



▼ Tuesday, 1 November 2011  
 ▼ Clean Energy Outlook and Renewable Energy Technologies/Commercialization

<p>10:15 - 10:45 Level 2, Theatre</p>	<p><b>Opening Ceremony</b>                  Guest of Honour:                  • <b>Dr. Vivian Balakrishnan</b>, Minister for the Environment and Water Resources                   Speakers:                  • <b>Gil-Hong Kim</b>, Director, Sustainable Infrastructure Division, Asian Development Bank                  • <b>Edwin Khew</b>, Chairman, Sustainable Energy Association of Singapore (SEAS)                  • <b>Michael Dreyer</b>, Vice President, Asia Pacific, Koelnmesse</p>
<p>10:45 - 11:10</p>	<p><b>Keynote</b>                  • <b>Dato Sri Peter Chin</b>, Minister for Energy, Green Technology, and Water, Malaysia</p>
<p>11:10 - 11:25</p>	<p><b>Keynote</b>  <b>Global Trends in Clean Energy Investment</b>                  • <b>Michael Liebreich</b>, CEO, Bloomberg New Energy Finance</p>
<p>11:25 - 12:30</p>	<p><b>Opening Plenary 1:</b>  <b>Asia's Growth Prospects in Clean Energy and How to Best Capitalize on it</b>                   Stay updated on the most recent policies, business prospects and project developments in Asia Pacific, and learn how your company can potentially capitalize on new opportunities in clean energy investment.                   Panelists include:                  • <b>Prof. Li Jun Feng</b>, Deputy Director, Energy Research Institute, National Development &amp; Reform Commission                  • <b>Robert Gleitz</b>, VP Marketing, Alstom Power                  • <b>Gil-Hong Kim</b>, Director, Sustainable Infrastructure Division, Asian Development Bank (ADB)                   Moderator:                  • <b>Michael Liebreich</b>, CEO, Bloomberg New Energy Finance</p>
<p>12:30 - 14:00</p>	<p>Delegate Lunch and Trade Fair Visit Level 4, Hall 401</p>
<p>14:00 - 15:30 Level 3, Room 301</p>	<p><b>Session 1: Solar Power Technology</b>                   This session will cover an array of existing solar technologies, opportunities and challenges, with a focus on key topics to position PV as a front runner technology in the Asian region. The session's focus will be on tropical endurance and management/ measurement of intermittency.                   Presentations and speakers include  <b>Solar Energy Technologies for South East Asia</b>                  • <b>Horst Kruse</b>, Director Sales Asia Photovoltaics, SCHOTT Solar AG                  • <b>Dr. Jjiang Fan</b>, Manager of Technology Centre of Energy, ConservationSingapore Polytechnic, School of Electrical &amp; Electronic Engineering                   Moderator:                  • <b>Christophe Inglin</b>, Managing Director, Phoenix Solar Pte Ltd</p>

14:00 - 15:30  
Level 3,  
Room 302

## Session 2: Wind Power Technology

As wind power technologies continue to play a major role in the world's future energy supply, key industrial players in the field will discuss advances in technology of wind projects and their commercial potential in Asia Pacific.

Presentations and speakers include

### Onshore Wind Power: Overcoming the Challenges and Technology Improvements

As the number of available prime wind locations has decreased, developers are looking to lower-speed sites. In a growing trend, low and medium wind-speed sites across the globe are being targeted for development.

The main challenges that manufacturers are facing in this new scenario are :

- Developing larger rotors, with improved aerodynamic profiles and lighter materials to minimize loads, as well as larger hub heights.
- Increasing the nominal power, reducing the cost per MWh produced.
- Improving reliability, using robust and validated technologies to achieve commercial availability on site in a short time.
- Complying with the grid code regulations, which are increasing the exigency of performance more and more.
- Making the construction and maintenance processes easier while minimizing the stoppage times.

The technological solutions that GAMESA has developed are oriented to cover all these inputs, with the final result of assuring reliability and, consequently, the highest availability of the WTG. These technologies are based on modular design, exhaustive validation programs and fulfilment of the regulations worldwide.

- **Ramón Terrones**, Regional Director for Asia Pacific & Oceania, Gamesa Corporation

### A Balancing Act: Managing Turbine Technology and Commercial Risks

China and India have continued to contribute to the exponential growth in wind energy and with that a fundamental shift in the wind turbine supply market. This seminar will explore issues critical to developers, owners and bankers involved in wind projects in understanding the significance of selecting the optimal wind turbine solution, balancing technical, commercial and ownership risks.

Learning objectives:

- Update on the wind turbine supply market
- Understanding China's top 5 manufacturers
- Review of emerging turbine technology trends
- Balancing act: how technological and commercial risks affect a project's bottom line
- **Alex Tancock**, General Manager, Wind Prospect Asia-Pacific

Wind Tracks & Tea-Break Sponsor





### Examining Latest Wind Technology in Improving Generation Reliability and Productivity

The presentation will deal with wind turbine technology trends over the last 10 years and how this has improved the productivity of the wind turbines. It will also talk about how this has helped reduce loads on the structure and drive train so that materials used have been reduced, resulting in a reduction on the cost price. At the end of the day, the CAPEX is not the driver but the CoE (Cost of Energy) is. By reducing the cost price, the CoE gets lower, but if the reliability is low it will affect the OPEX and drive the CoE up. Having smarter service tools will enable the operator to have higher uptime of the turbine and produce power thereby reduce the CoE.

- **Soeren Loenholdt Jacobsen**, Director of Power Plant Sales, Vestas Wind Technology Asia Pacific Pte Ltd

**Moderator:**

- **Dr. Chris Morris**, Chief Commercial Officer & Executive Director, Wind Prospect Group

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### Session 3: Grid Connection of Renewable Energy

This session offers an introduction to digitalized grid technology and hybrid systems technology. Learn from our experts what market developments and business opportunities are in store in Asia today, with respect to smart grid solutions, hybrid systems and long distance transmission.

Presentations and speakers include

#### High Penetration of Renewable Generation and its Impact on Electric Grid Performance – Global Perspective and Lessons-Learned

The presentation will demonstrate how the deployment of smart grid solutions enables improved grid wide-area reliability and security of the power supply impacted by integration of high penetration of renewable energy resources. Many global examples of smart grid technologies and applications will also be presented. In addition, each project example will showcase the value delivered, integration complexity, engineering and operational challenges and lessons-learned.

- **Dr. Bartosz Wojszczyk**, Global Director, Smart Grid Technical Solutions GE Energy

#### Impact of Increasing Renewable Electricity to the Grid – Issues and Options

Renewable electricity generated from wind power farms and photovoltaic systems are having a great impact on the electricity grids, when the delivered power goes beyond 5 – 10 %. The presentation shows the impact of this increasing renewable energy on the national grid, e.g. in Europe and the consequences. The required changes to the grid, the grid code and the whole energy market are presented. Options are discussed how to deal with this challenge in the future.

- **Prof. Christophe Menke**, University of Applied Sciences Trier, Germany/  
Joint Graduate School of Energy and Environment Bangkok

## Issues in Implementing Advanced Metering Infrastructure

While the potential benefits of smart grids have been much discussed and touted, the reality is that advanced metering infrastructure is the fundamental backbone of any large-scale urban smart grid. Only when the AMI is properly and successfully implemented, then can any demand response management be realized. This presentation examines the issues in the large-scale roll-out of AMI, including the interoperability of various suppliers' equipment.

- **Dr. Tseng King Jet**, Head of Division, Division of Power Engineering, NTU

### Moderator:

- **Dr. Michael Quah**, Deputy Director, NUS Energy Office

15:30 - 16:15

Networking Break and Visit to Trade Fair (Sponsored by Gamesa)

16:15 - 17:45  
Level 3,  
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## Session 4: Solar Power Commercialization

In harnessing the unlimited power of the sun, challenges remain in terms of driving down costs and bringing up reliability of PV systems. Hear from industry leaders on the strategies employed and key markets driving Asia's solar PV growth agenda.

