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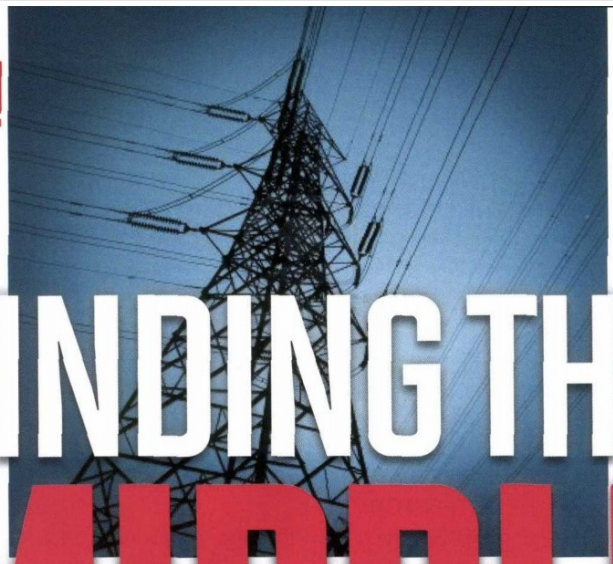

FINDING THE MIDDLE GROUND

As regulator for the electricity supply and piped gas sectors, Energy Commission Malaysia has its work cut out protecting the interests of both suppliers and consumers.

STORIES BY CHEAH CHOR SOOI & TARA YEAN

Striking a balance between ensuring the sustainability of the electricity and piped gas supply industries at one end, and protecting the interests of consumers (industrial, commercial and household) at the other, is an unenviable task shouldered by Suruhanjaya Tenaga Malaysia or Energy Commission (EC) Malaysia.

Discovering the right formula to ensure a good fit between pricing and the cost to supply energy is the biggest challenge poser for the regulatory body, which took over the role of the Department of Electricity and Gas Supply effective Jan 1, 2002.

"The most effective solution to correct any misalignment lies in the adoption of market pricing but this has to be managed properly so that nobody gets unduly hurt," Datuk Ir Ahmad Fauzi Hasan, the EC's Chief Executive Officer, tells ***Malaysian Business.***

