity programmes and the local community as well as strengthen the bond within the industry.

Among the charity homes that have received donations from the Energy Commission are the Society for the Advancement of the Blind (PPOM), Golongan Orang Upaya Cacat Penglihatan, The Malaysian Association Help for the Poor and Terminally Ill and Majlis Bakti Darul Makmur Bagi Tabung Pengurusan Anak-Anak Yatim. The Energy Commission also provided school supplies for the school year 2015.

Additionally, the Energy Commission is concerned about the maintenance and conservation of the environment, reflected through their sponsorship of the *Asia-Pacific Climate Change Adaptation Forum 2014*. The Energy Commission also shared the government's efforts to reduce the greenhouse effect from the national industry sector. The Energy Commission was also involved in family functions such as the *29th Federal Territory of Kuala Lumpur Athletic Association's (FTKLAA) Family Day Anniversary 2014.*

IMPLEMENTATION OF THE ENERGY COMMISSION'S TRANSFORMATION PLAN 2010-2020

THE ENERGY COMMISSION'S TRANSFORMATION PLAN 2010-2020

The Energy Commission's Transformation Plan was developed at the end of 2009. It defined the future direction of industrial development until 2020 and underlined the implementation of high-impact initiatives under the three sub-plans for the period between 2010 and 2020. At the end of 2014, the plan was reviewed to evaluate the effectiveness of its initiatives, as well as to come up with new initiatives for the Energy Commission to achieve better performance in the future.

ECONOMIC, TECHNICAL AND SAFETY REGULATORY FRAMEWORK

There are 36 initiatives under the first sub-plan. From the list of initiatives targeted until 2014, 70% have been implemented while 25% is still undergoing the process of implementation. Two initiatives have not been implemented as they are subject to the government policy on the liberalisation of the electricity supply industry. Among the initiatives that are undergoing the process of implementation until the end of 2014 were the legal and regulatory framework for open access on gas network, expected to be approved by 2015, and the first period of IBR implementation on the electricity tariff. Others are: implementation of competitive bid and development plan by ring-fenced Single Buyer, implementation of initiatives to enhance the reliability of the electricity supply industry in Sabah and the development of a framework for limited wholesale competition.

Economic, Technical and Safety Regulatory Framework

Year	Initiative	Status
2010	International bid for new capacity	√
	Account unbundling under IBR	√
	Financial and Technical Benchmarking	√
	Analysis of proposed tariff review - Electricity	√
	Transparency in dispatching	√
2011	Industry Award Programme	√
	Malaysia Energy Information Hub (MEIH)	√
	Monitoring of Industry Performance Programme	√
	Implementation of Applicable Coal Price (ACP)	√
	Development of Code of Practices and Industry Guidelines	√
	Enforcement of Grid Code and Distribution Code	√
2012	Implementation of Monitoring of Service Standard	√
	The release of Regulatory Implementation Guidelines (RIGs) - Electricity	√
	Framework for Single Buyer (SB) and Grid System Operator (GSO) - Electricity	√
	Operating a more transparent and organised electricity and gas market	√
	Implement a new framework for gas and electricity supply and safety	√
	Form a collaborative framework with relevant agencies and associations for regulatory activities	√
	The establishment of a regulatory framework for electric metering	√
	Implementation of initiatives to enhance the reliability of the electricity supply in Sabah	√

Year	Initiative	Status
2014	Implementation of IBR - Electricity	√
	Single Buyer Rules and SB and GSO Functions	√
	Competitive bid for new capacity	√
	National Electricity Supply and Demand Forecast Framework	√
	Continuous development of code of practices and industry guidelines	√
	Development of legal and policy framework	√
	Implementation of industrial studies	√
	Implementation of competitive bid and development plan by Single Buyers	√
	First Regulatory Control period for IBR - Electricity	√
2015	Competitive bid for new capacity	⬆
	Technical and financial benchmarking to measure the performance of power stations	⬆
	Improvement in the governance of electricity supply industry in Sabah	⬆
	Improvement in performance monitoring in the electricity supply industry	⬆
	Continuous development of industry code of practices, rules and guidelines	⬆
	Implementation of the first-phased and initiatives for New Enhances Dispatch Arrangement (NEDA)	⬆
2016-2019	IBR Implementation for the piped gas supply industry	⬆
	IBR Implementation for the electricity supply industry	⬆
	Implementation of National Energy Efficiency Action Plan	⬆
	Funds for electricity supply industry	⬆
	Development of a legal and regulatory framework for competitive energy market	⬆
	Regulatory framework for third party access to gas infrastructure	⬆
	The establishment of authority for the electricity market	o
2020	Running a competitive energy market	o