Presentations and speakers include

### Opportunity of Solar Energy Utilization in Asia Pacific Countries (Cost Effective Solar Thermals vs. Photovoltaic)

LST is representing an up to date technique, by utilizing Sun Radiation to generate Energy (heat or cold). The high efficiency (double than PV) and long live time (> 25 years) of LST permits to apply and install this technology, at commercial buildings, at housing complexes, as well as at industries. Performance and details regarding LST and its realization are state of art. LST are environmental sustainable, economical feasible and technological reliable investments.

Large scale solar cooling plants with an area between 120 – 2,600 m<sup>2</sup>, of collector area are representative examples to illustrate SOLID's experiences. The selected reference solar cooling plants are located on three different Continents: America, Asia and Europe. Every region has different framework conditions and its unforeseen challenges, but professional experience and innovative ideas form the basis that each plant is operating well and satisfying the customer's demand and expectation. These records verify that solar cooling already is a proven technology!

Statistics, demand, future outlooks, etc. worldwide and also for SEA will be demonstrated. Capacity building, creating awareness and overcome barriers/obstacles are the main priorities in the SAS Solar Thermal market in the region of SEA.

- **Peter Jurgen-Husnik**, CEO, Solid Asia Pte Ltd



## Financial Structures and Asset Financing for Large-scale Solar Energy Commercialization

As the solar markets of Southeast Asia grow, manufacturers, investors, lenders, and utilities will find a range of different investment structures available for financing large projects. This session will discuss those structures using regional and international examples, and assess the relative merits of different financial structures in different markets.

- **Nathaniel Bullard**, Director of Content, Bloomberg New Energy Finance

## Solar Steam Plants, Large Scale Solar Projects – Market Developments and Opportunities in Asia Today

Concentrated Solar Power (CSP) use a free, clean and available source of energy: the sun. It has significant potential to provide clean, reliable electricity in SE Asia. To achieve this potential, the technology must achieve higher efficiency as well as scale-up to utility power output to lower both capital and operating costs. Technology innovation is needed for the receiver, the heart of a CSP plant, to utilize higher steam conditions, thus increasing plant efficiency. An innovative Central Receiver technology is the Tower, which utilizes higher temperatures and pressures to significantly increase efficiency over other technologies available in CSP. In addition, scale-up is a key market drive, with some CSP markets now pursuing much larger plant size of 250 MW per unit.

Mainstreaming solar power at utility scale also requires increasing the flexibility of the plant to dispatch to demand. To achieve greater operational flexibility, thermal storage or hybrid plant designs present the potential to dispatch solar energy more closely matching grid requirements. This presentation will discuss the key elements needed to develop a large scale CSP plant in Asia today using state of the art technology as well as look at the critical development needs to move CSP to a solid position as a competitive electricity supply option for utilities in SE Asia.

- **Robert Gleitz**, VP Marketing, Alstom Power

## Solar Energy Developments in South East Asia

A number of countries in South East Asia such as Thailand, Malaysia, the Philippines and Indonesia have begun to pursue wide-scale investment in solar power. With abundant sunlight almost daily, South East Asia's solar power players are guaranteed a consistent and effective return on investment, all the while making an enormously positive contribution to the preservation of the environment by employing solar photovoltaics for power generation.

This session will provide an overview of the market conditions, commercial potential and political situation in place for solar energy in South East Asia. Issues to be addressed include the bankability of large scale solar parks, the bottlenecks that occur during project development and the cost and production parameters investors and developers should consider.

- **Alexander Lenz**, President- South East Asia & the Middle East, Conergy

## India on a National Solar Mission

The National Solar Mission is a major initiative of the Government of India and State Governments to promote ecologically sustainable growth while addressing India's energy security challenge. It will also constitute a major contribution by India to the global effort to meet the challenges of climate change. The goal that has been set out is to implement 20,000 MW of Solar by 2022 in a three phased approach. The first phase of this mission aims to commission 1000MW of grid-connected solar power projects by 2013. A rapidly growing solar PV industry in India has take off both for project developers as well as manufacturers and technology providers that will be supplying them.

- **Dr. Tariq Alam**, CEO, Punj Lloyd Delta Renewables Pvt Ltd

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## Session 5: Wind Power Commercialization

This session will focus on a realistic estimation of the market size for wind power energy. An analysis of wind power's role in the global energy market will be discussed, as well as the potential and key challenges for wind power development in key Asian markets.

Presentations and speakers include

### Wind Farm Economics & Financing

Wind energy is the lowest cost form of renewable energy available today and has witnessed exponential growth in the past two decades, achieving over 200 GW of installed capacity in 2011 from a modest 6.1 GW in 1996. As wind turbine technology matures with existing wind parks expected to be re-powered over the next decade it is crucial that best practices in project development, financing and construction be implemented. This talk will introduce the varying methods of financing wind farm projects globally and in the region; such as feed in tariffs, CDMs and best practices on managing wind, infrastructure and other related project risks. Learning outcomes will include:

1. Review of the growing wind energy market in Asia-Pacific
2. Basic understanding of wind farm economic models and associated risks in wind farm development and delivery
3. Introduction to best practices in wind farm financing
4. Insight into relationship between wind risk, yield and project bottom line

- **Dr. Chris Morris**, Chief Commercial Officer & Executive Director, Wind Prospect Group

### Offshore Opportunities and Solutions for you to Capitalize on it

Administrations worldwide trying to ensure continued energy security while increasingly aware of the need to reduce our ecological footprint, are turning to renewable energies, among which increasingly offshore wind thanks to unique benefits. Offshore wind market potential exists worldwide and specifically in Asia; qualified partners with the right mindset can help make this market a reality.



Gain awareness on the challenges and opportunities to offshore wind development: finance, grid, potential bottlenecks, economics and technology

How GAMESA is leveraging its experience all along the wind energy value chain in 27 countries on four continents to help its customers in rising to offshore wind challenge and opportunities.

- Developing long-term relationships with stakeholders in a “win-win” equation
- De-risking technology
- Meeting demand by implementing effective and efficient supply chains
- **Ramon Terrones**, Regional Director for Asia Pacific & Oceania, Gamesa Corporation

### Feasibility of Offshore Wind Farms – Early Identification of Risks

More and more wind farms are now being situated offshore, where wind resources are stronger and wind turbines present less of an issue in terms of visual interference with surrounding landscape. Investment point for offshore wind farms are done at stages with limited knowledge. The session will describe the important aspect to understand properly at early phase of wind farm projects.

- **Soren Karkov**, Director, Clean Energy DNV

Moderator:

- **Prof. Li Jun Feng**, Deputy Director, Energy Research Institute, National Development & Reform Commission

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### Session 6: Renewable Power Storage and Transmission - Can Smart Grid Help?

This session will address the current status and future directions for smart grid solutions in Asia Pacific at the same time tracking the development and deliberating on how this technology can best be implemented in Asia today.

Presentations and speakers include

#### Renewable Energy and Smart Grids: Sorting the Wheat from the Chaff

Renewable Energy Technologies and Smart Grids have emerged as the buzzwords of the day and when 5 people are questioned, one gets 7 different explanations and definitions! At issue is whether one hears the story from the viewpoint of an advocate/marketer of specific technologies or from the end-user/consumer or even from a government funding agency or a venture capitalist seeking to get quick returns from his/her investment in one of these technologies. Energy Technologies and Grid Infrastructure are long-term plays and this presentation will attempt to highlight the critical challenges ahead. The key message is to understand local and regional peculiarities and needs and to recognize that there are no magic bullets and that energy diversity and 'system of systems' approaches are needed and that one should be cautious of hype and buzzwords. The road ahead for R&D is exciting; but full of potholes from the many special interests seeking R&D \$\$\$.

There remain many challenges for basic science as well as for technology innovation in systems engineering.

- **Michael Quah**, Deputy Director, NUS Energy Office

## Optimizing Renewable Energy Yield with Smart Grids

The utilization of the installed capacity of renewable energy systems can be problematic as the size of that installed capacity approaches or exceeds the level of demand in the network. Storage technologies at either grid or customer level seem to be a way of maximizing the opportunity of renewable energy as it is produced. For wind this can mean operating at higher loads during high wind periods that are uncorrelated with demand. Similarly for solar installations, the energy yield can be smudged across the day enabling a solar resource to be effective in covering evening peaks and the like. This is a relatively simple idea but one that is complicated to implement using the traditional approaches to centralized energy transmission and control. Deployment of smart grid technologies can provide a mechanism by which opportunities for higher demand can be capitalized upon.

