

# Conference Program



กระทรวงพลังงาน  
MINISTRY OF ENERGY

International Conference on Energy 4.0

## Designing the Future of Thailand's Power Sector

January 24—25, 2019

Queen Sirikit National Convention Center | Bangkok, Thailand

Knowledge Partners:



Sponsors:



# Overview



International Conference on Energy 4.0

## Designing the Future of Thailand's Power Sector

January 24-25, 2019 | Bangkok

**Thailand** is recognized as a regional best practice leader in the power sector, and in particular for the scale-up of renewable energy, energy efficiency, and electric mobility technology. Thailand plans to dramatically increase the share of renewables in its energy mix, and to spur continuous innovation in energy technologies and business models, including by encouraging the decentralization of power production. This conference will showcase Thailand's regional leadership in the power sector, and will provide a platform for discussing the opportunities and challenges that the government, utilities, and the private sector must address in order to manage the transition toward a more sustainable power sector.

**Conference overview:** The two-day international conference in Bangkok is being jointly organized by the Asian Development Bank (ADB) and the Ministry of Energy of the Kingdom of Thailand. The conference will focus on a range of clean energy technologies, covering their potential and performance; key policy and regulatory issues; case studies of new and innovative business models; and models for financing and investment. Sessions will address areas where there are the most serious obstacles to progress, and how they can be overcome in order to accelerate clean energy investment in the Thai power sector.

**Conference vision:** The conference will bring together best practice and experience from Thailand and across the Asia-Pacific region to encourage a dynamic discussion about the design and development of Thailand's power sector. The conference will explore how utilities are approaching three key business areas that will be critical to a successful utility business model for the future: transport and mobility; the scale-up of renewable energy; and energy efficiency and digitalization.

**Conference structure:** The conference will have an inaugural plenary in the afternoon of Day 1 and a closing plenary in the afternoon of Day 2. The core of the conference will comprise parallel track sessions that will cover three areas of keen interest for Thailand's electric utilities:

- Utilities, mobility, and transportation
- Utilities and renewable energy
- Utilities, digitalization, and energy efficiency

# Conference at a Glance



International Conference on Energy 4.0

## Designing the Future of Thailand's Power Sector

January 24-25, 2019 | Bangkok

### Day 1—Thursday January 24, 2019

8:00 - 9:00 a.m.	Morning Coffee and Registration		
	<b>Track 1</b> Utilities, Mobility, and Transportation (Meeting Room 3)	<b>Track 2</b> Utilities and Renewable Energy (Meeting Room 4)	<b>Track 3</b> Utilities, Digitalization, and Energy Efficiency (Meeting Room 1-2)
9:00 - 10:30 a.m.	<b>Session 1.1:</b> Technology and Market Potential for Sustainable Mobility	<b>Session 2.1:</b> Technology and Market Potential for Renewable Energy	<b>Session 3.1:</b> Technology and Market Potential for Digitalization and Energy Efficiency
10:30 - 11:00 a.m.	Morning Coffee and Registration		
11:00 a.m. - 12:30 p.m.	<b>Session 1.2:</b> Business Models and Innovations in Sustainable Mobility	<b>Session 2.2:</b> Business Models and Innovations in Renewable Energy	<b>Session 3.2:</b> Business Models and Innovations in Digitalization and Energy Efficiency
12:30 - 2:00 p.m.	Lunch Break		
2:00 - 3:45 p.m.	<b>Inaugural Plenary:</b> The Role of Thailand in Southeast Asia: Preparing for the Transition Toward a Sustainable Power Sector (Meeting Room 1-2)		
3:45 - 4:15 p.m.	Coffee Break		
4:15 - 5:45 p.m.	<b>Session 1.3:</b> Last Kilometer Connectivity	<b>Session 2.3:</b> Grid Integration of Variable Renewable Energy	<b>Session 3.3:</b> Saving Energy and Costs in Municipal Street Lighting: Lessons from the Field
6:00 p.m.	RECEPTION (Sala Thai Room)		

### Day 2—Friday January 25, 2019

9:00 - 10:30 a.m.	<b>Session 1.4:</b> Policies and Financing for Sustainable Mobility	<b>Session 2.4:</b> New Opportunities in Financing Renewable Energy	<b>Session 3.4:</b> Policy and Regulatory Opportunities for Digitalization and Energy Efficiency
10:30 - 11:00 a.m.	Coffee Break		
11:00 a.m. - 12:30 p.m.		<b>Session 2.5:</b> Policy and Regulatory Issues in Renewable Energy	<b>Session 3.5:</b> Approaches to Financing Digitalization and Energy Efficiency
12:30 - 2:00 p.m.	Lunch Break		
2:00 - 3:00 p.m.	<b>Closing Plenary (Part 1):</b> Reflections from the Conference and Thai Utility Perspectives (Meeting Room 1-2)		
3:00 - 3:30 p.m.	Coffee Break		
3:30 - 5:30 p.m.	<b>Closing Plenary (Part 2):</b> Unlocking Energy 4.0 for Thailand and the Region (Meeting Room 1-2)		

**LEGEND:**

- Plenary Session** (Meeting Rooms 1-2)
- Track 1: Utilities, Mobility, and Transportation** (Meeting Room 3)
- Track 2: Utilities and Renewable Energy** (Meeting Room 4)
- Track 3: Utilities, Digitalization, and Energy Efficiency** (Meeting Room 1-2)

*Meeting Room 3*

9:00 – 10:30 a.m.

**Welcome from the Energy 4.0 Steering Committee:**

**Peter du Pont**

Managing Partner, Asia Clean Energy Partners

**Opening Remarks from Co-Chair of the Track:**

**Lloyd Wright**

Senior Urban Development Specialist (Transport), ADB

This session will begin with a presentation on a future vision for transport and mobility globally and implications for Thailand and the region. This will be followed by discussion of electric vehicles, battery technology, metro rail technology, and the future of autonomous vehicles.