Notes:

√	Completed	⬆	In preparation	o	Have yet to start

REGULATORY FRAMEWORK RATIONALISATION PLAN

The second sub-plan, the Regulatory Framework Rationalisation Plan, contains 18 main initiatives that aim to optimise organisational sources. Half of these initiatives involve proposals for outsourcing or re-coordination of organisational functions with other relevant regulatory agencies. Meanwhile, the other half are the new roles and initiatives that have just been implemented by the Energy Commission. 78% of the list of initiatives until 2014 has been implemented while the remaining 22% are still under implementation processes.

Functions undertaken by institutions/industries under the monitoring of the Energy Commission	
Electricity competency examination by institutions	√
Verification of electrical equipment test report	√
Monitoring of electrical equipment market	√
Processing of Approval to Install and Approval to handle piped gas (ATI and ATO)	⬆
Promotional activity	√
Other functions coordinated with other relevant regulatory organisations	
Processing of Incentive for energy efficiency and renewable energy	√
Renewable energy activities	⬆
Registration of contractors	⬆
Eliminated Functions	
Registration of licensed installation	√

Notes:

√	Completed	⬆	In preparation	o	Have yet to start

New functions by Energy Commission	
Competitive bid	√
IBR - electric and gas	√
Malaysia Energy Information Hub (MEIH)	√
ESCO Registration	√
Promotion and regulation related to energy efficiency	√
Review and approval of electric meter	√
National Gas Task Force Operation	√
Registration of lab test, manufacturer and importer of electrical equipment	√

Notes:

√	Completed	⬆	In preparation	o	Have yet to start

CORPORATE DEVELOPMENT PLAN

The Corporate Development Plan is the third sub-plan which covers 28 main initiatives. It aims to strengthen organisational competency and it is divided into three main areas: human capital development, business process reengineering, and improvement of financial sustainability. 86% of the initiatives have been completed while 14% are in the process of being implemented. This includes the initiative for Replacement Planning Programme, the development of the Plan for the Energy Commission's Development Centre, as well as development of Strategic Communications Framework, which are all in the process of implementation.

Year	Initiative	Status
Human Capital Development		
2010	Restructuring of the organisation	√
2011	Development of Human Capital Management Framework	√
	Review of Terms and Conditions for Services	√
	Implementation of Online Performance Management	√
2012	Development of Human Capital Management	√
	Redistribution of workforce based on priorities	√
2013	Knowledge Management Programmes	√
	Replacing Plan Programme Development	√
	Preparation of the Energy Commission's Development Centre Plan	√
2014-2016	Operation of the Energy Commission's Learning Centre	⬆
Reengineering Process		
2011	Rationalisation of the roles of headquarters and regional offices	√
	Computerised Processes	√
	Review of Customer Pledge	√
	Centralisation of procurement	√
	Outsourcing Event Management	√
2012	Implementation of Online Payment and Banking	√
	Outsourcing Salary Processing	√
	Development of ICT Main Plan	√
	Monitoring Of Customer Pledge	√
	Outsourcing legal services	√
	Enhancing ICT security system	√
2013	Review of Complaint Management	√
	Online database	√
	Development of Strategic Communication Framework	√
	Implementation of Online Payment	√
2014	Review on organisational structure and workforce requirement	√
Increasing Financial Sustainability		
2011	Review of financial plan	√
2012	Review of fee and charge for licensing and certification	√

Notes:

√	Completed	⬆	In preparation	o	Have yet to start

FINANCIAL STATEMENT

REPORT OF THE AUDITOR GENERAL

REPORT OF THE AUDITOR GENERAL
ON THE FINANCIAL STATEMENT OF
THE ENERGY COMMISSION
FOR THE YEAR ENDED AT 31 DECEMBER 2014

Report on the Financial Statements

The financial statements of the Energy Commission have been audited by my representative, which comprise the Balance Sheet as at 31 December 2014 and the Income Statement, Statement Of Changes In Equity and Cash Flow Statement for the year then ended and a summary of significant accounting policies and other explanatory information.

