

## Oral presentations for Session 5.8.2 | Thursday, 27 October | Room 3611

### Session Chair:

AbuBakr BAHAJ (University of Southampton, United Kingdom)  
Johnny LH WONG (Housing and Development Board, Singapore)



### 5.8.2a Invited Talk (16:00 – 16:15)

Mr Frank Haugwitz  
Asia Europe Clean Energy (Solar) Advisory Co. Ltd., China

The Role of Solar PV during China's 13th Five-Year-Plan (2016-2020) at Home And Along The One Belt – One Road Across Asia

F. HAUGWITZ<sup>1</sup>

<sup>1</sup> Asia Europe Clean Energy (Solar) Advisory Co. Ltd., China

### Abstract

March 2016, the National People's Congress of China approved its 13th Five-Year-Plan (2016-2020) stipulating policy objectives and quantitative targets that will directly impact solar photovoltaic. China accommodates approx. 75% of global production capacities and due to the introduction of a Feed-in-Tariff in 2011, China became the largest market worldwide with 15.13 GW installed in 2015. By the end of 2015, China was home to a total installed solar PV capacity of 43.18 GW and has set an official target of 150 GW by 2020. Solar ambitions at home, China is as well actively encouraging a "go out strategy" suggesting to localise production and seeking local infrastructure project opportunities. The One Belt, One Road explicitly promotes solar power investments in these OBOR countries. The US\$40 billion Silk Road Fund, US\$50 billion Asia Infrastructure Investment Bank, "China-Pakistan Economic Corridor" US\$45 billion are corresponding financial vehicles designed to facilitate solar deployment across OBOR.

### Biography

Frank Haugwitz, Asia Europe Clean Energy (Solar) Advisory Co. Ltd. (AECEA), is based in Beijing / China since 2002. Mr. Haugwitz is an independent solar energy consultant known for his insights into the workings of the Chinese solar market. He is highly regarded as an expert on doing business in China and advises foreign entities on solar market developments in that country. He is a frequent speaker at international conferences and has been the Head of Intersolar's global conference development since 2010. He is a co-founder of the Asian Photovoltaic Industry Association based in Singapore.

### 5.8.2b Invited Talk (16:15 – 16:30)

Mr Yasser Gamil  
Z-One Holding FZCO, United Arab Emirates

PV Market Dynamics in Middle East and Africa

Y. GAMIL<sup>1</sup>

<sup>1</sup> Z-One Holding FZCO, United Arab Emirates

### Abstract

Between overpromises and very low accomplishments, the Middle East Solar PV market is struggling since 2007 until today. Apart from the very few successful small installations here and there, the market has a very long way to go in terms of government regulations, grid capacities, banking and political environment. On the other hand, the African market is growing very fast with huge market potential but with small installations. In the MEA region, where more than 1 billion people (15% of the world) are living, the current average installed PV power plants per year is only 500MW (1% of the world). In addition, only 200MW PV Cell production line and 1 GW Module production lines were installed in the last five years. The Middle East and Africa PV Market has a long way to go however it is vital to watch every steps.

### Biography

Yasser Gamil is the Managing Director of Z-One FZCO. Yasser's distinguished career spans over 25 years where he has held executive roles with various companies including Computer and Engineering World (a Publicly listed company in Egypt in 1999), Disctech FZE, a UAE based company with more than 200 production lines of CD/DVD and 300 Million USD TO in 8 years and Z-One FZCO, a holding company in Dubai, UAE with 30M USD turnover, 8 subsidiaries and offices across the Middle East and Africa. Yasser's early entry since the year 2000 into both the Ophthalmic and Solar industries has given him a head start in the Middle East and Africa and resulted in establishing him as an expert in the industry and the region. Yasser is a Civil Engineer who holds a Master's degree in Soil Mechanics from Cairo University and a Master's degree in Business Administration.

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**5.8.2c Invited Talk (16:30 – 16:45)**  
Mr Jan Napiorkowski  
Ariel Re UK Limited, United Kingdom

PV Project Power Outage Solutions

J. NAPIORKOWSKI<sup>1</sup>  
<sup>1</sup> Ariel Re UK Limited, United Kingdom

### Abstract

Ariel Re launches a new Power Outage Solution series for solar projects insuring agreed energy generation levels for multiple years. Solutions floor projects' IRRs in adverse P-scenarios. Ariel underwrites on a project by project basis without preconditions to suppliers and has appetite for both single utility scale projects and portfolios of commercial projects.

### Biography

After switching the automotive industry for reinsurance, Jan developed the insurance market for solar performance warranties since 2009 and was heading Munich Re's Asian Renewable Energy business out of Hong Kong for 6 years. In March Jan joined Ariel Re, a Lloyd's of London Syndicate and launched a new series of products in the space of power outage solutions for utility or C&I portfolios of solar projects. Jan is a trained theoretical physicist and holds a MBA in Insurance and Risk Management



**5.8.2d Invited Talk (16:45 – 17:00)**  
Mr Alex Shoer  
Seeder Cleaner Energy, China

The Challenges of Distributed Solar in China: What The Future Of Solar Looks Like And How To Scale It Up

A. SHOER<sup>1</sup>  
<sup>1</sup> Seeder Cleaner Energy, China

### Abstract

The distributed solar industry in China is growing fast but is incredibly fragmented and lacks any real trust. Distributed rooftop solar projects below 2mw are virtually forgotten, there is no way to easily compare one EPC with another and the credit risk for investors is still quite high resulting in high costs of capital. We will take an in-depth look at the industry's pain points and figure out how to overcome these challenges by consolidating players in the industry, automating information gathering, standardizing documentation, better qualifying leads and creating strict criteria to measure EPC companies.