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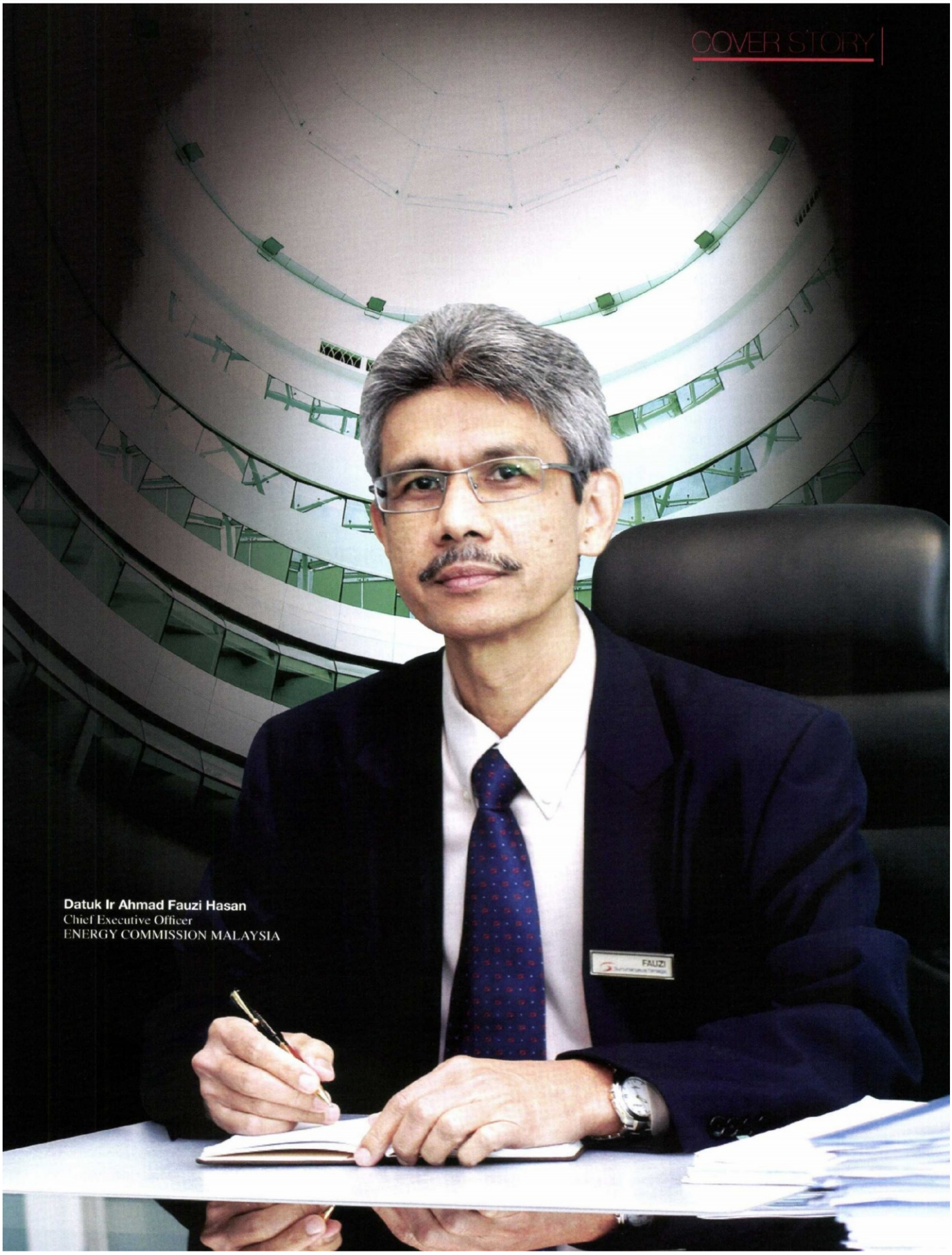

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A professional engineer with over 35 years of regulatory experience, Ahmad Fauzi's current job focuses on economic, technical and safety regulations for the piped gas and electricity supply industries.

He and his EC management team are answerable to the EC Board that is led by Tan Sri Dr Ahmad Tajuddin Ali, who is the EC's Non-Executive Chairman.

STREAMLINING

With quality service and cost-efficiency being the two key drivers, the EC has lined up an array of new programmes to improve performance of the electricity supply industry. One of the more prominent measures is the Incentive-Based Regulation (IBR) mechanism for electricity tariff setting.

A one-year trial run for the Incentive-Based Tariff Regulation is planned to start on Jan 1 next year before full implementation commences one year later.

"In the past, the tariff setting process had been ad hoc in that the licensees would approach the EC to request a tariff increase when they needed more revenue to cover their spiralling operation cost (fuel or non-fuel)," recalls Ahmad Fauzi.

"With the IBR in place, we will have a structured way of tariff setting. This framework will be based on a forward-looking approach of matching revenue requirement with cost projection over a three-year period."

Over that stated duration, stakeholders such as Tenaga Nasional Bhd (TNB) have to prove to the EC that their cost projections are optimum and reasonable to cover all that is necessary to ensure reliability, efficiency, safety and cost-effectiveness in their supply of electricity to consumers.

"We incorporate into this framework an incentive for the utility to save cost without jeopardising

THE LINK BETWEEN POWER TARIFF AND INDUSTRY SUSTAINABILITY

"FOR LONG-TERM SUSTAINABILITY OF THE ELECTRICITY OR PIPED GAS SUPPLY INDUSTRY, THE UTILITIES NEED TO HAVE PROPER RETURN ON INVESTMENT (ROI) TO JUSTIFY THEIR CAPITAL EXPENDITURE, I.E. TO ENSURE PROPER INFRASTRUCTURE IS PUT IN PLACE IN A TIMELY MANNER TO MEET DEMAND.