Members of the Energy Commission's Responsibility for the Financial Statements

The Members of the Energy Commission (hereinafter known as 'Members of the Commission') are responsible for the preparation and fair presentation of these financial statements in accordance with approved financial reporting standards in Malaysia and the Energy Commission Act 2001 (Act 610). The Members of the Commission are also responsible for such internal control as the management determines is necessary to enable the preparation of financial statements that are free from material misstatement whether due to fraud or error.

Auditor's Responsibility

My responsibility is to express an opinion on these financial statements based on the audit. The audit has been carried out in accordance with the Audit Act 1957 and in conformity with approved standards on auditing in Malaysia. Those standards require that I comply with ethical requirements and plan and perform audit to obtain reasonable assurance whether the financial statements are free from material misstatement.

REPORT OF THE AUDITOR GENERAL

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entity's preparation and fair presentation of financial statements that give a true and fair view in order to design audit procedures that are appropriate in the circumstances but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by the management as well as evaluating the overall presentation of the financial statements.

I believe that the audit evidence that I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

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 2014 and of its financial performance and cash flows for the year then ended in accordance with approved financial reporting standards in Malaysia.

NIK MAZIAN BINTI MOHAMMAD

FOR AUDITOR GENERAL
MALAYSIA

PUTRAJAYA
28 JULY 2015

STATEMENT BY THE CHAIRMAN AND THE CHIEF EXECUTIVE OFFICER OF THE ENERGY COMMISSION

We, Dato' Abdul Razak Bin Abdul Majid and Datuk Ir Ahmad Fauzi Bin Hasan, being the Chairman and the Chief Executive Officer of the Energy Commission do hereby state that, in the opinion of the Members of the Commission, the Financial Statements which comprises the Balance Sheet, Income Statement, Statement Of Changes In Equity and Cash Flow Statements with all relevant notes to the Financial Statements included are properly drawn up so as to give a true and fair view of the state of affairs of the Energy Commission as at 31 December 2014 and of its results and changes in financial position for the year then ended.

Chairman,

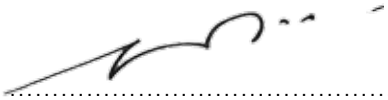
.....

Dato' Abdul Razak Bin Abdul Majid
Chairman

Date : 28 July 2015

Place : Energy Commission
Precinct 2, Putrajaya

Chief Executive Officer,



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Datuk Ir. Ahmad Fauzi Bin Hasan
Chief Executive Officer

Date : 28 July 2015

Place : Energy Commission
Precinct 2, Putrajaya

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

I, Asma Aini Binti Mohd Nadzri, Director of Corporate Services Department, being the officer primarily responsible for the financial management and accounting records of the Energy Commission, do solemnly and sincerely declare that the financial statements comprising the Balance Sheet, Income Statements, Statements Of Changes In Equity and Cash Flow Statements with all relevant notes to the Financial Statements included 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 Declarations Act, 1960.

Subscribed and solemnly
declared by the above named)
at BANGI)
on SELANGOR)
28 JUL 2015

.....

Before me,

PESURUHJAYA SUMPAH MALAYSIA
No : B424
Nama: RAJA HABIBAH
BINTI RAJA SAIDIN

Commissioner of Oaths
No. 23-1, Tingkat 1, Jalan 7/7A,
Seksyen 7, 43650 Bandar Baru Bangi.
Selangor Darul Ehsan.

THE ENERGY COMMISSION

BALANCE SHEET

As at 31 December 2014

	Note	2014 RM	2013 RM Restated
Property, Fittings and Equipment	3	94,101,391	97,263,499
Investment	4	5,193,531	5,036,921
Current Assets			
Cash and cash equivalents	5	74,762,537	72,487,113
Short term investment		189,925,843	151,222,120
Other receivables	6	2,502,485	2,009,770
		267,190,865	225,719,003
Current Liabilities			
Other payables	7	9,576,734	7,839,956
Tax payables		1,886,051	1,688,885
		11,462,785	9,528,841
Net Current Asset		255,728,080	216,190,162
		355,023,002	**318,490,582**
Financed by: -			
Accumulated funds		340,358,911	316,384,699
Special funds	8	14,664,091	2,105,883
		355,023,002	**318,490,582**

The accompanying Notes form an integral part of these Financial Statements.