**Moderator:** **Wei-Shiuen Ng**, Analyst and Modeller, The ITF Decarbonising Transport Initiative:  
Translating Climate Ambitions into Action

**Presenters:**

***A Future Vision for Transport and Mobility***

**Lewis Fulton**

Director, Sustainable Transportation Energy Pathways (STEPS), University of California at Davis

***Future of Electric Vehicles in Thailand***

**Yossapong Laonual**

President, Electric Vehicle Association of Thailand

***Battery Technology, Electric Vehicles, and Impacts on Thai Electric Utilities***

**Montree Sawangphruk**

Vidyasirimedhi Institute of Science and Technology (VISTEC)

***Shared Driverless Mobility Solutions: First and Last Mile Use Cases***

**Jean-Marc Devaux**

Sales Director, Japan, South Korea, Greater China, Easymile

***Pilot Electric Fleet Project for Thailand***

**Ingo Puhl**

Managing Director, South Pole Group, Thailand

## Session 2.1: Technology and Market Potential for Renewable Energy

### *Meeting Room 4*

**9:00 – 10:30 a.m.**

#### **Welcome from the Energy 4.0 Steering Committee:**

##### **Pradeep Tharakan**

Principal Energy Specialist, ADB

#### **Opening Remarks from Co-Chair of the Track:**

##### **Prasert Sinsukprasert**

Inspector General, Ministry of Energy, Thailand

This session will cover the current status and expected future trends in renewable energy technologies and markets and how they may shape power markets. The session will feature perspectives from the public and private sectors, as well as from the leadership of Thai electric utilities.

**Moderator:** **Leon Roose**, Specialist, Hawaii Natural Energy Institute

#### **Presenters:**

#### ***EGAT's Perspective on Scaling up Renewable Energy Technology and the Renewables Market in Thailand***

##### **Chatchai Mawong**

Director, Hydro and RE Power Plant Development Division, Electricity Generating Authority of Thailand (EGAT)

#### ***MEA's Perspective on Scaling Up Renewable Energy Technology and the Renewables Market in Thailand***

##### **Sirirat Ngamsaneh**

Assistant Director, Power Economics Department, Metropolitan Electricity Authority

#### ***Trends and Opportunities in Wind and Solar Power Markets in Thailand and Southeast Asia***

##### **Phil Napier-Moore**

Programme Leader, Renewable Power Asia Pacific, Mott MacDonald

#### ***Utility Model Disruption through a Combination of Distributed Energy Resources, Improved Power Reliability and Security***

##### **Yatin Premchand**

Managing Director, Black & Veatch Management Consulting

#### ***Key Issues in the Scale-up of Grid-Connected Renewable Energy, and Strategies for Managing High Penetration***

##### **Gu-Yoon Chung**

Head of Business Development, APAC, Enel Green Power

## Session 3.1: Technology and Market Potential for Digitalization and Energy Efficiency

*Meeting Room 1-2*

**9:00 – 10:30 a.m.**

### **Welcome from the Energy 4.0 Steering Committee:**

**Karan Chouksey**

Energy Specialist Consultant, ADB

### **Opening Remarks from Co-Chair of the Track:**

**Sarat Prakobchart**

Director, Department of Alternative Energy Development and Efficiency, Ministry of Energy, Thailand

This session will cover new technologies and technical innovations in energy efficiency, how big data and analysis are providing opportunities for improved productivity, the importance of efficient air-conditioning, and examples of integrating efficiency into urban infrastructure.

**Moderator:** **Melanie Slade**, Senior Program Manager, International Energy Agency (IEA)

**Presenters:**

### ***Technology and Market Potential for Digitalization and Energy Efficiency***

**Melanie Slade**

Senior Program Manager, International Energy Agency (IEA)

### ***Approaches to Scaling Up Investment into Integrated Urban Energy Efficiency Infrastructure***

**Mark Lister**

Managing Partner, Asia Clean Energy Partners

### ***Energy Efficiency in Refrigeration and Air-conditioner – from Perspectives of HFC Phase-down under the Kigali Amendment***

**Pipat Poopeerasupong**

Montreal Protocol Officer, Compliance Assistance Programme, Asia and the Pacific Office, UN

### ***EnvironmentHow New Technologies, Smart Meters, and Improved Data are Driving Improvements in Energy Efficiency and Productivity***

**Chonnapan Thanadchang**

Manager – Power Solutions, Schneider Electric Thailand

### ***How AI Can Contribute to Energy Optimization on the Power Demand Side: Practice and Outlook***

**Yanchao (Ethan) Xia**

Product Director, EQuota Energy Technology (Shanghai) Co., Ltd.

**10:30 – 11:00 a.m. Coffee Break**

## Session 1.2: Business Models and Innovations in Sustainable Mobility

### Meeting Room 3

11:00 a.m. – 12:30 p.m.

This session will feature discussion of the electric vehicle market in Thailand, the global potential for electric buses for public transport, plans for bus electrification in India, the application of electric vehicle technologies for bus rapid transit (BRT), and solar charging station networks for grid energy storage.

**Moderator:** **Gyeng Chul Kim**, Former President, Korean Transport Institute

#### Presenters:

#### *A Corporate Perspective on the Future Electric Vehicle Market in Thailand*

**Peter Galli**

Vice President - Communications, Nissan Motor Thailand Co.

#### *Global Potential for Electric Buses for Public Transport*

**Akash Passey**

Senior Vice President, Volvo Bus Corporation

#### *Plans and Prospects for Bus Electrification in India*

**Akshima Ghatge**

Principal, Rocky Mountain Institute (RMI)

#### *Aggregating Distributed Energy Resources (DER) and Vehicle-to-Grid (V2G) Technology: International Examples and Lessons Learned*

**Kazuyuki Takada**

Director, Planning Division Technology Strategy Center (TSC), New Energy and Industrial Technology Development Organization (NEDO)

#### *Energy-Storage-Based Solar Charging Stations for EVs with Business Innovations*

**Luke Lu**

CEO, Zbestpower Co., Ltd.

### *Meeting Room 4*

**11:00 a.m. – 12:30 p.m.**

This session will cover new business models and innovations in distributed energy, with a focus on renewables. Topics covered will include solar PV rooftop, floating solar PV, development of new utility business models, blockchain and peer-to-peer electricity trading, and solar PV and storage for islands and remote areas.

