


Energy and Environment Track @ PANIIT2009, Chicago, October 2009
Executive Summary and Presentations

The “Energy and Environment Track¹” had two eminent keynote speakers and four panels with seventeen global thought leaders serving as moderators and panelists. Suzlon Chairman Tulsi Tanti’s speech set the stage for the entire track. The four panel discussions spanned alternative energy solutions, business impact of climate change, green supply chain, and green buildings and energy efficiency and had seventeen presentations by eminent speakers. Jim Rogers, Chairman of Duke Energy, integrated these disparate aspects of green business. The entire track came through like a well composed orchestra of world renowned musicians collaborating to enchant a well informed elite audience.

Keynote Plenary (Tulsi Tanti , Chairman Suzlon Wind Energy)	Keynote Speech (Jim Rogers , Chairman Duke-Energy)
Video Presentation http://mychannel.dyyno.com/paniit/	Video Presentation http://mychannel.dyyno.com/paniit/
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[Alternate Energy Solutions \(EE1\)²](#): Video <http://mychannel.dyyno.com/paniit/>

The alternative energy solutions are driven by the need to meet growing global energy needs while mitigating greenhouse gas emissions. Concerns of scalability and efficiency are holding companies from taking big bets in this space. This panel provided insights into the current state of the art in solar, wind, nuclear and bio-fuels and how to capitalize on alternative energy solutions.

Dr. Wasielewski, set the stage for the Alternative Energy Solutions by tying the world's energy demands with energy supply and security based on fossil fuels and issues with climate change. He then presented various alternative/renewable sources of energy, and their potential in meeting the world's future energy needs, followed by a brief introduction to research at ANSER.

Mr. Sumant Sinha provided an overview of the growth in world's wind energy market, its cost competitiveness, and the primary business drivers such as regulations and stimulus packages. He presented emerging technologies in wind energy such as off-shore wind turbines, solar-wind hybrid systems, and solar tower technology. Mr. Sinha showed the contribution of Suzlon around the world as a third largest Wind Energy Company in the world, with their flagship products as large as 5MW capacity wind turbines.

Dr. Rathin Datta presented growth in bio-fuels market scenario mainly related with ethanol. He briefly explained the Coskata's state-of-the-art technology of ethanol production using cellulosic feed stock or waste industrial gases which does not compete with the world's food-supply.

Dr. Atam Rao compared nuclear energy with other energy solutions with respect to required area. He presented a relevant mix of various sources of energy for the future of electricity generation. He also briefly talked about the investments and the relevance of nuclear energy in India, and what it means for small companies and investors.

Mr. Eric Daniels covered solar energy with a brief introduction on the current solar technologies and next generation technology trends, and the effect of advancement of technology in driving the cost down. He talked about BP Solar's technology programs such as Mono2™ Wafer and Silicon cell technology programs. He also provided an overview of BP EnergyNet program which is broadly based on the load optimization by application for macro and micro networks.

¹ <http://paniit2009.org/program/ee-tracks> Energy & Environment (EE) Track Chair: Ram Ramanan

² Panel Moderator: Dr. Michael R. Wasielewski, Professor Northwestern University, Director Argonne-Northwestern Solar Energy Research Center; Panel Speakers: Sumant Sinha, Chief Operating Officer, Suzlon Wind Energy, India, Dr. Rathin Dutta, Chief Scientific Officer, Coskata Biofuels, USA, Dr. Atam Rao, Head Nuclear Power, International Atomic Energy Agency, Austria, Eric Daniels, Vice President and Chief Technology Officer, BP Solar, USA; Energy and Environment; Producer: Priyank Saxena, R&D Research Engineer, Solar Turbines, Caterpillar

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PANIIT2009PanelEE2
GreenSupplyChain.pc

[Green Supply Chain & Operations \(EE2\)](#) ³

Supply chains that attempt to cut out as much carbon, waste and unproductive use of resources are called green supply chains. Leaders in sustainability have implemented green supply chains and have reaped tremendous financial benefits from low energy and resource usage, waste as profit and increased relationships with consumers, employees and their stakeholders. This panel discussed the challenges and opportunities inherent in “greening” operations.