THE ENERGY COMMISSION

INCOME STATEMENT
For the year ended 31 December 2014

	Note	2014 RM	2013 RM Restated
Income			
Fee and charge	9	75,492,048	65,620,876
Interest income		7,457,641	6,577,536
Other income		142,408	362,171
		83,092,097	72,560,583
Expenditure			
Staff cost	10	(36,639,209)	(32,657,332)
Administrative cost		(15,806,196)	(16,131,764)
Depreciation of property, fittings and equipment		(4,260,510)	(2,423,589)
Other operating expenses		(700,241)	(734,851)
		(57,406,156)	(51,947,536)
Surplus Before Taxation	11	25,685,941	20,613,047
Income Tax Expenses	12	(1,889,396)	(1,771,855)
Nett Surplus for The Year		**23,796,545**	**18,841,192**

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

The accompanying Notes form an integral part of these Financial Statements.

THE ENERGY COMMISSION

STATEMENT OF CHANGES IN EQUITY
For the year ended 31 DECEMBER 2014

Accumulated Fund	2014 RM	2013 RM Restated
As at 1 January	316,384,699	296,234,774
Prior Year adjustment	177,667	1,308,733
Restated Balance Brought Forward	316,562,366	297,543,507
Surplus before taxation for the current year	25,685,941	20,613,047
Taxation for the year	(1,889,396)	(1,771,855)
As at 31 December	**340,358,911**	**316,384,699**

Special Funds	2014 RM	2013 RM Restated
As at 1 January	2,105,883	2,684,079
Income:-		
Special Allocation from KeTTHA and Government Agencies	13,626,450	81,410
Bank Interest	27,564	13,911
	15,759,897	2,779,400
Expenditure	(1,095,806)	(673,517)
As at 31 December	**14,664,091**	**2,105,883**

The accompanying Notes form an integral part of these Financial Statements.

THE ENERGY COMMISSION

CASH FLOW STATEMENT
For the year ended 31 December 2014

	2014 RM	2013 RM Restated
Cash Flow from Operating Activities		
Surplus before taxation	25,685,941	20,613,047
Adjustment for:		
Accumulated fund	177,667	1,308,733
Interest Income	(7,457,641)	(6,577,536)
Depreciation	4,260,510	2,423,589
Fixed Asset Written Off	(182,102)	-
Operating surplus before changes in working capital	22,484,375	17,767,833
Changes in working capital :-		
Other receivables	(492,715)	(260,761)
Other payables	1,736,778	367,109
Cash generated from operating activities	23,728,438	17,874,181
Income Tax Paid	(1,692,229)	(1,526,795)
Net Cash Generated from Operating Activities	**22,036,209**	**16,347,386**
Cash Flow from Investing Activities		
Investment	(156,610)	(5,036,921)
Short-term investment	(38,703,723)	(35,954,676)
Purchase of property, fitting and equipment	(916,300)	(5,826,996)
Interest income	7,457,641	6,577,536
Net Cash Used in Investing Activities	**(32,318,992)**	**(40,241,057)**
Cash Flow from Financing Activity		
Special Funds	12,558,207	(578,197)
Net Cash Generated from Financing Activity	**12,558,207**	**(578,197)**
Net increase/(decrease) in cash and cash equivalents	2,275,424	(24,471,868)
Cash and cash equivalent at beginning of the year	**72,487,113**	**96,958,981**
Cash and cash equivalent at end of the year	**74,762,537**	**72,487,113**
Cash and cash equivalents consist of:		
Cash and bank balance	21,436,492	13,462,464
Deposit at licensed bank	53,326,045	59,024,649
	74,762,537	**72,487,113**

The accompanying Notes form an integral part of these Financial Statements.

THE ENERGY COMMISSION

Notes to the Financial Statements

1. Principal activity

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

The Energy Commission is a regulatory agency for the monitoring and development of the energy sector. The Energy Commission is directly responsible for supervising and monitoring energy generating activities including monitoring all individuals licensed under the Energy Commission Act, 2001.

The financial statements have been approved and resolution has been sought for issuance by the Energy Commission on 28 July 2015.

2. Significant Accounting Policies

The following accounting policies are practised by the Energy Commission and in line with policies practised in previous years.

(a) Basis of Accounting

The financial statements have been prepared to comply with the Private Entity Reporting Standards (PERS) issued by Malaysian Accounting Standards Board (MASB) and based on historical cost convention.

(b) Property, fittings and equipment

Property, fittings and equipment are stated at cost less accumulated depreciation and impairment losses, if any. Work in progress is not depreciated.