The presentation will detail the efforts on King Island as a case study and then develop this idea as it can be applied to other power system arrangements including low and high density urban and industrial environments.

- **Tammy Chu**, Managing Director, Entura (Hydro Tasmania)

## Load Management the Smart Way and How it Applies to Asia

- Why storage is important for renewable energy
- Different energy storage technologies and their market development stage
- Pilot projects in Asia involving different storage technologies
- How utilities are using smart grid technologies for load management, integration of renewable energy and energy storage

- **Ravi Krishnaswamy**, Vice President, EPS, Asia Pacific, Frost & Sullivan



 **Wednesday, 2 November 2011**  
 **Renewable Energy & Sustainable Mobility**

09:00 - 09:10  
Level 3,  
Room 301-302

**Presenter**  
**Rethinking Energy and Environmental Impact**  
 • **Lynelle Cameron**, Director of Sustainability, Autodesk

09:10 - 10:00  
Level 3,  
Room 301-302

**Plenary 2: Developments in Future Clean Energy Solutions and How They will Affect Energy Markets and Policies in Asia**

**Panelists include:**

- **Prof. Dr.-Ing. Christoph Menke**, University of Applied Sciences Trier, Germany / Joint Graduate School of Energy and Environment Bangkok
- **Lynelle Cameron**, Director of Sustainability, Autodesk
- **Jannik Termasen**, Vice President, Government Relations, Government Relations / Asia Pacific, Vestas Asia Pacific
- **Dr. Sombat Teekasap**, Chairman, Renewable Energy Club Thailand, The Federation of Thai Industries

**Moderator:**

- **Peter du Pont**, Ph.D., Vice President, Clean Energy – Asia, Nexant Inc

10:00 - 10:45

Networking Break and Visit Trade Fair

10:45 - 12:15  
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Room 301

**Session 7: Other Renewable Energy Technology - Hydro, Tidal, Geothermal**

This session will present new developments and persistent challenges for wave, tidal and geothermal energy technologies while discussing at the same time the most promising methods in minimizing risk while engaging in other renewable energy projects in Asia Pacific.

Presentations and speakers include

**Early Successes in Hydrogen-Powered Product Commercialization**

Globally and over the past decades, billions of dollars have been invested in an attempt to turn hydrogen fuel cell technology into commercial products. One innovative company from Singapore (Horizon Fuel Cell Technologies Pte Ltd), has now succeeded. Emerging rapidly onto the global scene as a world-leader in micro-fuel cell commercialization, the company is now building on its early successes to gradually move up the power scale. Today the company supplies the widest variety of hydrogen powered products, serving clients in over 65 countries. Based on this first success, the presentation will cover which hydrogen fuel cell products, which technologies and which applications are a right fit today – and which solutions are in the pipeline for near term and long term introduction.

- **Taras Wankewycz**, co-founder, Horizon Fuel Cells

## Expansion-focused Growth: De-risking a Renewable Power Production Pipeline

Renewable energy development, especially where it is focused on greenfield projects, has large capital requirements and significant risks at the front end of a long development process. This requires investors to choose their projects carefully and develop the same efficiently. By diversifying a portfolio of renewable power projects across technologies, geographies and development stages Alterra Power continues to develop a pipeline of assets that deliver growth while also limiting risk. We focus on assets with sizeable resource potential, which allows for greater economies of scale in markets that provide opportunities for sustainable growth, and also limiting the effects of market volatility through low-risk facility expansions into the project portfolio mix. Facility expansions represent quicker, lower cost and lower risk opportunities for generation base growth than greenfield projects. These expansions thereby allow Alterra to reduce risk in growing its capacity to respond to market conditions, while continuing in parallel the advancement of its greenfield projects that will ultimately deliver the next platforms for expansion-driven growth.

- **Edward McCartin**, Senior Development Advisor, Alterra Power Corporation

## Challenges for Wave and Tidal Energy Development

This presentation informs the complex nature of the project delivery for tidal and wave energy projects and the benefits of enabling project engineering to be either informed by or undertaken in parallel with a detailed environmental impact assessment.

A key challenge throughout the delivery of wave and tidal projects is the lack of a clear regulatory framework surrounding wave and tidal energy facilities at local and national levels. This includes a lack of guidance to project developers on their potential obligations and the ability of development and environmental approval processes to comprehending such facilities.

The presentation will outline these challenges drawing from direct past experience on the preparation of the environmental impact assessment and development approvals necessary to facilitate the development of pilot wave and tidal energy generators and how a multifaceted environmental impact assessment incorporating marine biota, terrestrial ecology, indigenous heritage and social impact can minimise the environmental impact of such projects and reduce the risk of damage to infrastructure and physical engineering challenges.

- **Tammy Chu**, Managing Director, Entura (Hydro Tasmania)

### Moderator:

- **Dr. Aiming Zhou**, Energy Specialist, Asian Development Bank



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### Session 8: Bio Energy

#### The Next Frontier for BioRenewables

Biomass feedstock owners and Refineries stand to benefit massively in the rapidly growing BioRenewable industry, which not only produces Fuels, Chemicals and Plastics, but also any kind of other everyday products. Learn from our experts on how to reap the benefits of the Bio Energy Revolution in Asia Pacific today.

**Panelists include:**

- **Edgare Kerkwijk**, Managing Director, Asia Green Capital
- **Steve Peters**, Director, Stratcon Singapore Pte Ltd
- **Derek Atkinson**, Business Development Manager Asia, PURAC

**Moderator:**

- **Per Dahlen**, Managing Director, AUM Business Creations Pte Ltd.

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### Session 9: Waste to Energy

As urbanization in Asia is expected to increase more rapidly in the next decade, this session looks at cutting edge solutions for urban energy needs present in innovative waste-to-energy solutions.

Presentations and speakers include

#### Wastewater-to-energy Industry in ASEAN

Over the past 5 years, AES Climate Solutions has developed Wastewater-To-Energy projects in South-East Asia within CDM (Carbon Development Mechanism). To date 27 stand-alone projects are currently in operation in Malaysia, Indonesia and Vietnam, and three more projects scheduled for construction.

Historically the wastewater from local food processing factories (tapioca starch and palm oil mills) was treated in an open lagoon system in order to reduce the organic pollution (COD content). During the natural digestion process, huge amounts of biogas are emitted to the atmosphere and caused odor problems to local communities.

To treat the wastewater, AES invested in advanced anaerobic digesters to capture biogas for combustion and renewable energy purposes. For starch wastewater UASB tank systems are being used, where we apply in-ground lagoon digesters for palm oil waste water. In 2011, we aim to produce around 70 million cubic meters of biogas, equivalent to 600,000 CERs. Although at the initiation of these projects, only a small number of the factories were aiming to use the biogas as alternative source of energy, today most factories are using or aiming to use the biogas for heat and electricity production. Without CDM, this revolution would not have happened.

- **Koen Janssen**, Director, AES Climate Solutions ASEAN

#### Biomass Gasification for Small Scale Distributed Power Generation

Gasification systems provide a viable, reliable source of renewable energy not only by using traditional biomass, but it can also capitalize on waste streams from other processes. Gasification creates a high temperature, low energy gas stream that can be used directly in thermal applications. An overview of typical gasification systems is presented. Adaptation for use with reciprocating gas engines is discussed.

- **Dr. John C.Y. Lee**, Sales Manager, Caterpillar Inc.

**Financing Small-to-Mid-Sized Bio Energy Projects in Asia**

The biggest number of opportunities in bio energy projects in South East Asia lies in the 1-10MWe range: anything less and the small scale makes it hard to be commercially viable and anything larger leads to feedstock security issues. Being able to source debt project financing is key to the success of these projects, but this can be difficult, particularly in the less developed markets.