**Moderator:** **Wei-nee Chen**, Chief Corporate Officer, Sustainable Energy Development Authority  
Malaysia

#### **Presenters:**

#### ***Business Models for Decentralized Renewable Energy and Storage***

**Bundit Sapianchai**

President and CEO, BCPG

#### ***Analysis of Potential New Clean Energy Business Models for Metropolitan Electricity Authority (MEA)***

**William Derbyshire**

Director, ECA UK

#### ***Emergence of Floating Solar Photovoltaics (PV) as a Major New Power Resource***

**Erik Berger**

Sales Manager, Asia, Multiconsult

#### ***Democratization of Energy through Blockchain Energy Solutions and Peer-to-Peer Electricity Trading***

**David Martin**

Co-founder and Managing Director, Power Ledger

#### ***The Business Case for Electrifying Islands and Remote Areas Using Solar PV and Energy Storage***

**Ding Junwei**

Former CIO, Elion Clean Energy Company Limited



*Meeting Room 1-2*

**11:00 a.m. – 12:30 p.m.**

This session will focus on experience in Thailand and internationally with innovative approaches to designing and financing energy efficiency businesses that can be quickly adapted and scaled up.

**Moderator:** **Arthit Vechakij**, Member, National Energy Reform Subcommittee and Vice President of Renewable Energy Club, Federation of Thai Industry

**Presenters:**

***Making Energy Systems Intelligent and Efficient by Deploying Artificial Intelligence (AI) and Internet-of-Things (IoT) Technologies***

**Arjun P. Gupta**

Founder and CEO, Smart Joules

***New Business Models for Electric Power Utilities: Experience from Japan***

**Tomonori Kawakami**

General Manager, Power System Engineering group (R&D), Power System Operations Department, Kansai Electric Power Company

***Market Transformation in Energy Efficiency through Innovative Business Models – EESL's Experience***

**S.P.Garnaik**

Chief General Manager (Technical), Energy Efficiency Services Ltd.(EESL), India

***ESCOs as a Driver for Energy-Efficiency and Productivity Improvements in Thailand***

**Attaporn Rojanarak**

President, Thailand ESCO Association

***Building Digital Transformation with an Innovative Business Model***

**Arthur Lam**

Co-founder and Vice Chairman, Synergy Group Holdings International Limited

**12:30 – 2:00 p.m. Lunch Break**

## The Role of Thailand in Southeast Asia: Preparing for the Transition Toward a Sustainable Power Sector

*Meeting Room 1-2*

**2:00 – 3:45 p.m.**

### Description:

This session will set the stage for the two-day conference by describing the seismic shifts underway in the energy sector globally, how these are affecting Asia and in particular Thailand, and key challenges and opportunities raised by the "Energy Transition." The session will feature a range of public and private sector perspectives on the way forward to achieve Energy 4.0.

### Welcome and Remarks:

#### **Pradeep Tharakan**

Principal Energy Specialist, ADB

#### **Poonpat Leesombatpiboon**

Executive Director, International Energy Cooperation Office, Thailand Ministry of Energy, Thailand

#### **H.E. Ms. Donica Pottie**

Ambassador of Canada to the Kingdom of Thailand, Kingdom of Cambodia and the Lao People's Democratic Republic

### Opening Addresses:

#### *Energy 4.0 and Thailand's Energy Transition*

#### **Hon. Siri Jirapongphan**

Minister of Energy, Thailand

#### *ADB Support for a Clean Energy Transition for Thailand and the Region*

**Ramesh Subramaniam**, Director General, Southeast Asia Department, ADB, and **Michael Barrow**, Director General, Private Sector Operations Department, ADB

## Keynotes:

### *Transitioning from Utility 3.0 to Utility 4.0: Lessons from the Trenches*

**Andrew Vesey**

Former CEO, AGL Energy

### *A Corporate Perspective on Financing a Green Energy Transition*

**Harald Link**

Chairman, B Grimm Power Public Co., Ltd.

### *Perspective on the Energy Company of the Future*

**Somphote Ahunai**

Founder and CEO, Energy Absolute

**3:45 – 4:15 p.m. Coffee Break**

## Session 1.3: Last Kilometer Connectivity

*Meeting Room 3*

**4:15 – 5:45 p.m.**

This session will cover a range of approaches for "last kilometer connectivity"—that is, getting people from the end of the public transit system to their homes. Applications will include app-based mobility, electric three-wheelers, electric bicycle sharing, application of autonomous vehicle technology, and the importance of "greenways" that can make these solutions effective.

**Moderator:** **Lloyd Wright**, Senior Urban Development Specialist (Transport), ADB

**Presenters:**

### *Five Ways to Reduce Energy Consumption by First/Last-Mile Connectivity in the Transport Sector*

**Gyeng-Chul Kim**

Former President, Korean Transport Institute

### *Re-imagining the Future of Mobility*

**Monrawee Ampolpittayanant**

Country Head of Public Affairs, Regulatory Affairs and Social Impact, Grab Thailand

### *e-Pedicabs: a Sustainable Alternative Mobility Option*

**Khamphanh Vanthana**

Project Manager, Ministry of Public Works and Transport, Vientiane Sustainable Urban Transport Project, Lao PDR

***Bicycle Sharing Systems with e-Bike Technology*****Laurent Mercat**

President, Smoove

***An e-Scooter Sharing System in Singapore*****Ashwin Purushottam**

Lime

**Session 2.3: Grid Integration of Variable Renewable Energy*****Meeting Room 4*****4:15 – 5:45 p.m.**

This session will cover grid integration of renewables at both the transmission and distribution levels. Speakers will share international experience and identify methods that can be used by planners, system operators, and relevant stakeholders to understand the technical, economic, and policy and regulatory issues that must be managed as the share of variable renewable energy increases in the power system.

**Moderator:** **Julia Matevosyan**, Lead Planning Engineer, Electric Reliability Council of Texas**Presenters:*****Power System Operation with Large Amounts of Variable Renewable Energy (VRE): a Global Perspective*****Hannele Holttinen**

Principal Scientist, IEAWIND Task 25 OA, Recognis, Finland

***Thailand Renewable Grid Integration Assessment*****Peerapat Vithayasrichareon**

Lead Analyst - System Integration of Renewables, International Energy Agency (IEA)

***Hawaii Experience - High Penetration Variable Renewable Energy Grid Integration*****Leon Roose**

Specialist, Hawaii Natural Energy Institute

***Thailand Grid Code: an Assessment of the Grid's Absorptive Capacity for Variable Renewable Energy (VRE)*****George Garabandic**

Principal Consultant, Energy Advisory, ESS Lead for APAC and Australia, DNV GL Singapore Pte. Ltd.