Depreciation for property, fittings and equipment is calculated based on the straight-line basis over the estimated useful life of the asset.

The annual depreciation rates are as follows:

* Land and buildings	2%
Motor vehicle	20%
Furniture, equipment and renovation	20%
Office equipment (electronic)	15%
Application system and computer	33 1/3%
Fixture and fitting	20%

*Land and building are recognised separately after the ownership completely transfer in year 2014 and adjustment for the related record, if any, will be taken into account in the 2015 financial year.

The residual value, useful life and depreciation method are reviewed at each financial year end to ensure the amount, method and period of depreciation are consistent with previous estimates and the pattern of consumption of economic benefits of the assets.

(c) Investment

The Energy Commission's investment is a type of bank special product that invested in money market deposit which is Shariah-compliant and based on unit trust. Investment are stated at book value calculated at cost. The cost value is determined based on Net Asset Value (NAV) on the date of purchase or at the time of the reinvestment of the income distribution received. Income distribution is recognised as the return on investment on the date of declaration of income by the fund manager.

Investment is the allocation of fund for the payment of gratuities to retired employees of the Energy Commission.

(d) Cash and cash equivalents

Cash and cash equivalents comprise cash on hand and bank balance, deposit with banks and other financial institutions and short-term investments with high liquidity maturing period of 3 months and less from the date of purchase and are readily convertible into cash with insignificant risk of change in value.

Cash Flow Statement have been prepared using the indirect method.

(e) Short-term Investment

Short-term Investments are deposits with banks and other financial institutions and short-term investment with high liquidity with a maturity period of 3 months up to one year from the date of purchase and are readily convertible into cash with low risk of changes in value.

(f) Receivables

Receivables are stated at cost less provision for doubtful debts, if any.

(g) Payables

Creditors are stated at fair value of consideration amount to be paid for goods and services received.

(h) Special Fund

Special Fund is a special allocation received from the Malaysian Electricity Supply Industry Trust Account (MESITA) under the Ministry of Energy, Green Technology and Water (KeTTHA) and Government Agencies for specific purposes.

(i) Impairment

The carrying amount of the Commission's assets (other than financial assets) are reviewed at each balance sheet date to determine whether there is any indication of impairment. If any such indication exists, the asset's recoverable amount is estimated. An impairment loss is recognised whenever the carrying amount of an asset 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 amount, in which case the impairment loss is charged to equity.

The recoverable amount is the greater of the asset's net selling price and its value in use. In assessing value in use, estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. For an asset that does not generate largely independent cash inflows, 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 an impairment loss on a revalue asset, in which case it is taken to equity.

(j) Income Tax

Income tax on the profits and losses for the year is the current year tax. Current year tax is the expected amount of income taxes payable on taxable profits for the year and is measured using the tax rates that apply to the balance sheet date.

Current tax expense is the expected tax payable on the taxable income for the year, using tax rate 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 arising between the tax 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 the transaction affects neither accounting nor taxable profit. The amount of deferred tax provided is based on the expected manner of realisation or settlement of the carrying amount of assets and liabilities, using tax rates enacted or substantially enacted at the balance sheet date.

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

(k) 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 employees of the Energy Commission. Short term accumulating compensated absences such as paid annual leave are recognised when services are rendered by employees that increases their entitlement to future compensated absences, and short term non-accumulating compensated absences such as sick leave are recognised when the absences occur.

ii) Defined Contribution Plan

According to the law, employers in Malaysia are obligated to contribute to Kumpulan Wang Simpanan Pekerja. The obligations for contributions to defined contribution plans are recognised as an expense in the income statement as insured. Liability for the defined contribution plan is recognised as current expenses in the income statement.

(l) Recognition of Income and Expenditure

Income from fees and charge are considered cash in view of license holders' responsibilities to make annual payment. Interest income on current account is also recognised on cash basis, while interest income from fixed deposit with bank and short term investment, and all expenses are calculated on accrual basis.