- **Tor Pramoj**, Chief Investment Officer, Nollen Group

**Sustainable Conversion of Agricultural Residues to Cellulosic Ethanol and Biochemicals Using 3G Biorefining Technology**

There are significant demands in the future on sustainable energy sources due to rising population and need for food, adverse oil dependency, climate change, as well as deforestation. The future energy solution has to be based on renewable resources which do not compete with food crop production. Environmentally and socially sustainable biofuel production can take over only when the economical sustainability is realized, as well. A biorefining platform based on the third generation (3G) technology enables conversion of all biomass components and a highly profitable production of cellulosic ethanol, biochemicals and solid biocoal, while all the chemicals and process waters are circulated. Asia has a wealth of residual biomasses, such as straw, bagasse, EFB and corn stover, available for sustainable transportation biofuel production. The presentation focuses on the advantages of 3G technology in comparison to 1<sup>st</sup> and 2<sup>nd</sup> generation technologies describing also the benefits in various Asian countries. In addition challenges in commercialization of such technology are presented.

- **Pasi Rousu**, President, Chempolis Asia & Pacific

**Moderator:**

- **Lim Chiow Giap**, Senior General Manager, Keppel Integrated Engineering

12:15 - 14:00

Delegate Lunch and Trade Fair Visit

14:00 - 15:00  
Level 3,  
Room 301

**Plenary 3: Sustainable Mobility: Is Wishful Thinking Driving the Boom?**

Great progress has been made on the way to full commercialization of sustainable mobility solutions. But technology and market conditions still pose real challenges. Discussions among our expert panel members will range from the future supply of lithium to the suitability of e-mobility solutions for commercial vehicles. Additional case studies will explore results and provide an outlook on the future.

**Presenter:**

- **Vivek Vaidya**, Vice President, Automotive Practice Asia Pacific, Frost & Sullivan

**Panelists include:**

- **Vivek Vaidya**, Vice President, Automotive Practice Asia Pacific, Frost & Sullivan
- **David Chou**, Managing Director, EV World Pte Ltd
- **Colin Sears**, Recruitment & Global Business Development Manager, Portland Development Commission
- **Bill Reinert**, National Manager, Advanced Technology Group, Toyota Motor

**Moderator:**

- **Lloyd Wright**, Senior Transport Specialist, Asian Development Bank



<p>14:00 - 15:30 Level 3, Room 303</p>	<p><b>Session 12 : Energy-Efficiency Dialogue: Policy and Regulatory Issues Facing Energy-Efficiency Businesses and Projects</b></p> <p>The panel will focus on developing energy-efficiency businesses ventures and projects, and how policy, regulation, and programs can incentivize further private sector scale-up of energy efficiency. The panel will be in discussion/Q&amp;A format, and will not include presentations.</p> <p><b>Objectives of the Asia Business-Policy Roundtable</b></p> <p>The Dialogue will consist of two 90-minute sessions, one addressing energy efficiency, and one addressing renewable energy. The format will be an interactive panel discussion.</p> <p>The panel will include private-sector viewpoints on developing energy-efficiency businesses ventures and projects. Panelists will share their experience with a focus on presenting practical ideas and solutions. National policymakers and regulators will provide responses and feedback and also provide brief updates on the policy and regulatory framework for energy-efficiency in their countries. The discussion will address the question of what is best practice in energy-efficiency policy and regulation from the perspective of a business person or investor.</p> <p><b>Panelists include:</b></p> <ul style="list-style-type: none"> <li>• <b>Ananda Ram Bhaskar</b>, Head, Energy Efficiency Programme Office, Resource Conservation Department, National Environment Agency, Singapore</li> <li>• <b>Bartosz Wojszczyk</b>, Global Smart Grid Technical Solutions Leader, GE Energy</li> <li>• <b>Steven Sim</b>, CEO, International Copper Association, Southeast Asia</li> <li>• <b>Glen Plumbridge</b>, Partner and Director, Sustainable Development Capital, LLC (SDCL), Hong Kong</li> <li>• <b>Andrew Hutson</b>, Project Manager, Corporate Partnerships, Environmental Defense Fund (EDF), Washington, DC, USA</li> </ul> <p><b>Moderator:</b></p> <ul style="list-style-type: none"> <li>• <b>Michael Totten</b>, Senior Advisor, Conservation International – Singapore</li> </ul>
<p>15:00 - 15:30</p>	<p>Networking Break and Visit to Trade Fair</p>
<p>15:30 - 17:00 Level 3, Room 301</p>	<p><b>Session 10: Electric Vehicles: State of Technology</b></p> <p>This session will discuss how battery technology is crucial to the success of EV development and what is new for fast charging technology solutions. What are visions for used batteries? Is there a business case for storage houses? Is there money in recycling? Experts will share lessons learned with respect to installing charging networks and state of the art EV technology.</p>

Presentations and speakers include

## **The Importance of Intelligent Charging Networks for the Smart Grid of the Future**

As improvements in performance and battery technology lead to lower costs for consumers and more electric vehicles go on the road, the charging infrastructure and system requirements will increasingly become a concern for municipalities, utilities and vehicle manufacturers. Hence, the need for a reliable electric vehicle charging infrastructure to offer demand/response management to manage electricity flow in the grid and microgrid management is even more critical. Drawing from experiences in setting up networks in various parts of Asia and Europe, Oliver, Managing Director of Greenlots, a leading supplier of advanced electric vehicle charging infrastructure, will touch on various country case studies and the trend of smart electric vehicle charging.

- **Oliver Risse**, Managing Director and Co-founder, Greenlots

## **Open System and Service Platform for eMobility**

Web-based software is ideally suited to support open business ecosystems. Every stakeholder like drivers, service providers, parking lot operators, fleet managers, and utilities has access via a web-portal to the relevant information and business processes. Today, with services in the cloud all one need is a web-browser on a computer or smart phone.

Allowing the business to reach out to the driver in the car or at the charging station, the charging infrastructure and electric vehicles are also online, a node in the internet and part of this business ecosystem.

The target customers and end users of the platform are people who drive or rent electric vehicles. The internet-based software not only helps drivers find available charge spots, but also lets them reserve spots in advance. That is particularly significant in megacities, where parking space and thus space for charge spots is limited. The driver gets one solution for all charging needs in public places, his or her home and work place to overcome current range restrictions of EVs.

- **Dr. Stefan Ferber**, Product Manager for eMobility, Bosch Software Innovations GmbH

## **Evaluation of Plug-In Electric Vehicles on a Societal Basis**

Plug in electric vehicles (PEVs) are expected by many government agencies to totally replace traditional internal combustion products within the next two decades. However there are many obstacles that must first be overcome. Cost, range, performance (especially in weather extremes), reliability and infrastructure are variables that are yet to be optimized. More importantly the role of customer demand in pulling product to the market has been under emphasized and overestimated. Early market evaluations indicate that only a small portion of customers are willing today to replace their car with one solely dependent on electric power.

In the near term, Plug-in hybrids that utilize a conventional engine paired with a small traction battery offer the best bet for vehicle electrification. For the pure battery electric car to succeed it must be perceived by the customer as part of a larger system that adds value to their life.

- **Bill Reinert**, National Manager, Advanced Technology Group, Toyota Motor



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**Moderator:**

- **Lloyd Wright**, Senior Transport Specialist, Asian Development Bank

### Session 11: Renewable Fuels

This session will look at alternative fuel solutions and discuss the technological progress to date. Experts will focus specifically on current viable solutions in the area of biofuels, jatropha ethanol and algae fuels.

Presentations and speakers include

#### **The US Renewable Energy Program, Real this Time or Another Dead End**

This presentation will review current US government efforts to reduce US dependence on imported petroleum by reducing consumption and developing renewable energy with emphasis on biomass conversion to energy.

The US renewable energy program has been up and down since the 1970s, tied to politics and energy prices. With the increased energy demands of the developing countries and reduced supplies, the US is now making a concerted effort to develop alternative energy supplies, with corn ethanol being an entry point into biomass produced energy.

