Reimagining and Transforming Electricity Supply Industry towards a Sustainable, Innovative and Smarter Future

Addressing:
- Major Disruptions/Shifts in Electricity Supply Industry
- Electricity Supply Industry Challenges & Investment Insights in India

G.B.S. Raju
GMR Energy, India

Humayun Tai
Tenaga Nasional Berhad (TNB) is the largest electricity utility in Malaysia. With our core business of providing electricity to the country’s businesses, homes and industries, we are a key contributor to Nation building.

Our activities represent the entire electricity production and supply value chain. In recent years, we have also embarked on our sustainability agenda through efforts such as Renewable Energy and other environmental as well as social initiatives as we seek to add value to our stakeholders. We believe these activities will not only take TNB into the future, but also continue to grow our business in the long-term.

While our roots are firmly consolidated on accomplishments within Malaysia, we have also made inroads into the international arena and our growth has already gained footholds in overseas markets which include Pakistan, India, Turkey, Saudi Arabia and the United Kingdom.

Information as at 31st August 2016
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Welcome Message from the President of AESIEAP

“Welcome to the AESIEAP CEO Conference 2017. The AESIEAP CEO Conference has traditionally been an event of significant importance, bringing together the AESIEAP member utilities for an opportunity to forge stronger ties thus able to address substantial issues and challenges affecting the electricity supply industry. We are indeed very privileged to be the host of this prestigious event.”

Datuk Seri Ir. Azman Mohd
President of AESIEAP 2017-2018
President/Chief Executive Officer of Tenaga Nasional Berhad, Malaysia
The AESIEAP CEO Conference 2017 is held in the beautiful island of Penang in Peninsular Malaysia. Popularly known as Pearl of Orient, it is famous for its blend of rich heritage (UNESCO site), and internationally renowned tourist attraction. Delegates will also gain useful insights and experience as this year’s conference will be graced by the presence of distinguished speakers, utility CEOs, experts and senior officers from various regional utilities and related organisations.

This conference will therefore be an excellent opportunity for all delegates to network and share latest development and innovation amongst peers and experts in the industry. With the theme “Reimagining and Transforming Electricity Supply Industry towards a Sustainable, Innovative and Smarter Future”, utilities around the world faces multiple challenges to survive in the evolving Electricity Supply Industry (ESI) that include major shifts in the external environment in particular the acceleration of technology disruption, economic shifts, evolving sustainability and regulatory requirements.

Utilities are compelled to undergo transformation towards providing value-added and innovative services to customers with minimal impact to the environment whilst ensuring secure and reliable electricity supply. It is therefore appropriate for this conference to look into how the industry can be reimagined and transformed in ways that would lead us towards a better, sustainable, innovative and smarter future.

I would like also to take this opportunity to invite all members to take part in the CEPSI 2018 conference, which will be held from 17-22 September 2018 at the Kuala Lumpur Convention Centre (KLCC) in Kuala Lumpur, Malaysia.

Finally, I would like to extend my warmest welcome to all participants to this year’s conference and thank all the AESIEAP member countries for participating towards a better, sustainable, innovative and smarter future. “Selamat Datang ke Malaysia!” (”Welcome to Malaysia!”) and have an enjoyable stay.
# Programme at a Glance