3. Property, fittings and equipment

2014

	Work in progress	Land and buildings	Motor vehicles	Furniture, equipment and renovation	Office equipment (Electronic)	Application system and computer	Fixture and fitting	Total
	RM	RM	RM	RM	RM	RM	RM	RM
Cost								
At 1 January 2014	-	87,380,832	4,213,694	4,856,359	4,288,209	3,104,052	1,548,114	105,391,260
Addition/Transfer	279,192	-	391,266	121,125	56,698	273,724	-	1,122,005
Disposal/ Transfer	-	-	(169,166)	-	-	(36,539)	-	(205,705)
At 31 December 2014	279,192	87,380,832	4,435,794	4,977,484	4,344,907	3,341,237	1,548,114	106,307,560
Accumulated Depreciation								
At 1 January 2014	-	873,808	2,413,634	762,577	1,205,904	2,717,026	154,812	8,127,761
Depreciation charge for the year	-	1,747,617	546,109	933,649	520,709	202,803	309,623	4,260,510
Disposal	-	-	(146,610)	-	-	(35,492)	-	(182,102)
At 31 December 2014	-	2,621,425	2,813,133	1,696,226	1,726,613	2,884,337	464,435	12,206,169
Net book value								
At 31 December 2014	**279,192**	**84,759,407**	**1,622,661**	**3,281,258**	**2,618,294**	**456,900**	**1,083,679**	**94,101,391**

2013

	Work in progress	Land and buildings	Motor vehicles	Furniture, equipment and renovation	Office equipment (Electronic)	Application system and computer	Fixture and fitting	Total
	RM	RM	RM	RM	RM	RM	RM	RM
Cost								
At 1 January 2014	92,009,585	-	3,252,814	441,655	1,109,012	2,875,546	-	99,688,612
Addition/Transfer	3,177,011	87,380,832	1,065,272	4,414,704	3,199,157	228,506	1,548,114	101,013,596
Disposal/ Transfer	(95,186,596)	-	(104,392)	-	(19,960)	-	-	(95,310,948)
At 31 December 2013	-	87,380,832	4,213,694	4,856,359	4,288,209	3,104,052	1,548,114	105,391,260
Accumulated Depreciation								
At 1 January 2013	-	-	2,138,462	274,390	943,869	2,471,799	-	5,828,520
Depreciation charge for the year	-	873,808	379,564	488,187	281,991	245,227	154,812	2,423,589
Disposal	-	-	(104,392)	-	(19,956)	-	-	(124,348)
At 31 December 2013	-	873,808	2,413,634	762,577	1,205,904	2,717,026	154,812	8,127,761
Net book value								
At 31 December 2013	**-**	**86,507,024**	**1,800,060**	**4,093,782**	**3,082,305**	**387,026**	**1,393,302**	**97,263,499**

4. Investment

	2014	
	Cost/Book Value RM	Net Asset Value RM
Unit Trusts:- Affin Hwang Aiiman Wholesale Fund IV	5,193,531	5,204,205

	2013 Restated	
	Cost/Book value RM	Net Asset Value RM
Unit Trusts:- Affin Hwang Aiiman Wholesale Fund IV	5,036,921	5,040,916

Investment in unit trusts: Affin Fund.4-i Wholesale renaming to Affin Hwang Aiiman Wholesale Fund IV on 20 September 2014 when the merger of Affin Fund Management Berhad and Hwang Investment Berhad completed by maintaining the existing investment characteristics.

Holding in unit trust Affin Hwang Aiiman Wholesale Fund IV is 5,169,568 units (2013: 5,013,942). Net Asset Value is based on the calculation of the fund manager.

5. Cash and Cash Equivalent

	2014 RM	2013 RM Restated
Cash and Bank Balances	21,436,492	13,462,464
Deposit with licensed bank	53,326,045	59,024,649
TOTAL	**74,762,537**	**72,487,113**

Cash and bank balances include the bank balance of Special Fund Account of RM14,664,091 (2013: RM2,105,883)

6. Other Receivables

	2014 RM	2013 RM Restated
Staff Advance	418	15,600
Club Membership Deposit	91,000	91,000
Other Deposits and Receivables	278,218	238,968
Accrued Interest	2,132,849	1,664,202
TOTAL	**2,502,485**	**2,009,770**

7. Other Payables

	2014 RM	2013 RM Restated
Operating Payables	3,897,195	3,925,604
Other Payables	4,610,094	2,998,739
Cash Award in lieu of leave (GCR)	1,047,423	891,093
Compound Consolidated Fund under KeTTHA	-	4,500
Audit fee	22,022	20,020
TOTAL	**9,576,734**	**7,839,956**