- **Kathleen Robbins**, Jatropha Pepinye

#### **Algal Fuel- The Way Forward**

To date, photosynthesis remains a major means for recycling of carbon dioxide from the atmosphere. Microalgae have a higher growth rate than land plants and their photosynthetic productivity can be up to 100 times that of the higher plants. Microalgae accumulate up to 70% of biomass as oil and are regarded the feedstock for 3<sup>rd</sup>-generation biofuel. The potential of microalgae however has not been fully explored in the industry. Naturally occurring microalgae possess a photosynthetic system that is saturated at a relatively low light intensity corresponding to the light intensity in the early morning in sunlit region, thus unable to take advantage of high solar irradiance. Moreover their relatively low rate of dark reaction compared to the light harvesting process and slow rate of response to changing light intensity in the day lead to low light utilization efficiency (2-5% of photosynthetic available radiance), low volumetric productivity, low cell density and high harvesting and dewatering cost. The general consensus among applied phycologists is that productivity and cost would need to be improved by 10 folds for algal biomass to be a feasible CO<sub>2</sub> remover and source of biofuel feedstock. It is well established that the rate-limiting step in photosynthetic fixation of CO<sub>2</sub> is the turnover of carbon reduction cycle in the dark reaction. The R&D focus on algal fuel should be to increase energy density of microalgae through genetic modification of photosynthetic system and tailor-designed bioreactor and process. Biorefinery could be incorporated to partition and convert algal biomass feedstock into a spectrum of valuable products, e.g. pigment, functional polysaccharide, protein and pharmaceutical. These manipulations and approaches may bring the economy of microalgal fuel production closer to the conventional fossil fuel.

- **Dr. Lee Yuan Kun**, Department of Microbiology, National University of Singapore

## Biofuels Production - Waste/Biomass Gasification

- Clean Renewable Biofuels and/or Electric Energy from Waste, Biomass & Coal Utilizing Solena's Plasma Gasification (SPGV) Technology and its Integrated Plasma Gasification Combined Cycle (IPGCC) Process. Waste is completely reduced to gas and slag
- Plasma torch heating up to 5000 Degrees Celsius producing Syngas for competitive electric energy production
- Through Fischer-Tropsch Synthesis, production of Bio Fuels
- Pilot Project: Green Sky Project Heathrow processing 0.5 million tons of waste per year
- **Grisha Khalen**, VP of Business Development for Europe, Solena Group, Inc

## What Does it Take to Implement a Sustainable Business Model for Second Generation Biofuels?

Challenges that plague global Bioenergy market are fragmentation of supply chains, non-inclusive business models, portfolios that are edible commodities driving the debate of food vs. fuel, environmental sustainability, social inclusion and financial IRR for all stakeholders. VayuGrid Marketplace Services Pvt. Ltd. Has developed a model as a supplychain aggregator with a social business model for second — generation biofuels around its IP of VayuSap (elite Pongamia) as a portfolio

- **Gerard Rego**, Social Entrepreneur & CEO, Vayurid

### Moderator:

- **Mark Büniger**, Research Director, Lux Research

15:45 - 17:30  
Level 3,  
Room 303

## Session 12: Renewable Energy Dialogue: Policy and Regulatory Issues Facing Energy Businesses and Projects (continued)

The panel will include private-sector viewpoints on developing small and large-scale renewable energy businesses ventures and projects. Panelists will share their experience with a focus on presenting practical ideas and solutions. National policymakers and regulators will provide responses and feedback and also provide brief updates on national targets for renewable energy, as well as the policy and regulatory framework for renewable energy in their countries. The discussion will address the question of what is best practice in renewable energy policy and regulation, from the perspective of a business person or investor.

### Panelists include:

- **Li Jun Feng**, Deputy Director, Energy Research Institute, National Development & Reform Commission, Beijing, China
- **Luluk Sumiarso**, Chairman, Indonesian Institute for Clean Energy (IICE), Jakarta, Indonesia
- **Emmanuel Guyot**, Director Project Development, Conergy Renewable Energy, Singapore
- **Evan Chrapko**, CEO, Highmark Renewables, Edmonton, Canada
- **Nathaniel Bullard**, Director of Content, Bloomberg New Energy Finance

### Moderator:

- **Christine Lins**, Executive Secretary, REN21 – Renewable Energy Policy Network for the 21st Century



<p>17:00 - 17:45 Level 3, Room 301</p>	<p><b>Plenary 4: US Country Case Study on Sustainable Mobility</b> Driving Economic Activity Through the Development of Electric Vehicle Infrastructure: A Case Study from Portland, Oregon U.S.A.</p> <ul style="list-style-type: none"> <li>• <b>Colin Sears</b>, Recruitment &amp; Global Business Development Manager, Portland Development Commission</li> </ul>
<p>17:45 - 18:00</p>	<p>Visit to Trade Fair</p>



**Thursday, 3 November 2011**

**Clean Energy Financing, Projects and Energy Efficiency**

<p>09:00 - 10:00 Level 3, Room 301-302</p>	<p><b>Plenary 5: The Road Ahead for Clean Projects &amp; Investment</b> The flow of investments and capital for funding clean energy and energy efficiency projects is crucial to the success of managing the world's future energy supply. This session brings together leading private sector financiers, project developers from around Asia, as well as international risk managers and governmental finance agencies who will discuss the key trends in clean energy projects.</p> <p><b>Panelists include:</b></p> <ul style="list-style-type: none"> <li>• <b>Jerome Ortiz</b>, Director, Clean Energy, Standard Chartered Bank</li> <li>• <b>Mumtaz Khan</b>, CEO, Maybank MEACP</li> <li>• <b>Peter Storey</b>, Climate Technology Initiative Private Advisory Network</li> <li>• <b>Anand Prakash</b>, Managing Director, FE Clean Energy Asia Pte Ltd</li> </ul> <p><b>Moderator:</b></p> <ul style="list-style-type: none"> <li>• <b>Peter du Pont</b>, Ph.D., Vice President, Clean Energy – Asia, Nexant Inc</li> </ul>
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<p>10:00 - 10:45</p>	<p>Networking Break and Visit to Trade Fair</p>
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<p>10:45 - 12:15 Level 3, Room 301</p>	<p><b>Session 13: Financing &amp; Investments</b> A look at institutional and private investments trends in clean energy, and how energy deals are structured today. The panel will also discuss how project financing in renewables can be encouraged more in Asia.</p> <p>Presentations and speakers include</p> <p><b>Utility Scale Solar Plants: Keys to Successful Project Development and Financing</b></p> <p>A solar farm is not as simple as it appears, it is a complex project. The quality of construction plays a lot on the final returns on investments. As a value creation chain, a solar plant is defined by its weakest element, meaning that the final technical efficiency will be defined by each element entering into power generation. To secure the financial viability of a project, there are multiple ways: they are technical but also financial. This session will teach you on which elements to focus to reduce energy yield losses on the technical side, but will also show you the high impact of softer financial issues (loan, equity optimization) that can help you to bring a project more attractive for investors and to bring it to life.</p> <ul style="list-style-type: none"> <li>• <b>Emmanuel Guyot</b>, Director of Project Development, Conergy</li> </ul>
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### Resource Monitoring - Its Importance and Impact

Renewable project developers and financiers know that resource data is needed before a project can reach financial close. However, little thought usually goes into setting up a resource monitoring campaign, only to find that projects are affected as a result at the end of the monitoring campaign.

This presentation will go through some of the difficulties and pitfalls usually encountered during the monitoring campaign. Examples from projects done in China and other locations will be used. Solar and Wind monitoring campaigns will be looked at as well.

- **Dr. Richard Loh**, General Manager Beijing (China), WISE China Ltd

### Equity Returns (IRR) on Renewable Energy in India

Over the past decade investors have ploughed money into developing a vast range of renewable energy projects throughout India. The presenter will compare the different costs of generating clean energy from bio-mass, run of the river hydro, wind and solar and the resultant returns which are possible for equity investors. The presenter will also highlight some of the potential opportunities going forward in the renewable energy sector in India and highlight the inherent risks of developing projects in India.

- **Vivek Tandon**, Co-founder, Aloe Private Equity

### Investment Opportunity landscape of Clean Energy in India

The presentation covers all clean energy sub-sectors and their respective investment opportunities in terms of scale of opportunity, investment requirement, likely returns, riskiness, growth trajectories, and relevant Indian government policies. It's primary thrust is on solar, wind, biomass, small-hydro, and energy efficiency along with recent case studies on solar and energy efficiency.

