

ASIA CLEAN ENERGY FORUM 2019

PARTNERING FOR IMPACT

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Deep Dive Workshop

Monday, 17 June 2019, 2:00p.m. – 5:30p.m.
Multifunction Hall 3

Scaling Up Energy Efficiency with Simplified M&V Meters and ESCO Business Models



Points of contact:

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Background

This Deep Dive Workshop will bring together international and Asia-based experience to discuss how energy efficiency efforts can be scaled up for impact. The workshop will cover two primary areas: (a) how measurement and verification (M&V) tools and methods can be used to effectively create an “EE meter”; and (b) experience with testing and scaling up business models for energy service companies (ESCOs).

Measurement and Verification (M&V) is the meter of an EE Project and is required to be able to calculate the achieved energy savings (revenues) with any degree of accuracy or reliability. Without a M&V Meter, no responsible investor or financier will fund energy efficiency on a sustainable basis and energy efficiency will not be recognized as a sustainable or scalable market opportunity.

This DDW will demonstrate the relatively simple and transparent ways to measure and verify savings on the primary EE technologies according to the generally accepted M&V principles of the International Performance Measurement and Verification Protocol (IPMVP). It will also present the new global Certified Energy Savings Verifier (CESV) certification being provided (initially in Indonesia and France) by the Efficiency Valuation Organization (EVO) to professional individuals who have passed a rigorous exam demonstrating they have the competency to independently certify estimated and achieved savings of EE Projects.

Importance of ESCOs. Based on IEA estimates, over 60% of global energy service company (ESCO) business is situated in Asia, driven largely by the dramatic ESCO market growth in China. Presentations and discussions in the workshop will comparatively show which ESCO business models across key Asia-Pacific markets show the promise of growth, and how such models can be replicated in other nascent ESCO markets. Also, a Singapore case study intends to gather market feedback on possible next steps which include an improvement of the existing financing programmes and the design and implementation of new government and private sector interventions to scale-up energy efficiency financing in the country's manufacturing sector.

Objective

This DDW aims to provide energy efficiency market stakeholders, which include government agencies, development partners, debt and equity investors, energy service companies (ESCOs), energy efficiency technology and solutions providers, and commercial/industrial end-users an updated understanding of:

- Measuring and verifying savings using M&V principles of the International Performance Measurement and Verification Protocol (IPMVP).
- Details of the new Certified Energy Savings Verifier (CESV) global certification
- The energy efficiency financing gap and the ESCO performance contracting model
- Country ESCO presentations: A comparison of ESCO business models in Asia-Pacific
- Energy efficiency financing and market-based instruments

Agenda

2:00 – 2:05	Scaling up Energy Efficiency through Simplified M&V Meters Session Introduction by Moderator, Thomas K. DREESSEN
2:05 – 2:20	New Certified Energy Savings Verifier (CESV) Professional Certification Thomas K. DREESSEN, Treasurer and Past Chair of EVO
2:20 – 2:30	EESL Deemed Savings Approach Venkatesh DWIVEDI, Director (Projects & BD), Energy Efficiency Services Limited
2:30 – 2:40	EVO Deemed Savings Position Paper Mark LISTER, Secretary, EVO
2:40 – 2:55	Simplified EE Savings M&V for LED Lighting Retrofits Elena MARSELIS, Head of Systems Center MET, Pakistan and Africa, Signify (formerly Philips Lighting)
2:55 – 3:10	Simplified EE Savings M&V for Chiller Retrofits CHOONG Chow Neng, Director, Business & Operations, G-Energy Global PTE Ltd
3:10 – 3:40	Q&A/Discussion/Closing
3:40 – 3:55	Coffee Break
3:55 – 4:00	Scaling up Energy Efficiency through ESCO Business Models Session Introduction by Moderator, Alexander ABLAZA, Co-chair, APEIA

4:00 – 4:08	China's ESCO Business Models Ming ZHAO, Energy Conservation Association of China (EMCA)
4:08 – 4:16	India's ESCO Business Models Deepak TEWARI, Alliance for an Energy-Efficient Economy (AEEE, India)
4:16 – 4:24	Japan's ESCO Business Models Hidetoshi NAKAGAMI & Tetsuya MAEKAWA, Japan Association of Energy Service Companies (JAESCO)
4:24 – 4:32	Korea's ESCO Business Models Dien YOON, Korea Association of Energy Service Companies (KAESCO)
4:32 – 4:40	Malaysia's ESCO Business Models Zulkifli ZAHARI & ONG Ching Loon, Malaysia Association of Energy Service Companies (MAESCO)
4:40 – 4:48	Philippines' ESCO Business Models Alexander ABLAZA, Philippine Energy Efficiency Alliance (PE2)
4:48 – 4:56	Singapore's ESCO Business Models CHOONG Chow Neng, Sustainable Energy Association of Singapore (SEAS)
4:56 – 5:04	Taiwan's ESCO Business Models Veronica LIN (on behalf of WU Chun-yen), Taiwan Energy Service Association (TESA)
5:04 – 5:12	Innovative Solutions to Scale-up EE Financing in Industrial Sector in Singapore LIU Yang, Energy Studies Institute (ESI)
5:12 – 5:27	Q&A / Discussion
5:27 – 5:30	Synthesis/Closing