A CASE IN POINT IS THAT OF SABAH ELECTRICITY SDN BHD WHICH HAS BEEN GETTING NEGATIVE RETURNS SINCE ITS PRIVATISATION IN THE LATE 1990s, THUS REQUIRING CONTINUING SUBSTANTIAL FINANCIAL SUPPORT FROM THE GOVERNMENT (INCLUDING A FUEL SUBSIDY OF ABOUT RM500 MILLION PER YEAR) IN ORDER TO SUSTAIN ITS OPERATIONS OF SUPPLYING ELECTRICITY FOR THE PEOPLE OF SABAH."

- DATUK IR AHMAD FAUZI HASAN

Model of an Energy-Efficient Building

THE Diamond Building, which houses the Energy Commission Malaysia headquarters, is topped with photovoltaic (PV) solar panels, which generate about 10% of the building's energy supply.

Located in Precinct 2, Putrajaya, the eight-storey diamond-shaped building was completed in 2010 at a cost of RM95 million.

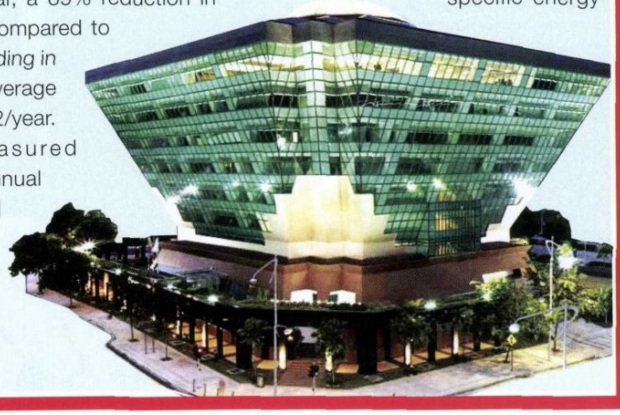
Conceptualised as a highly sustainable development, the building leverages an active and passive design, water efficiency, energy efficiency, and renewable energy. The Diamond Building is designed with a Building Energy Index (BEI) of 85 kWh/m2/year at 2,800 hours usage.

The centrepiece of the building is a large central atrium designed to admit and regulate day lighting using an automatic roller-blind system responsive to the intensity as well as angle of the incident sunlight.

The building's integrated cooling system utilises coils embedded in the concrete floor slabs that keep floor and ceiling temperatures between 19 and 21 degrees Celsius.

Today, the Diamond Building stands proud with an average BEI of 65 kWh/m2/year, a 69% reduction in specific energy consumption as compared to a typical office building in Malaysia with an average BEI of 210 kWh/m2/year.

(BEI is measured based on total annual energy consumed in a building in kilowatt hours divided by the floor area.)



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its service quality to consumers," explains Ahmad Fauzi.

"We set annual key performance indicators (KPIs) with them as the KPIs that they set on their own may not be acceptable to the consumers and us, the regulator. A revenue penalty will be imposed if they fail to meet the KPI."

At the end of the regulatory period, the EC will evaluate the overall performance of TNB, and whatever cost savings (lower operating and capital expenditure costs) derived at that time will be shared with consumers in the form of reduced tariff.