**Session 3.3: Saving Energy and Costs in Municipal Street Lighting: Lessons from the Field**

*Meeting Room 1-2*

**4:15 – 5:45 p.m.**

This session will focus broadly on what it takes to design, finance, and effectively implement efficient municipal street lighting, drawing on successful examples from the Asia region and internationally, as well as from experience in Thailand to date.

**Moderator:** **Dan Millison**, Energy Consultant, ADB

**Presenters:**

***Best Practices in Efficient Street Lighting in Southeast Asia***

**Thomas Dreessen**

CEO, EPS Capital Corporation

***Impact of IoT on Street Lighting Energy Efficiency in Southeast Asia, and Implications for Thailand***

**Leo Ng Shee Zher**

End User Marketing Senior Manager, Philips Lighting

***Energy-Efficient Street Lighting in Thai Municipalities: Implementation Experience and Lessons Learned***

**Somma Phon-Amnuaisuk**

Director, Asia-Pacific, International Institute for Energy Conservation (IIEC)

***Smart Streetlighting: the Utility Opportunity***

**Eric Woods**

Research Director, Navigant

**6:00 p.m. Reception**

## Session 1.4: Policies and Financing for Sustainable Mobility

*Meeting Room 3*

**9:00 – 10:30 a.m.**

This session will cover the linkages between Energy 4.0 and Smart City approaches, the importance of standards for the future electrified transport system, the linkages of transport to the broader international climate and sustainable development goals (SDGs), and perspectives on financing sustainable mobility.

**Moderator:** **Akshima Ghate**, Principal, Rocky Mountain Institute (RMI)

**Presenters:**

*The Decarbonizing Transport Initiative: Translating Climate Ambitions into Action*

**Wei-Shiuen Ng**

Analyst and Modeller, International Transport Forum

*Policies to Support Electric Vehicle Implementation: What Have We Learned?*

**Jurg Gruetter**

Gruetter Consulting

*Promoting Energy Efficient Vehicles and Electric Mobility through Fiscal Policies*

**Bert Fabian**

Programme Officer, United Nations Environment Programme

*Financing Sustainable Mobility*

**Lloyd Wright**

Senior Urban Development Specialist (Transport), ADB

## Session 2.4: New Opportunities in Financing Renewable Energy

*Meeting Room 4*

**9:00 – 10:30 a.m.**

This session will cover the ins-and-outs of financing renewable energy, from an equity investment, banking, and legal perspective. Topics covered will include debt financing, project financing, green bonds, incentive schemes, and contractual risk factors.

**Moderator:** **Nguyen Ba Hung**, Trade Specialist, Public Management, Financial Sector and Trade Division, Southeast Asia Department, ADB

**Presenters:*****A Banker's Perspective: Experience Financing Renewable Energy in Thailand*****Obboon Vongsuriya**

First Vice President, Kasikorn Bank Thailand

***Green Financing: from Principles to Practice*****Andrew Kent Jan**

Head of Balance Sheet Management, TMB Bank

***An Equity Investor's Perspective on Financing Renewable Energy in Emerging Markets, and Lessons for Thailand*****Vignesh Nandakumar**

Aspada Investments

***ADB Experience Financing Clean Energy in Thailand and the Mekong Region: Lessons Learned and Key Opportunities Going Forward*****Daniel Wiedmer**

Unit Head for Greater Mekong Region, ADB

***Key Issues in Financing Clean Energy in Thailand: Legal Structuring, PPAs and Other Contractual Considerations*****Audray Souche**

Partner, Managing Director, DFDL Thailand

**Session 3.4: Policy and Regulatory Opportunities for Digitilization and Energy Efficiency*****Meeting Room 1-2*****9:00 – 10:30 a.m.**

This session will cover emerging energy efficiency opportunities in the context of global innovations with digitalization, data analytics, and how policies, regulations, and institutional arrangements are adapting to shape new incentives and markets.

**Moderator: Melanie Slade**, Senior Program Manager, International Energy Agency (IEA)**Presenters:*****Energy Policy and Regulation in Thailand: Current Trends and Future Opportunities*****Wisaruth Maethasith**

Professional Engineer, Department of Alternative Energy Development and Efficiency, Ministry of Energy, Thailand

***Model Regulations for Improving Regional Energy Efficiency*****Sudhir Sharma**

Energy &amp; Climate, Asia Pacific Office, UN Environment

***The Role of Digitilisation in Appliance, Energy Efficiency Programmes*****Archana Walia**

Director, India Program, CLASP

***Industrial Energy Efficiency in Singapore: Policy and Regulatory Achievements*****Roland Tan Thuan Tee**

Senior Manager (Industrial Energy Efficiency Unit), National Environment Agency

***Key Lessons Learned from China's Two Decades of Effective Energy Efficiency Initiatives*****Lin Lu**

Senior Operations Coordination Specialist, ADB

**10:30 – 11:00 a.m. Coffee Break****Session 2.5: Policy and Regulatory Issues in Renewable Energy*****Meeting Room 4*****11:00 a.m. – 12:30 p.m.**

This session will look at the current status of Thai policy frameworks and regulatory mechanisms to support renewable energy. This will be followed by international experience with power sector reforms, tariff issues and implications, incentives and market based mechanisms, and the emergence of renewable energy auctions as a key strategy for scaling up the deployment of cost-effective renewable energy resources.