- **Pankaj Sehgal**, Managing Director, Sungroup

Moderator:

- **Nathaniel Bullard**, Director of Content, Bloomberg New Energy Finance

10:45 - 12:15  
Level 3,  
Room 302

### Session 14: Europe Business Forum - Energy Efficiency: Business Opportunities and Market Potential

The "Europe Business Forum" brings together industry leaders in the energy efficiency market in a panel discussion to share their views and experiences in pursuing both environmentally sustainable strategies for their companies and seizing new market opportunities. In addition, The EuroCham Sustainability Committee, in collaboration with Roland Berger Strategy Consultants, will present the key findings of a major study on the latest developments and trends in the energy efficiency market in Singapore and South East Asia.



Panelists include:

- **Klaus Landhaeusser**, Regional Executive External Affairs, Robert Bosch South East Asia
- **Joost Geginat**, Managing Partner, Roland Berger Strategy Consultants
- **Jeffrey Liang**, Electric/Energy Manager, ST Microelectronics Pte Ltd
- **Jackson Seng**, Management Leader, Schneider Electric Power Asia Pacific Energy
- **Jihong He**, Principal, Roland Berger Strategy Consultants
- **Jane Lim**, Divisional Director Energy Planning and Development Division, Energy Market Authority

Moderator:

- **Willi Hess**, Managing Director, ThyssenKrupp Steel (Asia Pacific) Pte Ltd

10:45 - 12:15  
Level 3,  
Room 303

**Session 15: Clean Energy Project Case Studies**

This session will present case studies for successful solar projects in the Asia Pacific regions, as well as the important lessons learned.

Presentations and speakers include

**China Roadmap of Photovoltaic Development - A Pathway to Grid Parity**

PV is a policy-driven industry, and China is resolved to continue supporting PV industry development through policy measures. In order to achieve grid parity, governments have established a solar PV development roadmap that provides long-term targets and supporting policies. This roadmap provides a basis for China to set effective technology, economic and policy goals, and milestones that will facilitate solar PV commercial development. This report aims to study and analyze China's solar PV development roadmap, investigate how to promote technology development and facilitate cost reduction, and establish a policy framework for the commercial development of large-scale solar PV applications. This report also highlights the current solar PV situation, outlines the roadmap for technology development in the next five years, and provides policy and milestone recommendations for achieving grid parity.

- **Prof. Li Jun Feng**, Deputy Director, Energy Research Institute, National Development & Reform Commission

**Walk the Talk: ADB's 567kW Rooftop Solar Project**

This presentation will introduce the experiences from the 567kW rooftop solar project at ADB's Headquarters. As the end user, ADB signs a long-term power purchase agreement (PPA) with the project developer. The PPA will help the project developer to secure financing from local commercial banks. With a 15-year PPA, the project becomes an attractive bankable project. ADB also benefits from this project to fulfill its corporate social responsibility.

- **Dr. Aiming Zhou**, Energy Specialist, Asian Development Bank

## 2.4 MW Solar PV Park in Thailand

Encouraged by progressive government incentives to invest in and utilize solar energy, Thailand has become one of the leading nations in Southeast Asia to pursue wide-scale investment in solar power. This presentation discusses the advantages of solar PV and describes the market opportunity available to solar energy investors. This case study presents our project experience from a 2.4 MW solar park in Lop Buri, Thailand. This solar park produces enough energy to power 1,200 homes with its production potential of 3,500 megawatt hours/year. The design of the system, typical system losses and system integration issues will likewise be covered. This defining project, which is home to 10,800 solar modules, shows the future of solar power generation in Thailand.

- **Alexander Lenz**, President- South East Asia & the Middle East, Conergy

**Moderator:**

- **Prof. Dr.-Ing. Christoph Menke**, University of Applied Sciences Trier, Germany/  
Joint Graduate School of Energy and Environment Bangkok

12:15 - 13:30

Delegate lunch and Trade Fair Visit

13:30 - 15:30  
Level 3,  
Room 301

## Session 16: Financing & Investment (Cont)

With IPOs picking up, alternative investments can realize 'real' returns in Asia's clean energy markets. How to succeed in a market where still too many funds chase for investment opportunities will be a focus of this session. The panelist will highlight crucial success factors in risk management, insurance and other considerations for financing clean energy projects in Asia.

Presentations and speakers include

### Accessing the Clean-Tech Capital Markets: IPO

Given the recent recovery in the global equity markets, increasing numbers of renewable and clean energy companies are looking to the capital markets to raise finance. 2010/11 has seen record numbers of clean energy companies listing on stock exchanges worldwide and this trend is set to continue. This presentation will outline the practical steps and analyze the key legal issues for companies to consider in seeking a listing. Case studies of recent listings will be examined as well as the real and perceived risks associated with the clean-tech sector.

- **Ken Cheung**, Partner-International Corporate Group, Watson Farley & Williams LLP

### A Green Bank for Asia: Opportunity for Public-Private Partnership to Leverage Financing for Renewable

Alternative Investments in Clean Energy: Emerging Structures for Asia: Following the establishment of the UK's Green Investment Bank (set to start lending to renewable energy developers in April 2012, with an initial capitalization from UK treasury of £3 Billion and a target to leverage a further £12 Billion of private sector capital), and Australia's recently announced Clean Energy Finance Corporation Fund, could a "Green Bank For Asia" based on a similar PP model work in Asia, and what role could carbon-linked bonds play in attracting private capital to the clean energy space?

- **Samuel Priest**, Senior Key Lawyer, Baker & McKenzie



### Cost & Schedule Risk Analysis

Companies that deal with complex projects often routinely perform a cost or value and schedule risk analysis. They find it enhances the decision making process in the face of uncertainty by improving communication, concept selection and risk management. By taking a standard (deterministic) budget and schedule and adding in the market uncertainties and the risks with a Monte Carlo simulation, one can create probability curves for the cost and schedule. This overlay gives a much clearer sense of the uncertainties faced by the project, or by different concepts, as well as what the key drivers of that uncertainty are.

- **Dr. Glenton Jelbert**, Senior Consultant, DNV Clean Technology Centre, Det Norske Veritas Pte Ltd

### Insurance = Bankability

The financial downturn significantly decreased easiness of attracting investments into Renewable projects. Risk management restrictiveness is driven by prematurity of many technologies, lack of technological knowhow and decreasing credibility of manufacturers due to high market competitiveness and resulting consolidation.

Munich RE developed insurance solutions which back up main technological risks and therewith manufacturers' balance sheets and liquidity by providing its financial rating and technological expertise. On top of it, lenders can directly secure their investment/debt in specific projects in case of a manufacturer's credit event. This allows achieving of a required leverage in projects and improves financing and reserving conditions. This presentation shows how insurance enables bankability and which products have already been successfully launched in the market.

- **Jan Napiorkowski**, Senior Risk Analyst, MunichRE Hong Kong

#### Moderator:

- **Frederic Crampe**, Managing Director, Re Ex Capital Asia

13:30 - 15:30  
Level 3,  
Room 302

### Session 17: Energy Efficiency in Green Buildings

Buildings account for a large proportion of energy consumption. With energy efficiency targets getting stricter, investments in green buildings become ever more interesting: this session looks at technologies, case studies and investment opportunities in related technologies in Asia as well as globally.

Presentations and speakers include

## **Building Integrated Photovoltaics – Mandatory to Achieve Zero and Plus Energy Buildings**

Buildings consume 40% of the energy worldwide. Their energy efficiency needs significant improvements as demanded by many international directives. Through the use of energy efficient technologies and better operation of the buildings around two thirds of the energy can be saved. Many international directives go further in that they call for additional on-site energy generation to achieve zero and plus energy buildings. Building integrated photovoltaics are a suitable and reliable technology and have been instrumental in realizing zero worldwide and even in the tropics. The talk introduces such international and national case studies and supporting international initiatives of the tasks 41 'on Solar Energy and Architecture and task 40 'Towards zero energy buildings' of the International Energy Agency (IEA), as well the Energy Window task of the Energy Smart Communities Initiative (ESCI) of the Asia-Pacific Economic Cooperation (APEC).