SUBSIDY RATIONALISATION

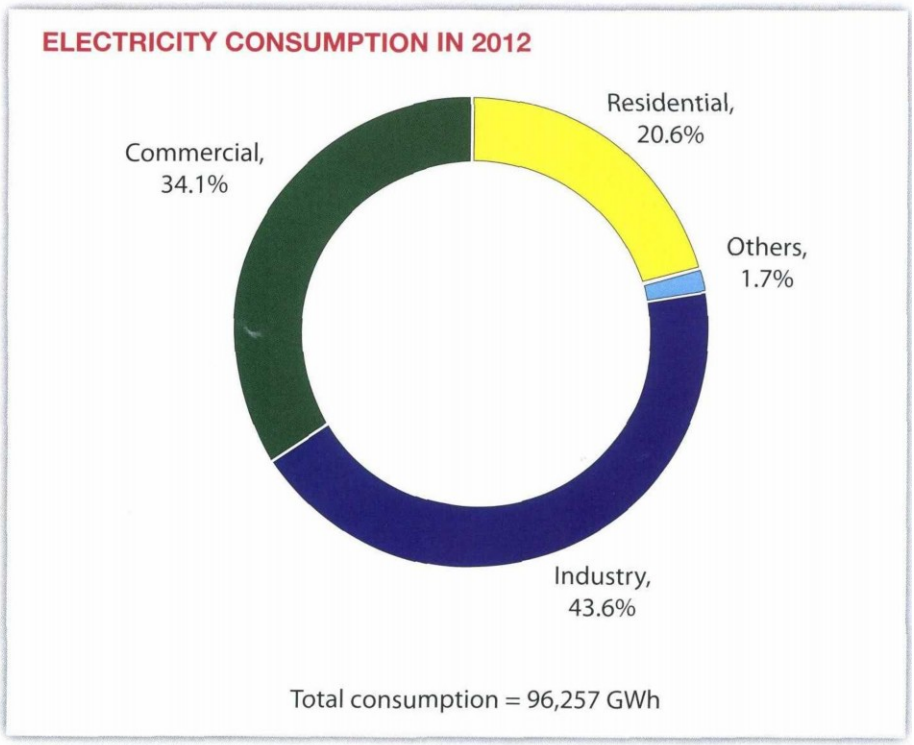
While consumers are able to benefit from reduced tariff, they must also be prepared to absorb higher tariff with the implementation of the IBR's fuel-cost-pass-through mechanism.

This is part of the government's subsidy rationalisation programme to address critical sustainability issues of the gas supply industry, given that national oil corporation Petronas is currently selling gas at about 70% lower than market price. The current subsidy for gas to the electricity sector is about RM15.5 billion a year.

If subsidies were removed, electricity tariff could spike to 50 sen per kiloWatt hour (kWh) from the prevailing average tariff rate of 33.54 sen per kWh, thus greatly burdening many end-users.

"Consumers who consume not more than RM20 of electricity per month now enjoy full subsidy from the government. On top of that, the current electricity tariff enjoys input subsidy in the form of gas price subsidy (coal is procured at market price)," says Ahmad Fauzi.

"At the end of the day, the tariff must reflect the actual cost of input fuel for the industry to be sustainable. This is similar to surcharges in the aviation industry



SOURCE: PENINSULAR MALAYSIA ELECTRICITY SUPPLY INDUSTRY OUTLOOK 2013

Key Functions of the EC

ESTABLISHED under the Energy Commission Act 2001, the Energy Commission(EC) is the regulatory agency for electricity supply and piped gas supply industries in Peninsular Malaysia and Sabah.

Fully operational on Jan 1, 2002, the EC took over the role of the Department of Electricity and Gas Supply, which was dissolved on the same date. Below are the EC's key functions:

- **Economic Regulation:**
  To promote economy in the generation, transmission, distribution, supply and use of electricity and in the reticulation and use of gas; promote competition; enable fair and efficient market conduct and prevent the misuse of monopoly or market power in the electricity and piped gas industries.
- **Technical Regulation:**
  To ensure security, reliability, efficiency and quality of supply and services in the electricity and piped gas supply industries.
- **Safety Regulation:**
  To protect the industry, consumers and public from dangers arising from the generation, transmission, distribution, supply and use of electricity and the distribution, supply and use of piped gas.

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whereby any change in input fuel cost that is beyond the control of the company will eventually be reflected in the final price of the services rendered."

Last year, Peninsular Malaysia generated 46% of its electricity from gas, 45% from coal, 5% from hydro and the balance of 4% from diesel, fuel oil and renewables.

To mitigate the impact of electricity tariff *fluctuations on consumers, a gradual* tariff increase plan and a stabilisation mechanism are being considered by the government for purposes of compensating TNB if it is unable to pass through the fuel cost increments to its customers.

"According to the plan, we will evaluate the fuel price every six months and revise electricity tariff accordingly. In some countries this is done on a monthly or quarterly basis," Ahmad Fauzi points out.