### Biography

Alex Shoer is the co-founder and CEO of Seeder Clean Energy (<http://seedenergy.com>). Seeder facilitates distributed solar projects for building owners in China to easily – even at no cost – put solar on their rooftops to get cleaner and cheaper electricity. Seeder seamlessly connects the right solar manufacturers, engineers, and financiers and their newly launched solar calculator and web app automates and accelerates project development thus “seed”ing more quality solar projects. Seeder's network can provide PPA financing for projects as small as 100kw and over 10 mw.

Originally from Atlanta, USA, Alex Shoer studied finance at the University of Georgia and later received a certificate from Stanford GSB. He began his career in structured finance at State Street Bank in Boston, later moving to Shanghai, China in 2011 where he co-founded e8 Resources, a market-entry consultancy bringing U.S. and European environmental technologies to China. He co-founded Seeder in 2013.

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### 5.8.2e (17:00 – 17:15)

Dr Matthew Peter Peloso  
Sun Electric Pte Ltd, Singapore

Post-Net-Metering Scheme For Renewable Generation

M. P. PELOSO<sup>1</sup>, Z. ENG<sup>2</sup>, S. FAIRHURST<sup>2</sup> et al.

<sup>1</sup> Sun Electric Pte Ltd, Singapore

<sup>2</sup> The Lantau Group (HK) Limited, China

#### Abstract

Renewable energy adoption has proliferated on various energy schemes such as direct subsidies like a feed-in-tariff, and net-metering which provide for accounting of electricity generated by users. However, limitations and difficulties in commercial energy markets have led to market friction and grandfathering of net-metering schemes by many states. In this article, a wholesale solar model adopting virtual metering schemes is proposed and analysed. The scheme provides advantageous results for the efficient adoption of photovoltaic energy for a post-net-metering world.

#### Biography

Matt Peloso is the founder of the Sun Electric Group . He read the bachelor of Physics and started his career in the optics industry. His post-graduate research contributed to quantum communications and solar energy technologies. He studied Intellectual Property Law and Technology Management while consulting to technology businesses, and completed an MBA. Matt uses his broad skills to establish transactions in technology related fields.



### 5.8.2f (17:15 – 17:30)

Dr Tsuyoshi Shioda  
Mitsui Chemicals Inc., Japan

PV Module Due Diligence for Bankable PV Project

T. SHIODA<sup>1</sup>

<sup>1</sup> Mitsui Chemicals Inc., Japan

#### Abstract

Mitsui Chemicals' PV module due diligence for bankable PV project is described. There are two main parts in the due diligence, based on our long term expertise for PV industry. One is design assessment in terms of long term reliability of PV module and encapsulant. Especially, we confirm formulation and cure state of encapsulant which would lead to delamination between encapsulant and glass, encapsulant and solar cell, and encapsulant and backsheets. If PV modules to be tested were failed, the PV module manufacturer shall improve concerns. The other is consistency of PV materials between the qualified PV module and installed PV modules. With these assessments, a PV project can have long term reliable PV modules in terms of bankability. Many lenders have been using our due diligence for financing in Japan. In the conference, I'll show more details of our PV module due diligence, including practical examples.

#### Biography

Tsuyoshi Shioda received his M.Eng. degree in electronics in 1997 and his Dr.Eng. degree in chemistry in 2005 from Tohoku University, Japan. In 1997, he joined Mitsui Chemicals, Inc. He has been an expert of IEC TC82 where standardization for PV modules has been discussed since 2012. He has conducted researches related to reliability of PV modules and PV materials since 2008. Now he focuses on running new businesses concerning diagnosis of a PV power plant and a PV module utilizing his expertise.

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**5.8.2g (17:30 – 17:45)**

Mr Raymond Hudson  
DNV GL, USA

Securitization of Solar PV Projects

F. RAY<sup>1</sup>, R. HUDSON<sup>2</sup>

<sup>1</sup> DNV GL, Singapore

<sup>2</sup> DNV GL, USA

### Abstract

One of the most exciting developments in the financing of solar power projects is the application of the securitization approach to portfolios of PV projects. Securitization essentially refers to the process of converting a pool of illiquid assets into tradable securities. In the case of solar PV systems, a portfolio of residential and/or commercial scale systems is assembled and asset-backed securities are issued and rated based on the portfolio of underlying cash flows. Pooling assets in this way reduces credit risk as the rated bonds are linked to the combined solar PV system pool (rather than to the credit risk of an individual solar developer or single investment) and provide a liquid instrument that investors may easily trade in to and out of, which in turn enables access to lower cost of financial capital for solar plants. This approach is a state of the art financing mechanism for solar and

### Biography

Raymond Hudson supports the activities of the DNV GL's solar teams around the world as Solar Segment Director. DNV GL is the leading provider of renewable energy advisory and testing services. Mr. Hudson has been involved in renewables for over 25 years including solar and wind power as well as energy storage applications. He has held positions in engineering, operations, and management for solar equipment manufacturers with the last 7 years in the consulting area. Mr. Hudson holds Bachelors and Masters Degrees in Electrical Engineering from the University of Missouri.



**5.8.2h (17:45 – 18:00)**

Dr Debajyoti Sarangi  
Vikram Solar, India

AC Smart Module - The Future Of PV System

D. SARANGI<sup>1</sup>, B. DAS<sup>1</sup>, I. SAHA<sup>1</sup>

<sup>1</sup> Vikram Solar, India