**Moderator:** **Peerapat Vithayasrichareon**, Lead Analyst - System Integration of Renewables, International Energy Agency (IEA)

**Presenters:*****Current Issues Related to Renewable Energy and Power Grid Regulation in Thailand*****Khomgrich Tantravanich**

Deputy Secretary General, The Office of the Energy Regulatory Commission (OERC)

***Trends in Distributed Generation and the Emergence of the Prosumer*****Thanawat Keereepart**

Renewable Energy Policy Expert, Abt Associates, Inc., implementer of USAID Clean Power Asia

***Renewable Energy Outlook for Thailand and Overview of the Progress of the Policy Support*****Tarntip Settacharnwit**

Scientist, Senior Professional Level, Bureau of Energy Research, DEDE, Ministry of Energy, Thailand



***Overview of Renewables in Texas - Incentives and Market Based Mechanism in Energy Markets with a Focus on Ancillary Services***

**Julia Matevosyan**

Lead Planning Engineer, Electric Reliability Council of Texas (ERCOT)

***Renewable Energy Auctions: International Experience and Lessons Learned***

**Diala Hawila**

Programme Officer, Policy Advice, International Renewable Energy Agency (IRENA)

**Session 3.5: Approaches to Financing Digitalization and Energy Efficiency**

**Meeting Room 1-2**

**11:00 a.m. – 12:30 p.m.**

This session will cover a range of different approaches and trends related to financing efficiency, including market aggregation strategies, standards and deemed savings, data and digitalization of the ESCO business model, the use of PPP structures, and the essential role of government support for financing efficiency. Speakers will present experience from South Asia, Singapore, China, Indonesia, and Thailand.

**Moderator:** **Lin Lu**, Senior Operations Coordination Specialist, ADB

**Presenters:**

***ADB's Experience Financing Energy Efficiency in South Asia: Lessons Learned and Potential Applications for Thailand***

**Jiwan Acharya**

Principal Energy Specialist, ADB

***Enhancing Energy Efficiency Finance in Singapore: Energy Efficiency Financing Pilot Programme***

**Ann Gan**

Head/Resource Development- Energy and Utilities, Economic Development Board Singapore

***China Experience Using Data and Digitalization to Enhance the Role of ESCOS and Achieve Greater Savings***

**Ming Zhao**

Deputy Director, China Energy Management Companies Association (EMCA)

***GGGI - PEA Experience in Developing/Designing an Energy Efficiency Program for Thailand SMEs***

**Gulshan Vashista**

Green Investment Expert, Global Green Growth Institute (GGGI)

***A Bank's Perspective: Energy Efficiency Financing in Thailand***

**Ittiporn Intravisit**

First Vice President, Head of Corporate Credit Product Department, Kasikorn Bank Thailand

**12:30 – 2:00 p.m. Lunch Break**

## Reflections from the Conference and Thai Utility Perspectives

*Meeting Room 1-2*

**2:00 – 3:00 p.m.**

### Description:

This panel discussion session will feature the Co-Chairs of the three thematic tracks: Transport and Mobility; Renewable Energy; and Energy Efficiency and Digitalization. The Track Co-Chairs will share their take-aways on the key trends and examples presented and discussed during the forum. Senior representatives of the Thai electric utilities will share their vision and ideas on future directions for the industry in Thailand, and reflect on the issues discussed during the conference.

### Moderator:

**Peter du Pont**

Managing Partner, Asia Clean Energy Partners

### Panelists:

**Lloyd Wright**

Co-Chair, Utilities, Mobility, and Transportation

**Peerapat Vithayasrichareon**

Co-Chair, Utilities and Renewable Energy

**Melanie Slade**

Co-Chair, Utilities, Digitalization, and Energy Efficiency

**Patana Sangsriroujana**

Deputy Governor, Electricity Generating Authority of Thailand

**Kirapat Jiamset**

Governor, Metropolitan Electricity Authority

**Saranyphong Atchvsunthon**

Deputy Governor, Provincial Electricity Authority

**3:00 – 3:30 p.m. Coffee Break**

### Unlocking Energy 4.0 for Thailand and the Region

*Meeting Room 1-2*

**3:30 – 5:30 p.m.**

#### **Description:**

Two keynote speakers will provide powerful, inspiring visions for the future of our infrastructure: one on new tools for financing, and the other unpacking the myths behind what it means to be a smart city. These inspiring talks will be followed by a high-level panel discussion with a distinguished panel comprising representatives from the public and private sectors and engaged in policy, energy market development, and finance.

#### **Keynote Addresses:**

*Green Bonds: a Key Tool for Green Infrastructure Finance*

**Sean Kidney**

CEO, Climate Bond Initiative

*From Sprawl to Tall; and the Case for Heightened Mobility in the Smart City*

**Jason Pomeroy**

Principal, Pomeroy Studio, Singapore

#### **Panel Discussion: Road to Powering Thailand 4.0**

#### **Scene Setter:**

*Global Trends and Local Opportunities in the Energy Transition*

**Itamar Orlandi**

Global Head of Frontier Power and Head of Southeast Asia, Bloomberg New Energy Finance

#### **Moderator:**

**Itamar Orlandi**

Global Head of Frontier Power and Head of Southeast Asia, Bloomberg New Energy Finance

## Panelists:

### **Andrew Jeffries**

Director, Southeast Asia Energy Division, ADB

### **Csilla Kohalmi-Monfils**

EVP Strategy, Engie Asia-Pacific

### **Peeratarat Ittarattanachoke**

Country Manager, Gas Power System, GE Power

### **Poonpat Leesombatpiboon**

Executive Director, International Energy Cooperation Office, Thailand Ministry of Energy, Thailand

### **Ittiporn Intravisit**

First Vice President, Head of Corporate Credit Product Department, Kasikorn Bank Thailand

## Closing Remarks:

### **Hideaki Iwasaki**

Country Director, ADB

### **Poonpat Leesombatpiboon**

Executive Director, International Energy Cooperation Office, Ministry of Energy, Thailand



**Andrew Jeffries**  
Director, Southeast Asia  
Energy Division, ADB

Andrew Jeffries is the Director of the Southeast Asia Energy Division at the Asian Development Bank (ADB). The Division's operations include investments in energy infrastructure, policy advice and sector reform assistance, and promoting regional energy cooperation in the Southeast Asia region. Prior to joining ADB in 2007, Mr. Jeffries was a Senior Vice President in the New York office of Fortis Capital's Global Energy & Utilities Group, providing project finance for conventional energy infrastructure, and tax equity investments for renewable energy project developers, including assisting Fortis' European clients entering the North American market. He joined Fortis from GE Energy Financial Services, Inc. (formerly, the Global Energy Division within GE Capital's Structured Finance Group), a subsidiary of the General Electric Company, where he led the investment underwriting of equity investments and financings in the power and oil & gas sectors in the U.S. and internationally.