"In addressing the impact of the fuel-cost-pass-through and market-pricing *regime, I wish to urge consumers*, especially industries, to take advantage of the various government incentives being offered for energy efficiency projects and equipment."

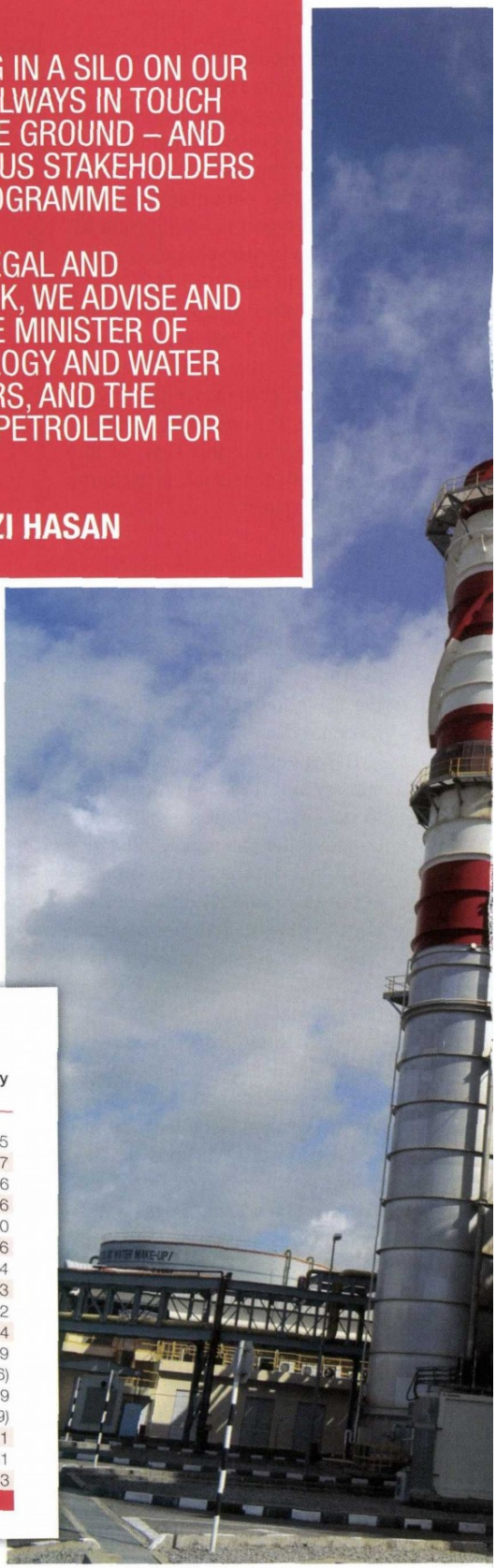
> "WE ARE NOT OPERATING IN A SILO ON OUR OWN... WE HAVE TO BE ALWAYS IN TOUCH WITH THE REALITY ON THE GROUND – AND THE NEEDS OF THE VARIOUS STAKEHOLDERS – BEFORE A PLAN OR PROGRAMME IS IMPLEMENTED.
>
> UNDER THE EXISTING LEGAL AND REGULATORY FRAMEWORK, WE ADVISE AND ARE ANSWERABLE TO THE MINISTER OF ENERGY, GREEN TECHNOLOGY AND WATER FOR ELECTRICITY MATTERS, AND THE MINISTER IN CHARGE OF PETROLEUM FOR PIPED GAS MATTERS."
>
> **- DATUK IR AHMAD FAUZI HASAN**

IPPS

On the future of the country's independent power producers or IPPs *(see chart)*, Ahmad Fauzi says the current framework of IPPs and utility generation will continue as they complement as well as spark healthy *competition in the power generation* industry.