8. Special Fund

2014	PPKTL Trust Account	PQB Trust Account	GRID CODE Trust Account	PR&PLL Trust Account	Total
	RM	RM	RM	RM	RM
Balance as at 1 January 2014	1,536,547	537,546	31,790	-	2,105,883
Income:					
Funds from Government / Agencies	2,000,000	-	126,450	11,500,000	13,626,450
Other Income	17,796	-	-	9,768	27,564
	2,017,796	-	126,450	11,509,768	13,654,014
(-) Expenditures					
Other Expenses	(400,020)	(537,546)	(158,240)	(-)	(1,095,806)
	(400,020)	(537,546)	(158,240)	(-)	(1,095,806)
Surplus Income	1,617,776	(537,546)	(31,790)	11,509,768	12,558,208
Balance as at 31 December 2013	**3,154,323**	**-**	**-**	**11,509,768**	**14,664,091**

2013 Restated	PPKTL Trust Account	PQB Trust Account	GRID CODE Trust Account	Total
	RM	RM	RM	RM
Balance as at 1 January 2013	1,522,637	1,161,443	-	2,684,080
Income:				
Funds from Government / Agencies	-	-	81,410	81,410
Other Income	13,910	-	-	13,910
(-) Expenditures	13,910	-	81,410	95,320
Other Expenses	(-)	(623,897)	(49,620)	(673,517)
	(-)	(623,897)	(49,620)	(673,517)
Surplus Income	13,910	(623,897)	31,790	(578,197)
Balance as at 31 December 2013	**1,536,547**	**537,546**	**31,790**	**2,105,833**

Special Fund is a special allocation fund received from Malaysian Electricity Supply Industry Trust Account (MESITA) under Ministry of Energy, Green Technology and Water (KeTTHA) and Government Agencies for special purposes. The details of each trust account under Special Fund are as follows:-

i) **PPKTL Trust Account :** aims to finance the Sustainable Energy Communication Plan Project to promote sustainable energy (energy efficiency and renewable energy), and increase public awareness of the legal and regulatory framework pertaining to sustainable energy.

ii) **PQB Trust Account :** aims to finance data logger purchase and Power Quality Baseline Study consultancy services in Peninsular Malaysia and it was completed in 2014.

iii) **Grid Code Trust Account :** for the purpose of organising Knowledge Development Programme and National Electricity Supply Industry Talks and it was completed in 2014.

iv) **PR&PLL Trust Account :** to finance the Retrofit and LED Installation Project at selected ministry buildings, which was implemented in early 2015.

9. Fees and Charge

	2014 RM	2013 RM
Licensing of Public and Private	51,761,997	47,050,555
Registration/ WRenewal of Operational Fee	20,034,035	15,906,030
Other Operational Fee	3,696,016	2,664,291
	75,492,048	**65,620,876**

10. Staff Cost

	2014 RM	2013 RM Restated
Salary, Allowance and Other Financial Benefit	30,012,791	26,799,252
Statutory Contribution	4,171,284	3,687,891
Travel and Subsistence Cost	2,455,134	2,170,189
	36,639,209	**32,657,332**

Included in Statutory Contribution are contributions to the Employees Provident Fund (EPF) amounting to RM4,017,200 (2013: RM3,547,085) and to PERKESO RM154,084 (2013: RM140,806). As at 31 December 2014, the Energy Commission's staff number was 297. (2013: 287).

11. Surplus Income Before Tax

The following are the amount included for surplus income before taxation:-

	2014 RM	2013 RM Restated
Fee and Charge (Note 9)	(75,492,048)	(65,620,876)
Other Income	(7,600,049)	(6,939,707)
Staff Cost (Note 10)	36,639,209	32,657,332
Audit Fee	22,020	20,020
Professional and Consultation Fee	4,828,073	4,901,079
Association Membership	18,977	16,083
Development cost of competency and management	507,671	525,745
Hospitality, Transportation and Utility	2,676,730	3,259,704
Maintenance and Systems Development	2,497,228	1,712,523
Maintenance of Appliances and Office Buildings	1,459,170	1,680,996
Printing and Office Supplies	1,354,119	1,464,677
Rental of Office Building and Equipment	2,250,810	2,184,838
Depreciation of Properly, Fitting and Equipment (Note 3)	4,260,510	2,423,589
Research, Sponsorship and Development Contributions	700,241	734,851
Other expenses	191,398	366,099
	25,685,941	**20,613,047**

12. Taxation

	2014 RM	2013 RM
Tax Expenses		
- Current Year	1,886,051	1,688,885
- Under provision in prior year	3,345	82,970
Total	**1,889,396**	**1,771,855**

Reconciliation Effective Tax Rate

Surplus before taxation	25,685,941	20,613,047
Taxation at Malaysian statutory tax rate of 26%	6,678,344	5,359,392
Tax Exemption Income	(4,792,293)	(3,670,507)
	1,886,051	1,688,885
Under provision in prior year	3,345	82,970
Tax Expenses	**1,889,396**	**1,771,855**

The Energy Commission has obtained tax exemption under Section 127(3)(b) Income Tax Act 1957, which was given by the Ministry of Finance on 19 October 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 on or collectible from any body or person under the Act, which governs the statutory body; and

iii. Donation or contribution received.