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<tr>
<td>SUNDAY 22/10/2017</td>
<td>15:00 - 22:00</td>
<td>Registration</td>
<td>Bintang II*</td>
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<td>19:00 - 22:00</td>
<td>Welcoming Reception</td>
<td>Grand Ballroom*</td>
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<td>Welcoming Remarks: Datuk Seri Ir. Azman Mohd</td>
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<td>President of AESIEAP 2017-2018</td>
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<td>President/Chief Executive Officer of Tenaga Nasional Berhad</td>
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<tr>
<td>MONDAY 23/10/2017</td>
<td>08:00 - 08:30</td>
<td>Arrival of Delegates</td>
<td>Grand Ballroom*</td>
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<td>08:30 - 08:45</td>
<td>Welcoming Speech: Datuk Seri Ir. Azman Mohd</td>
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<td>08:45 - 08:55</td>
<td>Congratulatory Speech 1: Mr. Oscar S. Reyes</td>
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<td>08:55 - 09:05</td>
<td>Congratulatory Speech 2: Mr. Lyu, Hyang-Reol</td>
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*Venue: Shangri-La’s Rasa Sayang Resort & Spa, Penang*
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| MONDAY     | 23/10/2017 | Congratulatory Speech 3: Mrs. Bhawana Aungkananuwat  
Deputy Governor (Administration) of Electricity Generating Authority of Thailand | Grand Ballroom*     |
|            | 09:05 - 09:15 | Opening and Keynote Address: Datuk Seri Panglima Dr. Maximus Johnity Ongkili  
Minister of Energy, Green Technology and Water, Malaysia | Grand Ballroom*     |
|            | 09:30 - 10:00  | Opening Ceremony & Group Photo Session                                      | Grand Ballroom*     |
|            | 10:00 - 10:40  | Keynote Session 1: Mr. Humayun Tai  
Senior Partner, McKinsey & Co., New York  
Topic: Future Trends, Direction and Strategies of the Electricity Supply Industry in View of Major Disruptions and Shift in the New Millennium | Grand Ballroom*     |
|            | 10:40 - 10:55  | Coffee & Tea Break                                                         | Foyer Grand Ballroom* |
|            | 10:55 - 11:35  | Keynote Session 2: Mr. G.B.S. Raju  
Chairman & Managing Director, GMR Energy, India  
Topic: Challenges and Investment Potential in India’s Electricity Supply Industry | Grand Ballroom*     |

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<tr>
<td>MONDAY</td>
<td>11:35-13:05</td>
<td>Panel Discussion: Heads and CEOs of Utilities</td>
<td>Grand Ballroom*</td>
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<td>23/10/2017</td>
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<td>Topic: Electricity Supply Industry - Challenges and Transformation Strategy for Sustainability &amp; Innovation</td>
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<td>Moderator: Mr. Tim Charlton (Chief Editor of Asian Power)</td>
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<td>Panelist:</td>
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<td>i)</td>
<td>Mr. Mareshige Shimizu&lt;br&gt;President and Chief Executive Officer of The Chugoku Electric Power Company Inc.</td>
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<td>ii)</td>
<td>Mr. Shin-ichiro Kengaku&lt;br&gt;Managing Executive Officer of Tokyo Electric Power Company Holdings, Inc.</td>
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<td>iii)</td>
<td>Datuk Seri Ir. Azman Mohd&lt;br&gt;President/Chief Executive Officer of Tenaga Nasional Berhad</td>
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<td>Atty. Melvin A. Matibag&lt;br&gt;President and Chief Executive Officer of National Transmission Corporation Philippines</td>
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<td>v)</td>
<td>Mr. Wong Kim Yin&lt;br&gt;Group Chief Executive Officer of Singapore Power Ltd</td>
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<td>vi)</td>
<td>Dr. Wen-Chen Chu&lt;br&gt;Chairman of Taiwan Power Company</td>
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<td>13:05-14:35</td>
<td>Lunch Break</td>
<td>Coffee House (Spice Market)*</td>
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<td>15:00-16:30</td>
<td>AESIEAP Executive Committee &amp; 43\textsuperscript{rd} Council Meeting</td>
<td>Sayang Room*</td>
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<td>15:00-18:00</td>
<td>Cultural Visit (Optional)</td>
<td>Penang Butterfly Farm &amp; Penang Batik Craft</td>
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<td>Gala Dinner</td>
<td>Tree Garden*</td>
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<td>TUESDAY 24/10/2017</td>
<td>07:30 - 12:00</td>
<td>Technical Visit</td>
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<td>12:30 - 14:00</td>
<td>Lunch Break</td>
<td>Pen Mutiara Restaurant</td>
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<td>14:00 - 17:00</td>
<td>City Tour</td>
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<td></td>
<td>19:00 - 22:00</td>
<td>Dinner</td>
<td>Coffee House (Spice Market)*</td>
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<td>WEDNESDAY 25/10/2017</td>
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<td>Departure of Delegates</td>
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*Venue: Shangri-La’s Rasa Sayang Resort & Spa, Penang
Keynote Speakers