On the issue of "hefty prices" paid to IPPs, he explains:

"As time goes by, our industry and policy-makers have fine-tuned our power purchase agreements (PPAs). Whatever cost-cutting opportunities that were identified in the first-generation PPAs were incorporated in the second- and third-



EXISTING IPP POWER PLANTS IN PENINSULAR MALAYSIA

IPP Power Plant	Fuel	Installed Capacity (MW)	PPA Expiry
YTL Power Generation Sdn Bhd	Gas	1,170	Sept 2015
Segari Energy Ventures Sdn Bhd	Gas	1,303	Jun 2017
Powertek Sdn Bhd	Gas	434	Jan 2016
Port Dickson Sdn Bhd	Gas	436.4	Jan 2016
Pahlawan Power Sdn Bhd	Gas	322	Aug 2020
Genting Sanyen Power Sdn Bhd	Gas	762	Feb 2016
Teknologi Tenaga Perlis Consortium Sdn Bhd	Gas	650	Mar 2024
Panglima Power Sdn Bhd	Gas	720	Feb 2023
GB3 Sdn Bhd	Gas	640	Dec 2022
Prai Power Sdn Bhd	Gas	350	Jun 2024
Kapar Energy Ventures Sdn Bhd	Gas/MFO/Coal	2,420	July 2029 (U1 to U6) July 2019 (GT8 and 9)
TNB Janamanjung Sdn Bhd	Coal	2,070	Aug 2031
Tanjung Bin Power Sdn Bhd	Coal	2,100	Sept 2031
Jimah Energy Ventures Sdn Bhd	Coal	1,400	Dec 2033
Total Installed Capacity (MW)		14,777.4	

SOURCE: PENINSULAR MALAYSIA ELECTRICITY SUPPLY INDUSTRY OUTLOOK 2013

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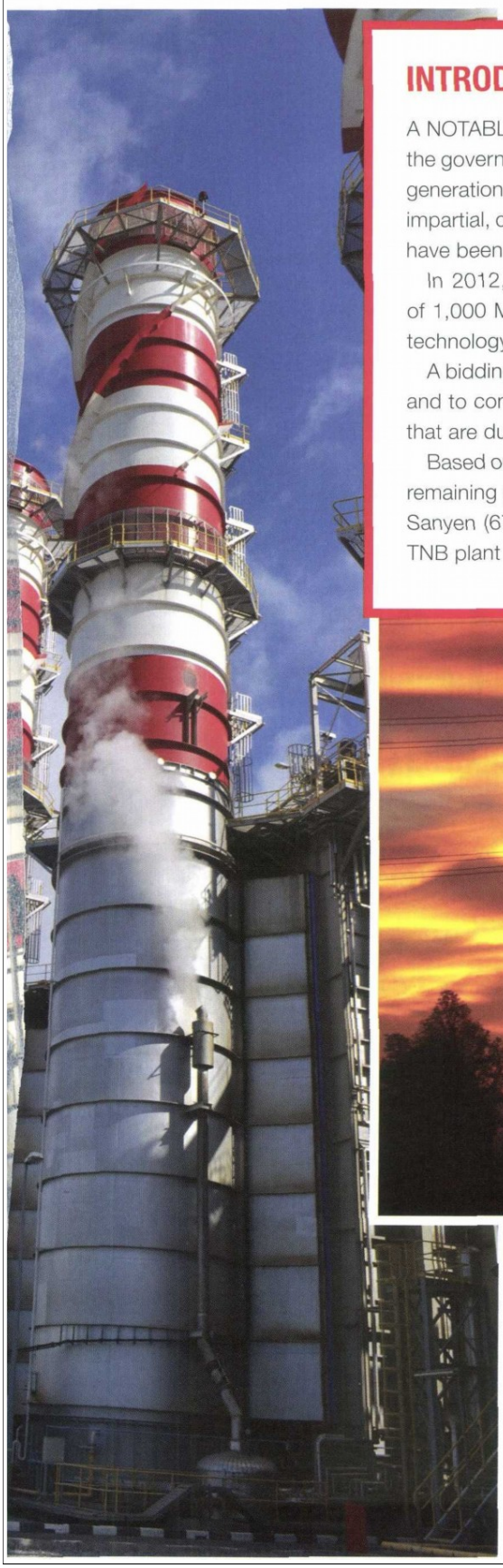