Dr. Sunil Chopra set the stage for the Green Supply Chain panel by talking of the need to define green and what green means to different stakeholders. He also described the role of academia in creating standards and setting the stage for the right measurements of Green. He then introduced the panelists and moderated the discussion based on questions received from the audience.

Mr. Matt Kistler outlined Wal-Mart’s sustainability strategy across various areas of focus. He then screened a video that showed the lifecycle of a simple product – sour cream and talked about how Wal-Mart tracks key sustainability metrics for each product such as this. Mr. Kistler also explained the sustainability supplier index and the intent behind the index and closed with an update on the Sustainability Consortium that Wal-Mart is facilitating across a broad group of suppliers, academics and other stakeholders.

Mr. Keith Williams started out by outlining the various definitions of green and the lack of consensus around standards. He went to explain the challenges companies face today in defining green and communicating that to consumers. He then explained a model that would work to build consensus across all supply chain green participants and emphasized that this model would need to be underpinned by Green Enterprise. He closed with the advice that maintaining trust and practicality in any green initiatives would be the key to success.

Mr. Mark Wysong started the discussion by outlining the key challenges the world faces today – including the rise of chemicals, the increase in green movement across customers and legislators and key research IHS has sponsored that outlines the need for full transparency within the green supply chain. He spoke about the impact green will have on supply chain, stakeholders and metrics. He closed with a personal anecdote that showed the stark effects of the number of chemicals that find their way into human anatomies and the resultant effects of that on children.



PANIIT2009PanelEE3
BusinessImpact.pdf

[Business Impact of Climate Change \(EE3\)](#) ⁴

Climate change is a reality. Global “warming” or “weirding” has already had significant impact on global company operations and is predicted to increase in intensity over the next few decades. This panel offered insights into helping companies understand the effect of climate change, optimize their assets and operations manage their “Carbon Risk”.

Mr. Sudhakar Kesavan provided an overview of the impact that climate change is having (and will continue to have) on businesses globally. He pointed out that climate change affects that entire world’s ecosystem and as such has significant impact on the energy sector. He also noted that personal beliefs about the causes or validity of climate change does not matter anymore, as most countries (especially the U.S. and European countries) are well on their way to regulating the emission of greenhouse gases. He went on to describe regulatory and legislative change that is happening in the US and across the world. He outlined how companies are reducing their carbon footprint and described a carbon framework that businesses should adopt to manage climate change. He set the stage for appropriate coverage of the significant sectors.

Mr. Bennaceur then proceeded to discuss in more some detail the projected future increase in energy consumption and laid the foundation for its implications including increasing emissions and concerns about water availability. He then proceeded

³ Panel Moderator: Dr. Sunil Chopra, Interim Dean Kellogg Business School; Panel Speakers: Matt Kistler, Senior Vice President, Wal-Mart, Keith Williams, CEO, Underwriters’ Lab, Mark Wysong, VP, Environment, IHS; Producer: Kady Srinivasan, Clarkston Consulting

⁴ Panel Moderator: Sudhakar Kesavan, Chairman and Chief Executive Officer, ICF International, Fairfax, VA, USA; Panel Speakers: Kamel Bennaceur, Chief Economist, Schlumberger, Paris, France, Steve Corneli, Senior Vice President, NRG, USA, Dr. Jitu Shah, Head Nuclear Power, International Atomic Energy Agency, Austria; Producer: Ananth Chikkatur, ICF International

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to discuss some of the de-carbonization options for the energy sector, particularly the power and oil & gas industries. He noted that although a lot of the focus has been on the power sector, other small industries that use coal would also be affected. He also focused his comments on the role of carbon capture and storage (CCS), and the critical role that the oil and gas industry will play in developing and deploying this technology. In addition to CCS, natural gas will become a key low carbon resource and Mr. Bennaceur highlighted the importance unconventional sources (shale gas) in meeting future natural gas demand.