MR. HUMAYUN TAI
Senior Partner, McKinsey & Company

Topic: Future Trends, Direction and Strategies of the Electricity Supply Industry in View of Major Disruptions and Shift in the New Millennium

Humayun leads the Downstream service line in Electric Power & Natural Gas Practice (McKinsey & Company), which covers T&D operations, new grid technologies, distributed generation, energy efficiency, and customer experience. He is also a leader in the Clean Tech service line of Sustainability & Resource Productivity Practice.

He has co-authored a number of publications, including the ‘McKinsey on Smart Grid’ publication and recent work McKinsey has completed on energy efficiency, and clean technologies. He has also authored external articles/reports, including in energy and power and with the American Physical Society.

He is also a regular panelist and participant in key industry events, including Gridweek, Harvard Electricity Policy Group, GridCom, and senior industry roundtables.

Prior to joining McKinsey, Humayun worked for Deloitte Emerging Markets and was an energy consultant at the World Bank.

Education Background: MA, International Relations and Economics (University Johns Hopkins)
MR. G.B.S. RAJU  
Chairman & Managing Director, GMR Energy  

Topic: Challenges and Investment Potential in India’s Electricity Supply Industry  

G. B. S. Raju is the Chairman and Managing Director of GMR Energy. He holds a Bachelors’ Degree in Commerce from Vivekananda College, University of Madras. He joined the GMR group of companies in the year 1996. He was appointed on the Board for the period 20 June 1998 to 17 October 2007 and was reappointed on the Board on 15 February 2008. He began his career as the Managing Director of the Company and has been responsible for setting up of the barge-mounted plant.

Over the years, he has held various key positions for different companies and businesses of the GMR group of companies. He played a crucial role in shaping the overall strategy and positioning of the GMR group of companies and has been instrumental in developing and implementing various projects.

He also successfully steered the Group’s foray into the Highways business. He led the finance function for the GMR group of companies and steered the IPO of GMR Infrastructure Limited in India in 2006. He was the Chairman (Corporate and International Business) until his appointment as Chairman of the Energy sector.
Panel Speakers

Topic: Electricity Supply Industry - Challenges and Transformation Strategy for Sustainability & Innovation

CHAIR, MR. TIM CHARLTON
Owner
Charlton Media Group

Mr. Tim Charlton is an Australian who holds a Bachelors degree in Commerce from the University of New South Wales (1991), and a Graduate Certificate in Management from the Australian Graduate School of Management (2006). Shortly after graduating from University, he worked on the South China Morning Post Newspaper in Hong Kong, first in Advertising Sales and then in Editorial for a total of 3 years. He then worked at Star Television for 2 years. In 1997, he returned to Australia to work for his father, also a magazine publisher, and then decided to return to Asia to set up his own publishing business, Charlton Media Group. In 2008, Mr. Charlton was awarded with a “Spirit of Enterprise Award 2008 Honoree” Award.

SPEAKER, MR. MARESHIGE SHIMIZU
Representative Director
President & Chief Executive Officer of The Chugoku Electric Power Co., Inc.

Mr. Mareshige Shimizu was born in 1952. He graduated from the School of Engineering Science, Osaka University in March 1974, and joined The Chugoku Electric Power Co., Inc. in April 1974. He has become the Representative Director, President and Chief Executive Officer of the company in April 2016. Prior to his current position, he served in the role of Executive Vice President and General Manager of several key divisions within The Chugoku Electric Power Co., Inc. including its Power Generation division, Internal Audit division and Nuclear Power Reinforcement Project.