**Andrew Vesey**  
Former CEO, AGL Energy

Andy Vesey served as AGL Energy Limited's (AGL) Managing Director and CEO from February 2015 to August 2018. Prior to this, he was Chief Operating Officer and Executive Vice President at The AES Corporation where he led the company's Global Operations portfolio in 20 countries since November 2012. Mr. Vesey has over 30 years of experience in the electricity and gas utility industry. His broad experience covers generation, transmission, distribution, customer service, retail sales, corporate support functions, international project development, business start-up, product development assignments, change management and process re-engineering. Mr. Vesey held several executive leadership positions at AES including, Chief Operating Officer, Global Utilities leading AES businesses in 10 countries; Executive Vice President and President for Latin America and Africa; Chief Operating Officer for Latin America; Vice President and Group Manager for AES Latin America; and Vice President of the AES Global Business Transformation.



**Csilla Kohalmi-Monfils**  
EVP Strategy, Engie Asia-Pacific

Csilla Kohalmi-Monfils is the Head of Strategy, New Business and Digital at ENGIE Asia-Pacific. Before joining ENGIE in 2011 as Strategic Projects Director, Csilla held senior functions at various energy companies in Hungary, including MOL Group. Csilla started her career with Unilever where she headed up business development projects in Europe and Latin America. Later, at the Boston Consulting Group, she developed new business opportunities and managed change projects for corporate clients across the world. Csilla holds a BSc in Chemical Engineering and an MSc in Bioengineering from the Technical University of Budapest (Master thesis in Molecular Biology at CNRS—Institut Jacques Monod in Paris). She also holds an MBA from INSEAD, Fontainebleau.



**Harald Link**  
Chairman, B Grimm Power Public Co., Ltd.

Harald Link is a Thai-German entrepreneur, industrialist, and philanthropist. Link is the chairman, CEO, and owner of B.Grimm, a multi-national conglomerate active in healthcare, energy, building & industrial systems, real estate, e-commerce, and transport. He is an independent board director of Siam City Cement PCL and True Corporation PCL. He is known in Thailand as a public champion of ethical and compassionate business practices B.Grimm. Link is the third generation in his family to manage the B.Grimm group of companies. He joined B.Grimm in 1978 at age 23, and replaced his uncle Herbert Link as CEO in 1988 at the age of 33. In his time at B.Grimm as CEO, the business has expanded from annual revenues of \$40 million to nearly \$1.5 billion. Link pursued a strategy of partnering in joint ventures with leading global companies which he admired. B.Grimm built long-standing equity partnerships with companies such as Amata, CP Group, Ratanarak Family Merck, Carl Zeiss, Siemens, United Technologies, Sumitomo, Getinge, Beijing, KSB, and others. He continues to serve as an executive board member in many of these companies' Thailand operations today.



**Hideaki Iwasaki**  
Country Director, Thailand, ADB

Hideaki Iwasaki, Country Director, Thailand Resident Mission (TRM), ADB. Hideaki Iwasaki is ADB's Country Director for Thailand, overseeing its country operations in Thailand and selected sectoral initiatives of the Greater Mekong Subregion (GMS) program, covering Cambodia, People's Republic of China, Lao People's Democratic Republic, Myanmar, Thailand and Vietnam. He joined ADB in 2002. Mr. Iwasaki is an experienced transport sector expert with work experience both in policies and projects. From 2014 to June 2017, Mr. Iwasaki was Director for ADB's transport sector operations in Southeast Asia. During 2002-2012, he was a member of ADB's transport sector unit for South Asia, leading the development of several major transport infrastructure projects, including post- conflict reconstruction projects in Afghanistan. He also had a short stint in Myanmar in 2012-2013 to reestablish ADB operations there.



**Itamar Orlandi**  
Global Head of Frontier Power and  
Head of Southeast Asia,  
Bloomberg New Energy Finance

Itamar leads BNEF’s Southeast Asia and Frontier Power research streams, covering the region as well as innovative ways to achieve energy autonomy and integrate distributed resources with the larger grid. Itamar is based in Singapore. He has been with BNEF since 2011, and has previously led the company’s Applied Research work as well as the European power and carbon markets desk. In these roles he worked with investors, oil & gas and technology companies and development finance organizations on multiple market studies for clean energy investments. He holds the Chartered Financial Analyst designation as well as an MSc from the London School of Economics.



**Ittiporn Intravisit**  
First Vice President, Head of Corporate  
Credit, Product Department,  
Kasikorn Bank Thailand

Ittiporn Intravisit is currently Head of Corporate Credit Product Development at Kasikornbank, Bangkok, Thailand. He has been leading the development of Green Banking business model (Energy Efficiency and Renewable Energy Financing) at the Bank since 2015. He possesses over 25 years of banking experience with various roles in product development, SME Banking, Corporate Banking and Risk management. Prior to joining Kasikornbank in early 2008, he spent 15 years with Citibank Thailand in corporate banking business. Ittiporn has been a guest speaker and panelist under various local and international seminars and conferences related to financing of green projects.



**Jason Pomeroy**  
Principal, Pomeroy Studio, Singapore

Prof. Jason Pomeroy is an award-winning architect, academic, author and TV personality at the forefront of the sustainable built environment agenda. He graduated with Bachelor and Post-Graduate degrees with distinction from the Canterbury School of Architecture; received his Masters degree from Cambridge University, and his PhD from the University of Westminster. He is the Founding Principal of Singapore - based sustainable urbanism, architecture, design and research firm Pomeroy Studio. In addition to leading Pomeroy Studio, Jason is the author of ‘Pod off Grid: explorations in low energy waterborne communities’ (2016), ‘The Skycourt and Skygarden: Greening the Urban Habitat’ (2014) and ‘Idea House: Future Tropical Living Today’ (2011). He is a special professor at the University of Nottingham and the Universita IUAV di Venezia.