- **Associate Professor Stephen Wittkopf**, Director of Solar and Energy Efficient Buildings Cluster, SERIS

## **Energy Performance Measurement and Validation**

Buildings which account for around 40% of the world's energy consumption needs to be more energy efficient. To have better control of energy usage, more accurate measurements of the optical and thermal properties of the building envelope materials are necessary. There are various standards to measure and calculate optical and thermal properties of materials. Standards for specular glazing materials are well established. However innovative building materials with textures and dynamic properties cannot be properly measured and calculated with these optical standards. Thermal properties of such samples which should be handled with the hot-box methods are often not used due to lack of knowledge or access to a hot-box. In this presentation, new materials and fenestration systems will be introduced and the suitability of current existing standards and new approaches discussed. At SERIS work is being done to characterize these innovative building materials to determine their optical and thermal properties accurately.

- **Dr. Teo Wee Boon**, Senior Research Scientist, SERIS

## **Smart Buildings in the Tropics Real Estate to Prepare for Smart Grid**

Thanks to the heat reservoirs, the combined heat and power plant can produce electricity from renewable energies at times of low supply and even at peak load times - and yet it still supplies enough heat for residents and businesses. Electricity is produced in times when it is particularly valuable in the market. Parts of the building which are in particular economically and technically suitable, such as walls or ceilings, will first serve as heat storage. These thermally-activated components are complemented by technical storages inside the buildings, and where appropriate, also centrally in the soil. Together they form a complex, well-regulated heat storage. Associated with intelligent control systems for the consumer side this interactive network provides a valuable contribution to a future-oriented linkage between energy management and architecture.

- **Prof. Rolf C. Buschmann**, EnEd Asia



## Green and Not-so-Green Buildings: Identifying Unexpected Opportunities for Energy Savings

The recent global push towards green buildings has brought awareness to the real estate industry on the importance of energy efficient design, systems, as well as practices. More and more buildings have been designed to be "green", and older buildings have also joined in the green-retrofitting wave.

However, it is not so obvious to the majority of building owners and property managers that a lot of increased cost and energy loss do not occur due to energy inefficiency or wasteful consumption. In this presentation, Alex will share on the "other losses" and explore techniques to mitigate or solve the problems.

- **Alex Lau**, CEO, Anacle Systems

### Moderator:

- **Prof. Stephen Wittkopf**, Director of Solar and Energy Efficient Buildings Cluster, SERIS

13:30 - 15:30  
Level 3,  
Room 303

## Session 18: Clean Energy Project Case Studies

This session will present case studies for successful wind projects in the Asia Pacific regions, as well as the important lessons learned

Presentations and speakers include

### Emerging Wind Turbine Procurement – A Developer's Perspective

In only a few short years China has emerged as the world's wind energy power house. As in so many other sectors, whether one looks at demand or supply, China has raced up the global rankings and is now the world's largest manufacturer of wind turbines and installer of wind farms. This talk will review the current state of the Chinese wind energy market, including an overview of Chinese turbine manufacturers and examples of typical Chinese project investment opportunities. This should give attendees more insight into whether they should consider using Chinese made turbines in the rest of Asia, and what lessons have been learned regarding investments in China itself.

- **Alex Tancock**, General Manager, Wind Prospect Asia-Pacific

### **Wind Energy Leadership – History and Future Perspectives from Oregon, U.S.A.**

During the past decade, the Pacific Northwest region of the United States has become one of the largest wind installation locations in North America. This talk will review adopted policies and associated legislation by the State of Oregon that drove the large scale wind farm development in this region during this period. The review will include a discussion of the environment that facilitated more than a decade of intense period of this development, including the enactment of an attractive financial program (the Oregon Business Energy Tax Credit), plentiful wind resources, and proximity to major energy markets (i.e. California). Additionally, growth of Oregon’s renewable energy economy during this period will be discussed (both Vestas and Iberdrola Renewables have their headquarters in Portland, Oregon). Finally, relevant lessons learned and potential strategies for moving forward will be presented.

- **Colin Sears**, Recruitment & Global Business Development Manager, Portland Development Commission

### **Building Successful Wind Assets in India**

Greenko Group has announced the development of 650ME of wind in the state of Andhra Pradesh, Karnataka and Rajasthan. This will take Group’s wind assets to over 1GW. The Group has signed a MoU with General Electric (GE) to source XLE 1.6MW turbines which are designed specifically for Class III wind speeds as encountered in India. This presentation will discuss the development of the project and the history behind the development of wind in India over the past 10 years. The presentation will highlight Private Equity investors experience of developing successful renewable energy company in India that will be one of the largest owner and operator Wind Power projects in the country.

- **Vivek Tandon**, Co-founder, Aloe Private Equity

### **Wind Farm Due Diligence in South East Asia**

The presentation will focus on the technical challenges faced by the wind industry in assessing wind farm opportunities and developing successful wind farm projects. Investor confidence in renewable energy projects requires strong and consistent regulatory policies, but also confidence that projects will perform as intended. There are growing concerns regarding under-performance of wind farms globally, underlying the importance of robust and independent assessments during the project development phase. Current best practice will be discussed by considering a wind farm case study in India, and the issues faced when acquiring operational wind farms. Finally, recommendations will be given for the necessary activities to assess and develop projects in south-east Asia based on the lessons learnt in other markets.

- **Tammy Chu**, Managing Director, Entura (Hydro Tasmania)



### Developing and Financing a Philippines Wind Project

The Philippines is fast becoming the region's most vibrant wind market. Prices for electricity have been found to be the highest in Asia, and seen as a deterrent to foreign investment. However, a long-awaited Feed in Tariff (FIT) expected to be released in October, high and growing energy demand, as well as relatively favorable regulatory and geographical factors have made the Philippines an increasingly attractive market for investing in renewable energy. Wind developers are now busy readying hundreds of megawatts of projects in anticipation of the FIT being finalized. Based on current ongoing experience with one such project and current experience and experience with completed wind projects, we will look at factors contributing to successful development of a wind project in the Philippines, including country-specific legal and geographic issues, risk management and bankability considerations.

- **Charlie Grover**, Consultant, Allen & Overy LLP

**Moderator:**

- **Kam Ho**, Manager, Market & Strategy Development, Wind Prospect Asia-Pacific

15:30 - 16:00

Networking Break and Visit To Trade Fair

16:00 - 17:30  
Level 3,  
Room 301

### Session 19: Financing Studies in Energy Efficiency Projects

This session will highlight the challenges in financing clean energy and energy efficiency deals, as well as how to best structure concrete projects and acquire funding in Asia.

Presentations and speakers include

#### Raising Funds for Cleantech Projects in Asia: Finding the Right Funding Sources

The Cleantech industry and market in Asia is booming, with a number of countries vying to become leaders in the production of clean technologies, manufacturing expertise and R&D, and some countries just being fertile markets for clean technology. However, there may be gaps in the funding ecosystem for these projects and companies. Understanding the different players in the market and their investment strategies will make fund raising a more efficient process for project owners, company managers and technology developers. Collaboration through information sharing, regulatory assessment and risk structuring between the different financiers should allow for more financially viable projects and technology development in clean technology and allow the industry to develop more effectively.

- **Michel Birnbaum**, Partner, IGLOBE Partners

#### Growth Areas in Clean Energy Investment in South East Asia

In recent times there have been policy changes, technological advances and financial market innovations that are giving way to new opportunities for clean energy investors in South East Asia. This presentation will highlight several growth areas by focussing on these changes.

**Renewable energy generation:** There have been changes in revenues, risks and opportunities in various power generation sectors in Southeast Asian countries. Changing government incentives (revenues), fuel supply and permitting issues (risks) and technology, land, and resource availability (opportunities) will be examined to identify promising market segments in the region.

**Energy efficiency:** Changes in financing mechanisms for energy efficiency investments are likely to produce new opportunities

Other areas: Changes affecting opportunities in technology and manufacturing will be briefly discussed

- **Catriona McLeod**, CFA, Associate, Re Ex Capital Asia

### **Innovation of Financial Mechanism for Energy Efficiency Project**

It is shared that technology driven approach is required for realizing sustainable growth under energy and climate constraint. However, initial cost of these investments is high and investment payback period is longer. External funding is inevitable and global demand for finance is enormous. New financial mechanism for scaling up energy efficiency investment is required.

