



Day 4: Securing a sustainable energy future

UN Secretary General Ban Ki-moon addresses the Daegu 2013 Congress

On the closing day of the World Energy Congress, UN Secretary General Ban Ki-moon reaffirmed his pledge to provide 1 billion people across the globe access to sustainable energy by 2030. “Energy is the golden thread that connects economic growth, environmental health, social fairness and opportunity,” said Ban in a pre-recorded video address.



Kandeh Yumkella
CEO, SE4ALL

In 2010, the UN, with collaboration from the World Bank, launched the Sustainable Energy for ALL (SE4ALL) Initiative. “Clean, modern, and affordable energy services § essential for sustainable development and achieving the Millennium Development Goals (MDGs),” the Korean-born Secretary General said. Ban set out the initiative’s three primary goals, which include providing universal access to modern energy sources, double the worldwide rate of energy efficiency, and double the global share of renewable energy.

Secretary General Ban urged his audience to take swift action to bolster his energy agenda. “No other energy gathering brings together such a wide range of actors,” he said. “I ask you to lead by example in securing tomorrow’s energy today.”

Kandeh Yumkella, the UN Secretary General’s Special Representative & CEO of the SE4ALL initiative, praised South Korea for setting an example of how fast a country can industrialise and bring prosperity to its citizens. “Energy was the core of the revolution here,” he told at the Daegu 2013 Congress on 17 October. Yumkella noted the government-led drive that brought Korea from the third world to first world in just one generation can be a model for today’s developing economies.

The official said a major flaw within the UN’s MDGs was that access to energy was left off the table. He said without electricity, hospitals cannot operate and four million women and children die from smoke inhalation in their homes. “If you care about health, if you care about women, we better make sure they have access to energy,” he said.

Bringing electricity to poor communities starts from the ground up, said Sanjit Bunker Roy, Founder of India’s Barefoot College. “What’s happening at the top is not reaching those at the bottom,” he said. His foundation has

trained 500 elderly women from 64 countries to become solar panel engineers. After leaving the Barefoot College campus, they return to their homes and help bring electricity to their villages for the first time. When delivering energy to the world’s unconnected, “we need to keep solutions simple,” Roy said.

Sustainable Energy For All: One year later

Providing energy for more than a billion of the world’s poor will need good governance in developing countries and a willingness in developed nations to tolerate increases in greenhouse gas emissions, the World Energy Congress was told on 17 October.

“In one petroleum-rich country with a population of 150 million, half the people are off the electricity grid. If they spent 0.6 per cent of their oil income on electrification, they could provide electricity for everyone,” said Fatih Birol, Chief Economist of the International Energy Agency (IEA). “So it is essentially a governance issue.” But Birol warned that where strong governments have been able to provide electricity to large numbers of citizens, the fuel of choice was not green, but black. “It was coal,” said Birol. “Take the Korean example. The government has articulated a policy of green growth. And yet if you look at the figures you will see that Korea achieved its miraculous growth thanks largely to coal. And this is true for the region as a whole.”



Fatih Birol
Chief Economist
International Energy
Agency (IEA)

Birol was speaking on a panel discussing the UN’s SE4ALL Initiative, unveiled one year ago by Secretary General Ban Ki-moon. Experts from other international agencies agreed that requiring the developing world not only to provide the poor with energy but also to demand that the energy sources be sustainable was inconsistent with reality.

“We cannot tell people in Kenya that we will give them financial support but only if they refrain from using coal,” said Kandeh Yumkella, the UN Secretary General’s Special Representative & CEO of SE4ALL. “These people cannot afford to be green.”

The World Bank’s Director of Sustainable Energy, Vijay Iyer stressed that it was up to the developed world to “help bring costs down.” Iyer raised the example of hydroelectricity as an option for cheap and sustainable

energy for developing countries.

Bruno Lescoeur, CEO of Italy's Edison, cited the case of a hydro project in Laos that sells part of the electricity it produces to Thailand while providing some for Laos to promote industrial development. Lescoeur also argued on behalf of nuclear energy. "The industry has good infrastructure and good capability."

Birol stated that large turn-key projects may prove too expensive for the poorest of the world's poor. "You cannot tell people who have no access to energy that they need to use clean energy if it is more expensive than what they can afford. You have to let them use whatever makes economic sense." Birol indicated that in all likelihood that will mean coal. "But even if all the 1.3 billion people who at present lack access to energy were to rely on thermal energy for their power, the amount of CO₂ that would be released in the atmosphere is a tiny fraction of amounts released today," Birol said.

Renewables: Making the business case for distributed energy

Governments across the globe are still innovating ways to incorporate renewables into their national energy mix. This process presents challenges for both developed and developing economies. Perhaps the biggest question for poor countries remains how to make new technologies affordable for citizens, many of whom live on \$1 a day. And for wealthy nations, such as Japan, the introduction of renewables has become a necessity following the 2011 accident at the Fukushima nuclear power plant.



Noureddine Boutarfa
CEO, Sonelgaz

For Lebanon's government, some of those answers were found in already existing financing structures. Pierre El Khoury, Director the Lebanese Centre for Energy Conservation (LCEC), said renewable energy became "a serious alternative to [diesel] generators and blackouts." That was thanks to zero-interest loans that the central bank gave to citizens who gave up generators in favour of solar panels. El Khoury said Beirut is hoping to expand its renewables policies by working with the national bank to start offering "green energy" loans to more power deprived Lebanese.

