Links between SE4All and Security of Supply

Scott FOSTER
Director, Sustainable Energy Division
United Nations Economic Commission for Europe (UNECE)

High Level International Conference on Energy Security and Sustainable Development – The OSCE Perspective
Session 3: Promotion of Sustainable Energy Solutions, Energy Savings, and Energy Efficiency
Ashgabat, Turkmenistan, 17-18 October 2013

Thank you Mr. Chairman, good afternoon ladies and gentlemen, your excellencies. I would like to thank the government and people of Turkmenistan for your kind hospitality and excellent organization. I would also like to thank the Ukrainian Chairman in Office and the OSCE Secretariat for inviting UNECE to speak on this panel.

I would like to explore the links between sustainable energy for all and security of supply. As we all know, the Sustainable Energy for All (SE4All) initiative has three key objectives:

1. Energy Access For All: Access has three facets: physical access through extension of networks (pipes and wires), with an obligation to connect customers to the grid, or provision of energy services through a decentralised system; economic access, whereby consumers are able to afford the energy services that are proposed; and quality access, meaning there is no point in providing either of the first two elements if services are available only ephemerally or in an unusable form (e.g., widely deviating frequency or voltage in the case of electricity).

2. Energy efficiency: Improving energy efficiency is the famous low-hanging fruit that is easy to do, pays for itself, and contributes to energy security, environment, quality of life, and economic well-being. It has multiple benefits, and yet it is not happening because of the way markets are designed and structured, low-tariff policies, subsidies, lack of information, and lack of investment capital by end-users (note that I did not say customers here).

3. Renewables: Renewables are one approach to reducing the carbon intensity of the energy sector. It also has the potential for creating green jobs. Everyone "knows" that renewables are good. But is the policy sustainable if we create an industry that depends existentially on subsidies forever? As governments put subsidies in place and then remove them under budget constraints, they create an industry and then destroy it. Governments find themselves in the role of the sorcerer's apprentice of trying to attain desired market outcomes by putting in subsidies to overcome other subsidies that are needed to support other objectives. It is a never-ending cycle. A real price on carbon would be simpler, whether through a carbon tax or some other mechanism, then let the market decide. As a number of fund managers who invest in renewables have said, they cannot afford to depend on subsidies, so they make their calculations without them. They would rather see serious policy efforts on best practices guidance that address terms of access to networks and customers, allocations of network costs, and so forth.

The challenge is to meet these goals with rational, effective policies. A shift to green that does not consider the social and economic consequences may discredit the legitimate contributions of new technology and delay effective progress to a sustainable energy future. Governments should enable and not stifle innovation.

Today's imperatives are clear:

- Put in place sensible, consistent, and coherent economic, energy, and environmental policies;
- Address market failures;
- Build capacity for technology transfer;
- Develop normative instruments that can guide investment;
- Develop financial instruments that are appropriate for local circumstances.

UNECE's mandate and expertise include energy – specifically the ability for UNECE members to secure affordable and sustainable energy supply. That is the Division I represent.

The mandate, though simply stated, is in fact complex. It includes security. It includes affordability. And, it includes sustainability.

First, security. Energy supply is considered secure if it meets demand in an environmentally sustainable manner at price levels that do not damage the economy. This implies supply that is robust in the face of disruptions, whether physical or political, at prices that are "affordable".

In this context, energy security requires investment, diversification of primary fuels, technology and flexibility. *Above all, it requires governments to put in place the policies and regulations that empower producers and consumers to respond to a dynamically changing environment.* The UNECE Committee on Sustainable Energy has a specific mandate to continue its energy security dialogue.

Second, affordability. This concept is challenging. It implies that end-use prices should be affordable - without considering the ability to pay or the cost of supply. But the term is nuanced. Affordability takes account of life-cycle costs, including returns on investment, and both the resources and requirements of the buyer. Ensuring affordability is equivalent to ensuring that investments are made throughout the value chain - from primary energy development to final consumers - and that all involved have fair access to energy markets. *Again, it requires governments to put in place the policies and regulations that empower producers and consumers to respond to a dynamically changing environment*.

Finally, UNECE mandate includes sustainability. Sustainability has three inter-related dimensions:

- Economic, where investment and consumption decisions are made in a framework of sensible policies. One cannot oblige buyers or sellers to take decisions that run counter to their economic self-interest.
- Environmental, where sustainable resource use meets human needs while preserving the environment so that the needs can be met not only in the present, but also in the future.
- Social and political, where policies and programs are sustained over time because they are perceived as working for the welfare of society and are therefore supported by the people.

We frequently undertake programs to obtain the support of the people that are public information programs. We try to explain and convince. I have had a personal experience with a different approach in a hydroelectric relicensing effort that my company undertook in the Sierra Nevada of California. The situation with an existing facility with a very large reservoir was very complicated with many land use and water use issues involving multiple stakeholders – municipalities, local, state, and federal authorities, commercial entities, various non-governmental organizations (including community organizations), and individuals. We engage with the range of stakeholders on the ground floor, asking them in wide-ranging, close proximity conversations, what their issues and concerns were related to the facility. At each point we summarized what we had heard to ensure that their messages were understood and that they knew that

they had communicated. We then went off to develop a first draft plan that tried to accommodate their concerns, and proceeded to engage a second round of consultations with that draft plan in hand. And so forth. After a lengthy, interactive process, we submitted a detailed plan to the federal authorities, who were then astonished to receive a multitude of interventions **in favor** of our plan. Engaging honestly with the stakeholders from the outset made the plan their's as much as our's.