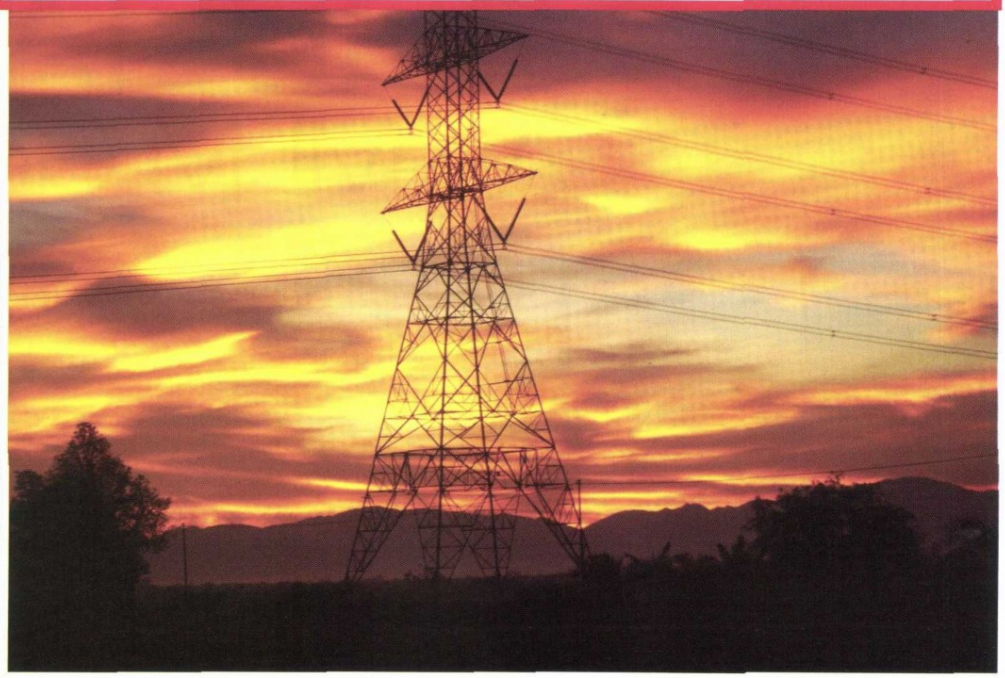
INTRODUCTION OF INTERNATIONAL COMPETITIVE BIDDING

A NOTABLE development in Malaysia's power industry is the empowerment of the EC by the government since 2010 to conduct competitive biddings to select developers of future generation capacity plant-ups. This is to ensure that optimum prices are secured through an impartial, credible and transparent procurement process. Since then, five bidding exercises have been conducted by the EC.

In 2012, the international competitive bidding for a new combined cycle gas turbine of 1,000 MW in Prai was won by TNB. It offers the latest and most efficient gas turbine technology at the most competitive levelised tariff based on gas at market price.

A bidding exercise was also undertaken to seek reduction of existing capacity payments and to consider the renewal of licences of first-generation IPPs' and TNB's power plants that are due to retire in 2015-2017.

Based on their offers that include substantial up-front capacity payment reductions for the remaining period of the existing PPAs, the licences for the Segari (1,303 MW) and Genting Sanyen (675 MW) gas-fired plants were renewed for another 10 years, and that for one TNB plant (275 MW) was renewed for another five years.



generation PPAs accordingly. This has led us to progress into the bidding process where competitive pricing rules."

In the context of the first-generation PPAs, Ahmad Fauzi notes that the authorities then "were in a hurry to plant up to overcome critical shortage of power in the peninsula in the early 1990s.

"We were among the pioneers among the developing countries that came up with this IPP framework," he reminisces.

"The pricing was based on the knowledge and expertise available at that time. It was the choice we had to make at the time to support our country's rapid economic growth."

In the years 2015, 2016 and 2017, the first-generation IPPs that fail in their bids to renew their licences will be retiring as a result of the expiry of their 21-year PPAs.