About the Organizers

The Efficiency Valuation Organization (EVO) is an international non-profit organization whose products and services help people engineer and invest in energy efficiency projects worldwide. EVO's Vision is to create a world that has confidence in energy efficiency as a reliable and sustainable energy resource. And EVO's Mission is to ensure that the savings and impact of energy efficiency and sustainability projects are accurately measured and verified.

The Asia-Pacific ESCO Industry Alliance (APEIA) was formed at a meeting convened during the Asia Clean Energy Forum in June 2018. APEIA now represents the ESCO markets of China, India, Japan, Korea, Malaysia, Philippines, Singapore and Taiwan, and believes that energy efficiency capital and solutions can be deployed at a more climate-responsive rate if ESCO markets across the region, and the global market, are strengthened with risk-mitigated, investment-grade ESCO business models and other barrier removal interventions.

The Energy Studies Institute (ESI) is an independent research institute within the National University of Singapore. With a focus on the areas of energy economics, energy security and energy and the environment, ESI conduct research and analyses of energy policies and their national, regional and global implications.

The Sustainable Energy Association of Singapore (SEAS) is a non-government and non-profit business association that represents the interests and provides a common platform for companies in Sustainable Energy sector to meet, discuss, collaborate and undertake viable projects together.

Speakers



Alexander ABLAZA
Co-Chair,
Asia-Pacific ESCO Industry Alliance

Over half of Alex Ablaza's 35-year professional career has been dedicated to accelerating energy efficiency (EE) markets across developing Asia. He led the identification, structuring and due diligence in support of financial close of over \$3 billion in EE investments and EE policy and market interventions in a growing list of countries which includes Bangladesh, China, India, Indonesia, Kyrgyzstan, Lao PDR, Malaysia, Nepal, Pakistan, Philippines, Singapore, Thailand and Vietnam. Wearing his non-profit hats, Alex currently serves as President of the Philippine Energy Efficiency Alliance (PE2) and as Co-Chairman of the Asia-Pacific ESCO Industry Alliance, which represents the energy services sectors of China, India, Japan, Malaysia, Korea, Philippines, Singapore and Taiwan. He is CEO of BlueSkyEnergy, which flows cross-border equity investments toward EE project portfolios. As EE anchor of multilateral lenders, he previously served as Asia-lead for EE and other clean energy investment operations for the global climate finance team of the IFC/World Bank Group and the Asian Development Bank.



CHOONG Chow Neng
Director, Business & Operations, G-Energy Global Pte Ltd

Choong Chow Neng is one of the pioneering staff of G-Energy Global, having joined the company since 2005. An action man who delves into solutions with practicality in mind for all his projects, Mr. Choong has a wealth of experience in the Heating & Refrigeration and Air Conditioning (HVAC) system industry since 1997. Mr. Choong Chow Neng joined the ESCO industry in 2003 as mid-management manager. But he was always deeply involved in performing Detailed Energy Audit for buildings (commercial/industrial) and takes it upon himself to identify potential areas in energy savings personally with his team. So sought after was he that his projects spanned numerous countries in Asia. A certified QuESS with ESU (NUS); Green Mark Professional and Certified Energy Auditor with BCA as well as Singapore Certified Energy Manager (SCEM); Mr. Choong believes in sharing his knowledge. He lectures for Singapore Certified Energy Manager and Green Mark Professional course mainly on modules like Energy Management and Economics, Energy Audit and Measurement, Efficient ACMV and Efficient Method to Maintain Indoor Relative Humidity.



Thomas K. DREESSEN

Chairman and CEO, EPS Capital Corp.