The energy sector is at the nexus of economic and environmental sustainability. The world is changing rapidly in terms of environmental considerations, technological progress, and globalization. And the pace of change is accelerating. The economic challenge is to secure affordable and sustainable energy services for energy consumers. However, because the world is changing so rapidly, governments cannot afford to bet on specific technologies. It is investors who should be putting their capital at risk. *And yet again, governments should focus on providing a long-term, stable framework for all energy chains from the source to final use to ensure "proper" investment and consumption decisions.*

We recently completed a study of how well our member States are doing vis-à-vis their commitments on energy and environment. The work was done on behalf of the OSCE. The overall assessment is that they are doing pretty well, though there is more to be done. I must point out that statistics are always dangerous because the choice of start and end dates has an effect on the conclusions. So does the choice of indicators.

What jumped out at me in reviewing the study was the extent to which prices are an effective tool for bringing about sustained change. It is not rocket science. Market prices that reflect supply and demand considerations, including environmental costs, are that much more effective. They communicate the need for investment and the need to demand restraint. Adam Smith's invisible hand was sullied by unfortunate episodes such as Enron, which were unrelated to market competition but rather to corporate governance. Maybe it is time to wash that hand and return to competitive markets while recognizing that governments have an important role in designing, monitoring, and regulating markets so that they work properly.

Turning now to security of supply, the Executive Secretary made several references in his remarks yesterday. We are all familiar with the security of supply issues of oil and gas. Oil was the concern in the 1970s and 1980s, with establishment of the IEA and then the international energy forum. Natural gas was an issue more recently in the 90s and 00s. The solution was to allowing markets to work and let consumers be exposed to market prices, to invest in fuel diversity, diversity of sources of supply, and technological diversity. An expensive insurance policy that still frames today's debates.

But the world is now moving to a new place. The addition of security of demand to the topic of security of supply illustrates the common interests, globally and regionally, of ensuring that energy can make an optimal contribution to sustainable development – it is not in the interests of primary fuel suppliers to kill the economies of the consumers, nor is it in the interests of consumers to pay such low prices that needed investments cannot be supported financially.

Renewables that are ephemeral and distant impose costs for energy and capacity back-up and network reinforcement. Natural gas plays a key role in replacing by energy capacity and energy when the renewables are not available, and it helps with grid stability by providing needed balancing services in the right places. Natural gas is also more efficiently – you could call it power by pipe – since it does not suffer the same levels of losses as power transmission does.

Shale oil and shale gas are changing the market dynamic, and we appear to be finally truly on the cusps of a global gas market. They nevertheless are the source of serious concerns about environmental consequences, concerns that must be address in an open and inclusive way.

Finally, smart, grids, smart cities, smart cars, smart buildings, smart everything – these are important advances that nevertheless create new security issues.

We face a set of common interests and common challenges on energy. How can we best structure a dialogue? It must be continuous and relevant to the challenges of today and tomorrow.

There is need to:

- address market failures that hinder cost-effective improvement of energy and carbon intensities, for example
    - subsidies not only of fossil fuels, but also of consumer tariffs and even renewables;
    - market structures that hinder innovative new entrants
    - invest in end-use energy efficiency, as noted it is the low hanging fruit, but it is not happening.
- improve the efficiency of existing coal-fired power stations – the current world average efficiency is roughly 28%, whereas the best plants achieve upwards of 45%.
- progressively switch to natural gas away from coal – a phenomenon we already witness in the US market that is price and market driven. Rethink the role of natural gas as an enabler for the shift, and put in place the regulatory and policy framework that allows it to play that role.
- develop the technologies of renewable energy further so they can contribute to cost-effective attainment of environmental goals – renewables are an important component of the future energy mix, but at the same time we cannot afford to create an industry that depends on subsidies forever.
- put in place systems of smart grids, smart cities, smart everything that allow renewables to play a bigger role, and in the interim use natural gas as an efficient back-stop for intermittent renewables.
- pursue and develop projects that cost-effectively capture and store carbon
- if countries wish to maintain the nuclear option, it is easy to say but hard to do. It can only happen if the nuclear sector meets its safety obligations and can be cost competitive

Each technology has a role to play, there is no single solution.

There is a need for normative instruments like best practices along with performance benchmarking. Well-designed, well-structured markets with appropriate regulation could enhance performance. Investing in appropriate best technology, enabling finance, applying modern management skills – all efforts are needed to attain security of supply and demand and to put us a path to sustainable energy for all. Strong engagement with private industry is needed. *Governments need to put in place the policies and regulations that empower producers and consumers to respond to a dynamically changing environment*. Governments should not put its capital at risk – that is the proper role for industry.

As the Executive Secretary said yesterday, UNECE remains prepared to support a well-structured dialogue in collaboration with our partner organizations, if our member States so desire.

Thank you for your kind attention.

******