SPEAKER, MR. SHIN-ICHIRO KENGAKU
Managing Executive Officer
Tokyo Electric Power Company Holdings, Inc. (TEPCO)

Mr. Shin-ichiro Kengaku is currently serving in TEPCO as the Managing Executive Officer for Public Relations & Corporate Communications, and Overseas Business, as well as the Chief of the New Growth Task Force. He holds concurrent posts as an external board member of Eurus Energy Holdings Corporation, one of the largest wind & photovoltaic generation project developers and operators, as well as of SPARX Group Co. Ltd, an independent asset management company. He is a MBA holder from the Australian National University in Australia and also possesses a Bachelor of Economics from Keio University in Japan.
Datuk Seri Ir. Azman Mohd took over the helm of TNB as President / Chief Executive Officer on 1 July 2012. He was the former Group Chief Operating Officer of TNB. Prior to this, he was the Vice President of Distribution Division.

He is currently the Chairman of Institute of Asset Management (IAM, UK) Malaysian Chapter. He obtained a Diploma in Engineering from the England Newark Technical College, UK, in 1976, a Bachelor of Engineering in Electrical Engineering from the University of Liverpool, UK, in 1979, and a Master of Business Administration from the University of Malaya in 1996.

Mr. Wong Kim Yin is the Group Chief Executive Officer of SP, since January 2012. Prior to 2012, he was Senior Managing Director of Investment at Temasek International (Pte) Ltd, where he had been responsible for investments in the energy transportation and industrial sectors.

From 1995 to 2002, he worked for The AES Corporation, a power company listed on the New York Stock Exchange, and was responsible for merger and acquisition and project development across Asia Pacific. Mr. Wong holds a Master’s Degree in Business Administration from the University of Chicago Graduate School of Business.
SPEAKER, ATTY. MELVIN A. MATIBAG  
President & CEO  
National Transmission Corporation Philippines (TRANSCO)

Attty. Melvin A. Matibag was appointed to lead TRANSCO as its President and CEO in 2017. Attty. Melvin is a qualified lawyer who has a Master of Laws Candidate in Corporate & Finance Law from the Wayne State University in Michigan, USA and a Juris Doctor degree from Ateneo De Manila University in Philippines.

Prior to joining TRANSCO, Attty. Melvin had worked in several companies, including Manila International Airport Authority as a General Manager, and as an Officer-in-Charge at Ninoy Aquino International Airport Terminal 3, where he led successful crackdowns against smuggling and other crimes.

SPEAKER, DR. WEN-CHEN CHU  
Chairman  
Taiwan Power Company (TPC)

Dr. Wen-Chen Chu is the Chairman of TPC, since August 2016. Prior to that, he was the President of Tatung University, Taiwan. He was also in the Board of Director of TPC from February 2010 until March 2013.

His previous experience includes Professor of Department of Electrical Engineering, Dean of General Affairs, Dean of College of Electrical Engineering and Computer Science, and Associate Professor of Department of Electrical Engineering, Tatung University, Taiwan. Dr. Chu also worked as an Engineer for Fuhua Engineering Company before entering the education sector.
Located at the intersection of Asia’s great kingdoms, Penang has long served as the link between Asia’s two halves and an important outlet to the markets of Europe and the Middle East.
A Brief History

Penang is one of Malaysia’s most diverse, cosmopolitan and exciting cultures. It culminates in George Town, Penang Island’s main city and an urban centre. The rest of the island has palm-fringed beaches and fishing villages, a mountainous jungle and farms growing exotic produce such as nutmeg and durian. And there is even more of the state to explore across in Penang’s mainland section, Seberang Perai.

“An island once dubbed by sailors and seafarers as The Pearl of the Orient”

UNESCO World Heritage Site

More than two centuries of unique history and heritage makes George Town a worthy recipient as a UNESCO World Cultural Heritage Site on 7 July 2008. From its humble beginnings as the first British Straits Settlement in the late 18th century, George Town went through tremendous transformations over the last two centuries, from a swampy frontier, to a bustling trading post, to the present city of living history, filled with nuances in every corner, worthy to be discovered by intrepid adventurers.
Quick Facts

Climate

Penang is hot and humid due to its geographical location and the monsoon climate. It is warmest in the months of July and August. The average temperature is above 30˚C during the day and above 25˚C at night. The rainy season lasts from November to February with increasing humidity when it is over.