Mr. Corneli discussed the ways in which the power industry in the United States is coming to terms with upcoming regulatory actions (both at the state and federal levels). He noted that the climate legislation in the US is trying to jump start a transition towards a low carbon energy future without harming the economy, and as such US legislation can be useful for catalyzing a global response to climate change mitigation. He then discussed the 'Carbon Pentagon' that NRG has been using as their carbon strategy. NRG, he said, has been a leader in pushing for appropriate national carbon policies that meet both environmental and business needs. He outlined the ways in which a cap and trade policy in the US would work and closed with a provocative question of whether sustainability is a burden or an advantage for businesses.

Dr. Shah outlined the reasons why climate change is a developmental challenge and that inaction is more expensive and dangerous than mitigatory actions taken today. He also highlighted the important role of the World Bank in financing developing countries to lower carbon pathways. Climate change provides significant business opportunities, but there are difficulties in determining net profit numbers given the layered complexities. He finally shared his thoughts on the way to move forward in terms of regarding climate change as a business opportunity, particularly in Asia.



PANIT2009PanelEE4
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[Green Buildings & Energy Efficiency \(EE4\)](#)⁵:

Green building is the practice of increasing the efficiency of energy, water and material resource usage while reducing building impacts on human health and the environment during the building's lifecycle. This panel provided insights into evaluating and management of construction and certification of green buildings. Mr. Praful Kulkarni, set the stage for Green Buildings by establishing the relationship of Global Energy Consumption and the enormous contribution of buildings. He then explained how the rising concern for Energy & Environment in the Global Economy can be solved through Innovative Technologies which essentially lead to Green Buildings and increasing the efficiency of energy usage. He also set forth the notion of "Global in Perspective but locally actionable" and elaborated on how this could be achieved through simple steps.

Mr. Larry Eisenberg brought the concept of "Zero Energy Buildings" to the table and provided an overview of the natural principles in design of buildings. He briefly explained the importance of these to the built environment, like improved day lighting and indoor air quality through elements such as skylights and natural ventilation. He then went on to elucidate how a holistic building approach could improve the built environment as well as present new ideas for creating interesting architecture. He elaborated on the real world implementation principles and the challenges involved in attaining a "Zero Energy Building" and possible solutions. Mr. Eisenberg concluded by presenting the idea of "Masdar City", which would be an extrapolation of the concept of a Zero Energy Building to a Zero Energy City.

Mr. Srikanth Rajagopalan stimulated the thought of Energy Efficiency in daily usage by making the end user cognizant of this information real-time. He elaborated how the upcoming concept of electric vehicles would make this highly relevant. He then explained on the influence of this information on user behavior and showed some examples of "googlers" who were testing this technology. Statistics presented by him showed that energy savings were in the range of 5-15% by use of this technology. He concluded with explaining the role of energy companies and policy makers in making it economically sustainable and worthwhile.

Dr. Prem Jain started with screening a video about environmental effects by human intervention, specifically in the case of a developing economy like India. He explained India Green Business Council's initiatives towards mitigating these issues while developing built environment of International standards. Poverty, lack of education and other political factors were identified as some of the factors leading to the problem. He presented the fact that sustainability is being factored at an earlier stage into the overall development of the country.

⁵ Panel Moderator: Praful Kulkarni, President and CEO, gkkworks; Panel Speakers: Larry Eisenberg, Executive Director- Facilities, Planning and Development, LACCD, USA, Srikanth Rajagopalan, Lead Product Manager- Google, USA, Dr. Prem Jain, Chairman Indian Green Building Council (IGBC), India; Producer: Vamsi Manda, Project Manager, gkkworks