Thomas Dreesen is a globally-recognized energy efficiency (EE) and ESCO expert with over 35 years of experience in developing, financing and implementing EE projects as well as delivering related capacity building programs in over 25 countries in Asia (Indonesia, Malaysia, Thailand, Philippines, India and China), Europe, Latin America, the Middle East, United States and Canada. Mr. Dreesen currently lives in Jakarta and has been working in Indonesia since 2012 on various consulting assignments to develop/finance EE projects, develop the ESCO market and provide capacity building to hundreds of local consultants, ESCOs, bankers and government officials. He also created new debt products and funding mechanisms to scale up the financing of EE projects by local banks that include: i) project-based loans, ii) savings guarantees, iii) expanded credit risk coverage and iv) use of special purpose entities that aggregate EE projects to reduce risks and transaction costs, and increase investor rate of return. Mr. Dreesen is a long-standing member of the Board and Executive Committee of the Efficiency Valuation Organization (EVO) as well as its immediate Past Chair. He holds a BBA in Accounting, a MBA in General Business, and is a Certified Public Accountant.



Venkatesh DWIVEDI

Director (Projects & BD), Energy Efficiency Services Limited

Venkatesh Dwivedi is the the first project manager of EESL's flagship scheme UJALA as well as the National Program Manager for Streetlights National Program of India. With more than 26 years of rich experience, he has been earlier in the Oil and Energy Sector in India in various roles in Project Management, Business Development, Liaison with Government with Expertise in Business Strategy, Corporate Planning, Project Development, Business Liaisoning, Project Team Management, Key Account Management, OEM Relations, Technical Services and Techno-commercial bidding. Mr. Venkatesh Dwivedi is an Electrical Engineer from Faculty of Engineering & Technology, Jamia Millia Islamia, New Delhi and Masters in Business Administration from IIM Calcutta. He is also a BEE Certified Energy Auditor.



Mark LISTER

Managing Partner, Asia Clean Energy Partners

After starting out in corporate finance, Mark Lister specialized in energy efficiency (EE) almost 20 years ago and has become a leading advocate for expanded EE deployment. He has been involved with industry advocacy in Australia, worked on grassroots projects in sub-Saharan Africa, and lectured in postgraduate sustainable energy courses. After a stint working at ADB in the Philippines to facilitate and scale up climate technology and EE investments in Asia-Pacific, he led the Copenhagen Centre on Energy Efficiency, the global EE hub of 'Sustainable Energy for All' that aims to double the rate of global EE improvement by 2030. Mr. Lister is now a Managing Partner of Asia Clean Energy Partners, an international firm that provides consulting, advisory, and project origination

services related to the energy sector, working to support the acceleration of clean energy deployment and achieve greater speed and greater scale with a focus on markets in Asia and the Pacific. He has a Master's Degree in Social Science (Environmental Policy) from RMIT University and is also a Director of the Efficiency Valuation Organization (EVO).



LIU Yang

Senior Research Fellow, Energy Studies Institute, NUS

Dr. LIU Yang is a Senior Research Fellow in the Energy Studies Institute of the National University of Singapore (NUS). He leads research and consultancy projects in the areas of the integration of renewables and energy efficiency, energy market design, and policy evaluation. Some of his recent work includes impact assessment of long-term energy technologies portfolio in Singapore, prospects of the energy services market in ASEAN, as well as electricity market design and business models for smart grids. Dr. Liu has more than 15 years' experience with the energy industry, government bodies and academia in both developing and developed economies, including as an energy specialist at the International Energy Agency, where he co-authored the 2015 and 2016 IEA Global Energy Efficiency Market Reports, and provided technical assistance regarding the energy market reform to improve the system-wide efficiency. He earned his Ph.D. in Energy Economics from the Ecole Polytechnique of France. He speaks fluently English, French and Mandarin.



Tetsuya MAEKAWA

Head of Int'l Affairs Committee, Japan Association of Energy Service Companies

Tetsuya Maekawa served JAESCO, which just celebrated its 20th anniversary in May 2019, as one of the board members for several years, and now he is playing his role of the head of the International Affairs Committee of JAESCO. He joined TEPCO in 1979, since then he has been working in the demand side of electricity, or in the field of energy efficiency. Based on his technical background of building engineering, he joined various projects to promote energy efficiency of buildings. One of the highlights of his working carrier happened in 2000 when he was appointed to be the first President and CEO of Japan Facility Solutions (JFS) which is a subsidiary Energy Service company owned by TEPCO. JFS is still working well as one of the most active ESCOs in Japan. Another one is his contribution as Deputy President of the Society of Heating, Air-conditioning and Sanitary Engineers of Japan (SHASE) which is supported by some 15,000 members. He is a Technical Fellow of SHASE. In 2015 he joined Nippon Koei Co., Ltd, which is a major consulting company for Official Development Assistance (ODA). His experiences as consultant cover South East Asian and Latin American countries.