A solution is "Performance base Incentive Scheme". It is Conventional incentive scheme is "Incentive first and project later" and outcome is not assured. But Performance base incentive scheme is "Project first and Incentive later" and incentive will be paid based on CO2 emission reduction amount. A key of this scheme is the measurement instrument of CO2 emission reduction, MRV (measurement, Reporting and Verification). This idea was proposed, as a market base approach, to the transitional committee of Green Climate Fund which would be established in 2012 for climate change mitigation and adaptation. This fund aims at the mobilization of private funding and technology for Green Growth and it needs innovative scheme for scaling up low carbon investment. Industrial group and other private sector should be involved in the construction of the new schemes for pushing low carbon investment.

- **Takashi Hongo**, Senior Fellow, Mitsui Global Strategic Studies Institute

### **Financing Energy Efficiency Through Private Equity Funds**

Dr. Tao Ren joined the GEEREF team as an investment officer in 2009. He was previously a senior business analyst at Yellow&Blue Investment Management BV, a utility-backed venture capital fund in the Netherlands investing in innovative energy efficiency and renewable energy technology firms. Prior to joining Yellow&Blue, Dr. Ren was a Senior CDM Project Manager at EcoSecurities Group PLC (now part of Carbon Acquisition Company, a JP Morgan subsidiary), where he worked on industrial projects for the reduction of greenhouse gas emissions. Dr. Ren has a PhD degree in energy efficiency and renewable energy from Universiteit Utrecht in the Netherlands.

- **Dr. Tao Ren**, Investment Officer, Global Energy Efficiency and Renewable Energy Fund

**Moderator:**

- **Ritchie Lee**, Executive Director, Energy & Sustainability-Asia, CB Richard Ellis (CBRE)



16:00 - 17:30  
Level 3,  
Room 302

## Session 20: Energy Efficiency in Green Buildings

This panel will be discussing newest technology and project trends for retrofitting energy infrastructure in buildings - with a specific focus on best practice solutions in South East Asia markets.

Presentations and speakers include

### **Co-Generation and District Cooling – Potential and Case Studies for Thailand**

Co-Generation and district cooling for large buildings are key elements for an efficient energy system in any country in the future. Co-Generation offers significant primary energy savings but it requires certain preconditions for its successful implementation. The presentation shows the potential of natural gas based Co-Generation for Thailand, the required policies and finally selected case studies of possible district cooling systems using Co-Generation systems.

- **Prof. Dr.-Ing. Christoph Menke**, University of Applied Sciences Trier, Germany / Joint Graduate School of Energy and Environment Bangkok

### **Retrofitting and Renovating Existing Building for an Energy Efficient Future**

Major economies are pushing the bill towards zero-energy or carbon-neutral buildings, however, to understand, analyze, and estimate existing building energy consumption is costly. Now, technologies are available to examine as-is building and run building energy assessments with a smaller budget, shorter timeframe, and less initial data. These reports will assist building owners in implementing practical and financially-viable retrofitting strategies. For architects, engineers and construction companies, they now can preview building performance and explore alternative design options to optimize the building lifecycle impact. This will generate substantial environmental as well as financial benefits.

- **Sunil M K**, Senior Manager Industry Strategy and Relations for AEC, Autodesk Asia Pacific

### **Low Carbon Green Buildings – Experiences from Actual Projects in Malaysia**

Green Buildings is primarily about Energy Efficiency, Water Efficiency, Materials and Waste efficiency, and good Indoor Air Quality. If you get these parameters right, then you are headed for a Low Carbon Building with a high environmental certification according to the LEED, GBI or Green Mark environmental certification schemes. Green Buildings is a good investment to safeguard the value of your building in the future. Typically the extra costs are 5 to 10% to achieve a LEED Gold certification. The extra investment is paid back within 5 – 10 years by the savings on the electricity bill, and when the extra value of a green building is considered, and then there are no extra costs at all.

IEN Consultants have 4 major finalized projects, and 14 ongoing projects, all in Malaysia, and all with serious green building design features. The presentation will cover the process of designing a green building, how green buildings are created, the key parameters that makes a building green, and the actual performance of green buildings.

The key design criteria of green buildings are: An energy efficient and airtight façade with high performance glazing, use of natural daylight in combination with an efficient electric lighting system, an energy efficient low pressure ventilation system, a high efficiency cooling system, and for the user, energy efficient computers and other plug loads.

- **Poul E. Kristensen**, MD, IEN Consultants Sdn Bhd

**Moderator:**

- **Dr. Tseng King Jet**, Head of Division, Division of Power Engineering, Nanyang Technological University

16:00 - 17:30  
Level 3,  
Room 303

## Session 21: Clean Energy Project Case Studies

This session will present case studies for successful bioenergy projects in the Asia Pacific regions, as well as the important lessons learned.

Presentations and speakers include

### **What Happens When Opportunity Meets Hope? Sustainable Economic Development in Rural Haiti**

The Jatropha Pepinye brings economic opportunity to small growers in Rural Haiti by developing the entire jatropha value chain without competing with food while providing growers an opportunity for a better life.

Haiti imports over \$400 million of diesel every year. The Chairman of the Board of Digicel, the largest mobile phone company in Haiti (and 2<sup>nd</sup> largest diesel user) has already agreed to buy all the biodiesel produced. What if small growers supplied enough feedstock to begin to meet a significant portion of this requirement while owning a significant share of the biodiesel production facility? The ultimate goal of this effort is 1-5 million gal/year of pure plant oil to be transformed into biodiesel using an ownership model drawn from Grameen Phone.

- **Kathleen Robbins**, Jatropha Pepinye

### **Developing and Delivering Biogas in Cambodia**

The W2E Siang Phong Biogas project is commissioning in November 2011. Waste water from a cassava starch plant is converted into biogas to provide power to the plant and to run the drying system for the starch. The project faced a number of implementation hurdles - financing, navigating investment regulations and working within a new ownership team. The project will be presented in detail.

- **Steve Peters**, Director, Stratcon Singapore Pte Ltd



## **Biotechnologies – Driving Inclusive & Sustainable Second Generation Biofuel & Bioenergy Business Model as the Glue – Karanjin as a Case Study Around Elite Pongamia (Vayusap™)**

Challenges that plague global Bioenergy market are fragmentation of supplychains, non-inclusive business models, portfolios that are edible commodities driving the debate of food vs. fuel, environmental sustainability, social inclusion and financial IRR for all stakeholders?

How can Biotechnologies play a critical role as the "glue" that will create value across a Bioenergy value chain and social inclusion, impact and environmental sustainability, while generating increased and additional IRR for all stakeholders?

VayuGrid Marketplace Services Pvt. Ltd. Has developed a model as a supplychain aggregator with a social business model for second-generation biofuels around its IP of VayuSap (elite Pongamia) with Biotechnology derivatives.

- **Gerard Rego**, Executive in Residence, INSEAD Social Innovation Centre

## **Bioenergy Technology Development – A Singapore Perspective**

Energy consumption has increased steadily over the past few decades. As the global economy depends highly on oil, the consequences of inadequate oil could be severe. Therefore, there is great interest in exploring alternative energy sources. Alternative fuels, e.g. biofuels, can be derived from plants and animals as well as their by-products. The first generation biofuels, which are produced from crops and oil seeds etc., compete with our food chains. This has made it necessary to explore the non-food feedstock for bioenergy production. Non-food biomass, such as wood wastes, agriculture wastes, food wastes, animal manure, energy crops so on and so forth, can all be used as feedstock for biofuel production. Sufficient supply of such feedstock is essential for commercial scale bioenergy production. Feedstock supply is a great challenge for Land-scarce Singapore. However, the advancement of the bioenergy supply chains highly depends on the development of new technologies. This presentation aims to give an overview of the recent development of technologies in bioenergy applications. Its current status and Singapore perspective will also be outlined.

- **Dr. Anli Geng**, President, BioEnergy Society of Singapore

**Moderator:**

- **Dr. Aiming Zhou**, Energy Specialist, Asian Development Bank