The Algerian government also has found success installing solar panels to communities that are not connected to the

national grid. "By 2030, we will make solar energy count for 40 per cent of our energy mix," said Noureddine Boutarfa, CEO of Sonelgaz. So far, solar panels have delivered electricity to 18 villages and there are plans to introduce the technology to other desert communities. Boutarfa added that Algeria is an ideal country for further innovations in renewable resources since it enjoys 3,000 hours of sunlight a year.

Following the Fukushima nuclear accident, the future of Japan's energy policy has become unclear. Nuclear power was expected to supply half of Japan's total energy needs, but that is now impossible, according to Kenji Yamaji, Director General of RITE in Japan. Japan "must fill the gap and renewables will play an important role," he said. This may mean the use of solar panels could see an even greater increase during the upcoming years as Japan tries to devise a new energy strategy. However, the recent return to power of the Liberal Democratic Party could mean a return to a nuclear driven policy, Yamaji added.

Clear policies and government regulations are basic essentials to implementing a successful renewable energy mix into a nation's power grid, said José Luis Aburto, Planning Director of Mexico's Federal Electricity Commission (CFE). But, he added, what works in one region doesn't always mean the same results can be achieved in another. The strategy "has to be designed for the needs of the community" and depends on mature technology that can produce energy reliably.



William D'haeseleer
Chair, Belgian
National Member
Committee, WEC

Creating Utilities 2.0: New business models for smart energy

The rise of new technologies in "smart energy" and customer behavioural changes is reshaping the utility industry, posing a possible threat to the centralised utility model.

Instead, the utilities business may be moving towards a decentralised energy system, which can put power sources closer to the consumer, foster the more optimal use of renewables, and increase eco-efficiency, said William D'haeseleer, Chair of the Belgian National Member Committee of the World Energy Council. "Is the decentralised model the natural way to go?" D'haeseleer asked. "When we talk about the new model, are we only talking about the

context of sustainability, or can we still play with oil and gas systems?" He also asked if traditional utilities can survive the coming market shifts.

Participants offered differing forecasts for the utilities industry, ranging from complete decentralisation to partial decentralisation with homes and products that still interact mainly with a centralised grid. They agreed, however, that the centralised model may be breaking down, and that the utilities market is moving towards decentralisation.



Michael Howard
CEO, EPRI

The discussants also agreed that the changes offer hope rather than perils. "This is an opportunity to address energy poverty," said Charles-Emmanuel Chosson, the Paris-based Global Assurance Power and Utilities Leader for EY. "Smart energy" can improve efficiency and capacity. At the same time, technology can allay environmental concerns and address the "intermittency problem" that erodes the efficiency of renewables, he said.

"In terms of the power system, in generation, delivery and for consumers of electricity, there has been a tremendous amount of change," said Michael Howard, President & CEO of the Electric Power Research Institute (EPRI) in the US. It is "critical" that the various parts of the power system work together, he said. He used the example of microchips inside products such as refrigerators, which could detect peak usage, communicate with the electricity grid, and adjust the timing of processes like defrosting. That prospect would cut down waste, offering a new level of energy efficiency.

Others identified the coming challenges. Colin Calder, Founder & CEO of PassivSystems, a maker of smart home products in the UK, said that energy companies have a "weak" understanding of information communication and technology (ICT) and consumer behaviour. "Consumers are being empowered to generate their own power for less money and a fixed cost," he said. "The more we empower consumers, the better we will be as a nation."

Energy Leaders: New thinking, more participation needed for tomorrow's challenges

The world needs to revamp much of its thinking to meet the energy challenges of the 21st century, industry experts said on October 17 at the closing plenary session of the World Energy Congress. From fostering

new energy sources to structuring the best mix of public and private incentives to curb carbon emissions, the discussion session attempted to draw lessons from the four days of meetings among more than 250 global energy leaders.

"The need to include new players at the heart of the international system is very clear," said Ged Davis, CEO of Forescene SA, a Swiss-based energy consultancy "This is no longer a world where government and government industries control things — we're moving into an open source governance world," he said, adding there would be increasing instances of tension between national sovereignty and the need for international cooperation. Davis added that the tremendous strides in world population and GDP growth afforded by the fossil fuels revolution of the previous century were unlikely to be repeated in the 21st century, but that the world would likely turn its attention to pressing environmental issues.

Leena Srivastava, Honorary Executive Director of The Energy and Resources Institute in India, urged the global industry to look at the developing world in a holistic and inclusive way. "Energy in its wider context can bring about huge changes on the social side as well as the environmental side," she said. "A lot of what we need in the developing world has yet to take place — but it requires us to think outside of our comfort zone." Srivastava pointed to microfinance programmes and the soaring demand for mobile phones, along with the energy innovations required to charge them, as trends that arose in the developing world but are of global relevance.

Adnan Shihab-Eldin, Director General of the Kuwait Foundation for the Advancement of Sciences, called for government to play a strong role in fostering energy changes. "We need to ensure that government can take the lead — the benefits take time, so the government needs to take over," he said. He stressed the need for policies that ensure all countries can use renewable energy from the beginning of planning their energy mix. At the same time, "we cannot pick and choose which one of the new sources will win or lose." □



Adnan Shihab-Eldin
Director General,
Kuwait
Foundation for the
Advancement of
Sciences