13. Capital Commitment

	2014 RM	2013 RM
Approved and Contracted		
Property, Fittings and Equipment	347,170	247,173
Office Supply	3,637	100,500
Maintenance	95,430	150,000
Professional Service	670,572	1,645,993
	1,116,809	**2,143,666**

Capital Commitment for the year ended at 31 December 2014 amounted to RM1,116,809 including furnishing of the Melaka and Negeri Sembilan District Office of RM139.550, vehicle order of RM177,666, and other expenses.

14. Comparative Figure

The following 2013 Comparative Figure has been restated in the Financial Statement 2014 to reflect changes in presentation of related item and reclassification of item in the Financial Statement for the year:

i. **Cash and Cash Equivalents:** In previous years, cash equivalents included deposits in banks and other financial institutions with high liquidity with a maturing more than 90 days. Therefore, the Energy Commission has restated the comparative and classifying deposits in banks and financial institutions with a maturing period of more than 90 days, namely on Cash and Cash Equivalents to Short-Term Investments.

ii. **Investment:** In previous years, the investment value was recorded at Net Asset Value, returns were placed in the Other Payables account and investment are recognised when incurred. Therefore, restatement of investment at book value and returns are reclassified to interest income return.

iii. **Special Fund:** The Energy Commission disclose all the trust accounts that it managed by restating comparative figures for the previous year.

iv. **Employee Cost:** The Energy Commission restated the employee cost when the overdue emolument for the previous year was made in 2015.

Extract from the Balance Sheet, Income Statement and Cash Flow Statement

	Note	31.12. 2013		
		As previously stated	Reclassification	As restated
Balance Sheet		**RM**	**RM**	**RM**
Asset				
Investment	4	5,040,916	(3,995)	5,036,921
Cash and cash equivalents	5	222,169,390	(149,682,277)	72,487,113
Short-term investment		-	151,222,120	151,222,120
Other receivables	6	2,013,066	(3,296)	2,009,770
Current Liability				
Other payables	7	7,822,991	16,965	7,839,956
Financed by:-				
Accumulated Fund		316,405,659	(20,960)	316,384,699
Trust Account		569,336	(569,336)	-
Special Fund	8	-	2,105,883	2,105,883
Income Statement				
Interest		6,540,616	36,920	6,577,536
Staff Cost	10	(32,622,603)	(34,729)	(32,657,332)

	Note	31.12. 2013		
		As previously stated	Reclassification	As restated
Cash Flow Statement		**RM**	**RM**	**RM**
Cash Flow from Operating Activities				
Surplus income before taxation				
Adjustment of accumulated fund statement		20,610,856	2,191	20,613,047
Income Interest		1,331,884	(23,151)	1,308,733
Other Receivables		(6,540,616)	(36,920)	(6,577,536)
Other Payables		(264,057)	3,296	(260,761)
		241,963	609,072	367,109
Cash flow from Investing Activities				
Investment				
Short-term investment		(5,040,916)	3,995	(5,036,921)
Interest Income		-	(35,954,676)	(35,954,676)
		6,540,616	36,920	6,577,536

	Note	31.12. 2013		
		As previously stated	Reclassification	As restated
Cash Flow from Financing Activities				
Special Fund		-	(578,197)	(578,197)
Net Increase / (Decrease) in Cash and Cash Equivalents		11,465,602	(35,937,470)	(24,471,868)
Cash and Cash Equivalents at beginning of the year		210,703,788	(113,744,807)	96,958,981
Cash and Cash Equivalents at end of the year		**222,169,390**		**72,487,113**
Cash and bank balance				
Deposit with licensed bank		11,922,621	1,539,843	13,462,464
		210,246,769	(151,222,120)	59,024,649
		222,169,390		**72,487,113**

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