**Kirapat Jiamset**  
Governor, Metropolitan Electricity Authority  
(MEA)

Prior to being appointed as the MEA Governor, Mr. Kirapat served as the Deputy Governor and the Assistant Governor for Technology and Material Management. He was formerly the MEA Director of Bang Yai District, the Deputy Director of Samsen district and the Deputy Director of Khlong Toei District. He has been recognized for his outstanding work as a key member of the Overhead-to-Underground Power Line Conversion Team for the ASEAN Metropolis Project during 2016-2023, a committee member of the Smart Grid Master Plan, a key member of the Electric Power Distribution Improvement and Expansion Plan no. 12, the Chairman of the Electric Vehicle Promotion Panel, a member of the Indochina Distribution Development Advisory Board, a subcommittee member of the Smart Grid Development Studies under the Energy Policy and Planning Office, Ministry of Energy, and an organizing co-chair of the IEEE PES GTD ASIA 2019.



**Lloyd Wright**  
Senior Urban Development Specialist  
(Transport), ADB

Lloyd Wright is currently a Senior Transport Specialist within the Central and West Asia Department at the ADB. He supports the development of new initiatives for quality urban public transport systems and non-motorized transport integration. Mr. Wright has conducted post-graduate research at Osaka University and at the Bartlett School of Planning at University College London. He also possesses an MSc with Distinction in Environmental Assessment from the London School of Economics, an MBA from Georgetown University, and a BSc in Engineering from the University of Washington. He is the author and editor of several sustainable transport publications, including Car-Free Development and the Bus Rapid Transit Planning Guide.



**Melanie Slade**  
Energy Specialist, International Energy Agency (IEA)

Melanie has spent nearly thirty years in energy efficiency policy development and implementation in many parts of the world. She started out working in the UK Government on industrial energy efficiency and has worked with many other governments to establish similar programmes, perhaps most notably, the Government of China in the 1990s. She also spent six years chairing the Equipment Energy Efficiency Committee – the Australian and New Zealand Government committee overseeing the regulation of minimum energy performance standards and labels for lighting, equipment and appliances. One of the key policies Melanie led while in Australia was the phase-out of inefficient lighting. Australia was second only to Cuba in this endeavour and has shared its experience widely both in the developed and developing world. Melanie moved to the International Energy Agency (IEA) in February 2014 to manage the Energy Efficiency in Emerging Economies Programme. Melanie and her team work with policy makers in Brazil, China, India, Indonesia, Mexico, South Africa, Thailand and Ukraine to develop more effective energy efficiency policy, track its progress and assess its potential.



**Michael Barrow**  
Director General, Private Sector Operations Department, ADB

Michael Barrow is Director General for ADB's Private Sector Operations Department handling all of the Bank's private infrastructure and financial institutions investments, lending and guarantees. Michael is concurrently on the board of Asian Climate Partners, a climate change-focused private equity fund established in Hong Kong. He joined ADB in July 2003. Prior to joining ADB, Mr. Barrow worked for the Deutsche Bank group over the course of 15 years in London, Tokyo and Singapore, lastly as both Director of Project Finance and Transportation, with a project finance and PPP focus. He was Senior Vice President in the Structure Finance Department of Sumitomo Mitsui Banking Corp. in Singapore handling project financing. Michael was educated at the Lycee Internationale in Paris, France after which he obtained a MA in Oriental Studies from Oxford University England.



**Patana Sangsriroujana**  
Deputy Governor, EGAT

Patana Sangsriroujana started his career at Electricity Generating Authority of Thailand (EGAT) as Director, Transmission System Business Management Division in 2013. In 2016, he took over as Assistant Governor Transmission System Maintenance and is currently serving as the Deputy Governor – Strategy at EGAT. Mr. Pattana has a Masters degree in Public Administration in Public and Private Management from the National Institute of Development Administration (NIDA).



**Peerapat Vithayasrichareon**  
Lead Analyst - System Integration of Renewables, International Energy Agency (IEA)

Peerapat is a Lead Analyst in System Integration of Renewables at the IEA. He is leading the analysis of the challenges, opportunities and best practices for integration of variable renewable energy into the power system, covering technical, economic and institutional aspects. He has led the Prior to the IEA, he was a Senior Consultant at Intelligent Energy Systems (IES), an Australian-based energy consulting firm. Notable projects include modelling high renewables and the integration of power markets in ASEAN. His previous roles include a Research Fellow at the Centre for Energy and Environmental Markets (CEEM) at UNSW Australia and an engineer at Electricity Generating Authority of Thailand (EGAT). Peerapat had led the delivery of an Australian Government funded research project which examined the impact of high renewable penetration in the Australian electricity sector. He also has experience in power system operation and planning in Thailand. Peerapat holds a PhD in Electrical Engineering from UNSW Australia, M.Eng in Energy Economics and Planning from Asian Institute of Technology and B.Eng (Electrical) from University of Melbourne, Australia



**Peeratarat Ittarattanachoke**  
Country Manager, Gas Power System, GE Power

Prior to joining GE, Peeratarat (Joe) was working as Program Manager with Fabrinet (Thailand), responsible for business development, product & process improvements, and customer services for fiber-optic electronic industry. Peeratarat (Joe) joined GE (Thailand) in 2006 and has held various roles in GE Power Services and new project such as Long term contract, account manager, efficiency improvement, power services leader for Thailand, and new power plant projects in Thailand. Peeratarat (Joe) is currently the Country Manager of GE Gas Power Systems (GPS) Thailand, leading and managing the commercial team to deliver gas power growth, to align business plan with Thailand power development plan, technology advisor, and customer services excellence. Peeratarat has more than 15 years of experiences in Supply Chain Management and Energy Sector.



**Peter du Pont**

Managing Partner, Asia Clean Energy Partners

Peter du Pont has more than 30 years' experience developing sustainable energy and climate programs in the U.S. and Asia. He has carried out assignments related to the design, implementation, and evaluation of clean energy policy and plans, energy and climate finance, and climate change programs. He has worked in a variety of roles consulting and managing for non-profit and private consultancies and development agencies, with a focus on energy efficiency, renewable energy, finance and market incentives, and climate change. Among other roles, he currently serves as the Co-Chair of the Asia Clean Energy Forum and Asia Regional Coordinator for the Private Financing Advisory Network (PFAN). Dr. du Pont has a Master's degree in Public Health from the University of California, Berkeley, and a PhD in Energy and Environmental Policy from the University of Delaware. Peter is based in Bangkok, Thailand.