Population

Penang’s population is nearly 1.75 million as of 2017. Its heterogeneous population is highly diverse in ethnicity, culture, language and religion. Aside from the three main races, the Chinese, Malays and Indians, Penang is home to significant Eurasian, Siamese and expatriate communities. A resident of Penang is colloquially known as a Penangite (in English), Penang Lâng (in Penang Hokkien) or Penangkaran (in Tamil).

Language

The common Penang languages, depending on social classes, social circles, and ethnic backgrounds are English, Penang Hokkien, Tamil and Malay. Mandarin, which is taught in Chinese-medium schools in the state, is also increasingly spoken.

Festivals

Penang’s vibrant festivals are a colourful reflection of the state’s multiculturalism. Traditional festivals such as Thaipusam, Hungry Ghost Festival, Nine Emperor Gods Festival, Chingay Parade and Chinese New Year have retained an authenticity that is unmatched in Asia.

Source:
https://en.wikipedia.org/wiki/Penang
In November 2012, TNB won a competitive bid to undertake the development, financing, construction and operation of a 1,071.43 MW Combined Cycle Power Plant project. TNB, through its wholly owned subsidiary, TNB Prai Sdn. Bhd. (TNBP) has undertaken the project development.

The project site is a brown field site located in the area of Perai, Penang, Malaysia which previously housed a 3 x 120 MW conventional oil-fired thermal power plant which was decommissioned in 2003.

The new Perai Power Station is running with the latest technology H-Class (SGT5-8000H) Gas Turbines equipped with Hydraulic Clearance Optimisation, with combined cycle efficiency up to 60% (LHV).

It is the highest dispatch merit order CCGT Plant in Malaysia with High Capacity Factor. The plant is capable of running with a wide range of natural gas Calorific Value as the main fuel. It is also the only similar plant in the world capable to run with back-up distillate fuel.

The plant is the first 50Hz H-Class CCGT in Asia. The plant is also one of the world fleet leaders in the 50Hz H-Class operating hours, i.e. at about 12,900 Equivalent Base Hours as of August 2017. The Gas Turbine Combustion Inspections were successfully carried out in July 2017.
The plant is a compact CCGT plant, whereby the 1,071.43 MW plant is installed in a small (16.65 acres) land area. It has two Generating Blocks, each block consists of single-shaft configuration that includes the Gas Turbine, Siemens’ Hydrogen Cooled Generator Rotor (SGen5-3000W) and Siemens’ Tandem-compound Steam Turbine (SST5-5000) coupled to the same generator via a self-shifting synchronous clutch. The Heat Recovery Steam Generator is supplied by GE Doosan. The NOx emission is well below the World Bank limit.

Both Generating Blocks achieved Commercial Operation Date on 20 February 2016, i.e. about 34 months of construction period.

TNBP currently has an Operation and Maintenance Agreement with TNB Repair and Maintenance Sdn. Bhd. (TNB REMACO).

“TNB REMACO, another TNB’s wholly owned subsidiary, is a global power plant service provider with presence in Southeast Asian countries, Pakistan, Saudi Arabia, Kuwait and India.”

TNB REMACO Repair Centre is capable of performing gas turbine hot component refurbishment, rotor repair and reverse engineering of spare parts. The company also provides solutions for repair and maintenance, testing and diagnostic, predictive maintenance and Government Certified Independent Plant Performance Testing.
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CONFERENCE OF THE
ELECTRICITY POWER SUPPLY INDUSTRY
(CEPSI) 2018

17 - 22 September 2018
Kuala Lumpur Convention Centre (KLCC)
Kuala Lumpur, Malaysia.

www.cepsi2018kl.org
aesieapsecretariat@tnb.com.my