Elena MARSELIS

Head of Systems Center MET, Pakistan and Africa, Signify (formerly Philips Lighting)

Elena Marselis brings over 10 years of experience in Europe and the Middle East, of which the past 7 with Philips and Signify, having worked in various roles across IT, Marketing, Business Development and Operations. Her experience with ESCO business models goes back to 2013 when she started working with key government and private entities in the UAE on the first Energy Performance Contracts in the region. Ms. Marselis has been involved in key lighting ESCO/Public Private Partnership (PPP) projects of various structures and complexities as well as smart city initiatives across Middle East and Africa and has extensive experience in measurement and verification, contractual and legal aspects of ESCOs. She is currently the Head of Systems Center for Middle East, Turkey, Pakistan and Africa, Proposal Management as well as Operations of turnkey projects in the region.



Hidetoshi NAKAGAMI

President, Japan Association of Energy Service Companies

Hidetoshi Nakagami, Ph.D. founded in 1973 and currently serves as CEO of the Jyukankyo Research Institute Inc. He is a certified and authorized first class architect in Japan. He regularly lectures on energy situations and strategic options in Japan and has served as professor at Tokyo Institute of Technology and served as a guest professor at Waseda University. He served in the early 1990s on the Energy Efficiency Standard for Appliances in the Ministry of International Trade and Industry and as Chairman of Implementation Study Committee for Daylight Saving, Energy Conservation Center of Japan. He is a member of Science Council of Japan (SCJ), and he serves on the Chairman for Energy Efficiency and Conservation Committee, Advisory Committee for Natural Resources and Energy, Ministry of International Trade and Industry (METI). He is a member of Central Environment Council, Ministry of Environment (MOE) and a member of Council for Social Infrastructure, Ministry of Land, Infrastructure and Transport (MLIT). He is the President of Japan Association of Energy Service Companies (JAESCO).

Dien YOON (SeokJae YOON)

General Manager, Korea Association of ESCO



Dien Yoon is involved in energy efficiency (EE) and related policy development, business model development, ESCO project development and evaluation, and performance measurement and verification (M&V) in his capacity as General Manager of the Korea Association of ESCO (KAESCO). Established in 1999, KAESCO contributes to national economic growth, responds to climate change convention, facilitates the development of energy saving markets through cooperation with ESCOs, and responds to the need for ESCO market reforms toward sustainable development. The areas of service include: ESCO Project evaluation and Performance Management, Business status industry average disclosure, Periodic hands-on training for the ESCO professionals, Research project about ESCO business, Legal system research and

improvement activities, Provide and develop the technology to ESCO business, Training workshops and seminars to promote advanced energy saving technology, Provide advertising and PR service for the development of ESCO industry, International Exchange and Cooperation.



Zulkifli ZAHARI

President, Malaysia Association of Energy Service Companies

Zulkifli Zahari is the President of Malaysia Association of Energy Service Companies (MAESCO) a post he has held for the past 12 years. Zulkifli Zahari is an Architect by profession. He is also a practicing Green Building Facilitator and an Electrical Energy Manager registered with the Malaysian Energy Commission. Through MAESCO, he sits in various National Steering Committee as well as the Project Director for the Malaysian Industrial Energy Efficiency Improvement Project (MIEEIP), The Building Sector Energy Efficiency Project (BSEEP) as well as the forthcoming Energy Efficiency and Conservation Act to be enacted by the Malaysian government by 2020. He has over the years developed MAESCO as the main training provider for certified courses in Energy Management, Energy Auditor and Measurement and Verification recognised by the Malaysian Government. He is the founder and Managing Director of Zet Corporation, an ESCO which is part of a diversified Zet Group of companies. Within the group, he spearheads various specialized consultancy services to the local Power Utilities and Electrical Equipment Manufacturing Industries other than Architecture and Green Building Consultancy Services.



Ming ZHAO

Deputy Director, ESCO Committee of China Energy Conservation Association

Ming Zhao has been working on energy-related business for about 20 years, starting from consultant on environment management system, to energy efficiency especially energy management service. After her study in the UK on EMS in 2004, she started focusing on promotion of ESCO industry in China. She has been working on national policy recommendation, involving in the national five-year plan for energy efficiency. She has close contacts with both the ESCOs and the energy consumers, government agencies and international. She is also visiting researcher in Berkeley National Lab of the United States and KAPSARC in Saudi Arab, working on policy analysis and ESCO industry research. She has been working as team leader for bi-lateral projects as well, such as China-German, China-US, China-Japan etc. EPC pilot projects. She has been working as executive deputy director and secretary general of EMCA for more than 10 years, responsible for daily operation of this national ESCO industry association, including consulting, training, marketing, membership management, information dissemination and international cooperation. Right now she is deputy director of EMCA, responsible for international exchange and cooperation. She is also co-chair of Asia-Pacific ESCO industry Alliance (APEIA).