**Poonpat Leesombatpiboon**

Executive Director, International Energy Cooperation Office, Ministry of Energy, Thailand

Poonpat Leesombatpiboon was born in Bangkok, Thailand. He is an economist by training. He graduated from Thammasat University in economics with major in Econometrics and International Economics. Later he received the Royal Thai Government Scholarship to complete his MSc. in Operational Research at the London School of Economics (LSE). He then came back to serve the government and started his career as civil servant in the area of international energy cooperation. He also served as an assistant to three Energy Ministers and one Deputy Prime Minister of Thailand. He has gained extensive knowledge and experience in energy sector, international energy cooperation and politics from such positions. Later he got the scholarship from the Royal Thai Government once again to complete his PhD in Economics in the USA at the George Washington University.



**Pradeep Tharakan**

Principal Energy Specialist, ADB

As a Principal Energy Specialist at the Asian Development Bank (ADB), Pradeep Tharakan, manages ADB's energy sector programs in Thailand, Malaysia, Cambodia and Laos. Pradeep has spent the last 8 years working closely with senior government officials, private sector entities and the civil society in ADB's member countries, to design and deliver large public investment programs in clean energy, and provide policy advice. He is currently leading the development of a large solar park project in Cambodia as a public-private partnership, developing an investment project focused on distribution expansion and cross-border power trade in Laos, and advising MEA/PEA in Thailand on decentralized solar generation combined with storage, and energy efficiency investments. He is also working with the Malaysian government on their renewable energy roadmap for 2030. Previously, Pradeep was ADB's energy sector lead for Indonesia during 2012-2016, where he was responsible for a portfolio of nearly \$1.3 billion. Pradeep has a PhD in Energy and Natural Resources Management, a MBA, and a master's degree in Public Policy and Administration.



**Ramesh Subramaniam**

Director General, and Southeast Asia Department, ADB

Ramesh Subramaniam oversees ADB's relationship and public sector work (including all technical assistance, knowledge generation and dissemination, and grant and loan projects) in all countries of the Association of Southeast Asian Nations (ASEAN). He is also in-charge of ADB's support for all sub-regional cooperation initiatives in the region, including ASEAN, Brunei-Indonesia-Malaysia-Philippines East ASEAN Growth Area, Greater Mekong Subregion and Indonesia-Malaysia-Thailand Growth Triangle. With ADB for over 20 years, Ramesh has worked on several projects across the Asia-Pacific region. Infrastructure financing is among his primary areas of interest. He represents ADB on the World Economic Forum's Global Future Council on long term investment and infrastructure development. He has a PhD in Economics from McMaster University (Canada), and has had post-doctoral fellowships in development economics and corporate finance and industry at Yale University (USA) and University of St. Andrews (UK).



**Saranyphong Atchvunthorn**

Deputy Governor, Provincial Electricity Authority (PEA)

Saranyphong Atchvunthorn is Deputy Governor (Planning and Power System Development) of the Provincial Electricity Authority (PEA). He is an expert in electrical engineering with an excellent understanding of power generation and distribution systems, geographic information systems (GIS) and policy and planning. He also has experience in technical, financial, and economic analysis of power system projects and investments. He is a member of the Power Purchase Committee (covering Renewable Energy), a member of the Block Chain Technology and Energy Metrolife Seminar Committee under the Energy Committees of the National Legislative Assembly, and a member of the Policy and Strategy Planning Committee of PEA. He has a Bachelor of Engineering degree from Sripatum University, a Bachelor of Political Science degree from Ramkhamhaeng University, and a Bachelor of Education degree from Phranakhon Rajabhat University.





**Sean Kidney**  
CEO, Climate Bond Initiative

Sean Kidney is CEO of the Climate Bonds Initiative, an international NGO, working to mobilize debt capital markets for climate solutions. Projects include a green bond definitions and certification scheme with \$34 trillion of assets represented on its Board; working with the Chinese central bank on how to grow green bonds in China; market development programs in Brazil, Mexico, ASEAN and East Africa; and market tracking services for the green bonds industry. He was member of the 2017 EU High Level Expert Group on Sustainable Finance and is a member of its successor, the EU Technical Expert Group on Sustainable Finance. He is also a member of green finance advisory groups in China, India, Mexico and Kazakhstan.



**Hon. Siri Jirapongphan**  
Minister, Thailand Ministry of Energy

Dr. Siri Jirapongphan is the Minister of Energy of the Kingdom of Thailand. Prior to this, he served as Director at the Petroleum Institute of Thailand. Dr. Jirapongphan is a visionary leader with deep knowledge in petroleum, natural gas, and petrochemicals. His working experience includes positions as Chief of System Planning for the Petroleum Authority of Thailand; Planning & Coordination Manager of National Petrochemical PLC; Senior Vice-President of Bangkok Bank; Managing Director of Platemill PLC; and Executive Director of the Petroleum Institute of Thailand (PTIT). He has a Bachelor's degree in Science (Chemical Engineering) from the California Institute of Technology, US and holds a PhD degree in Chemical Engineering from the Massachusetts Institute of Technology, US.



**Somphote Ahunai**  
Founder and CEO, Energy Absolute

Somphote Ahunai serves as the Chairman of Executive Board and Chairman of Executive Officers at Energy Absolute Public Company Limited and has been its Chief Executive Officer since 2009. Mr. Ahunai served as Acting Vice President of Energy Absolute Public Company Limited since 2015 and served as its Acting Chief Marketing Officer since 2012 until 2014. Mr. Ahunai served as Director Purchase of Raw Materials at Energy Absolute Public Company Limited and has been its Director since March 12, 2008. He has been a Director at Nayangklak Wind Power Co., Ltd. since November 07, 2014. He has been a Director at Nayangklak Development Co. Ltd. since November 07, 2014. He has been a Director at Wind Nayangklak Co., Ltd. since November 05, 2014. He served as a Director at Eternal Energy Public Company Limited until October 10, 2006. He has an MBA from the University of Pittsburgh and a Bachelor of Engineering from Chulalongkorn University.



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