A Lot More Needs to Be Done to Make a National Innovation System a Reality

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In the age of globalization is it appropriate to say that a universal innovation system is in the offing? To your opinion how Russia may effectively participate in it?

In spite of the globalization, we do not expect that the national innovation systems of every country will converge to a common, integrated, unified or universal innovation system. To justify this statement we need to take a look at the goals and objectives of each country. They differ widely even in the globalized scenario. Take for instance, the evolution of Smart Grids. Every country aspires to tap on the benefits of smart grid implementation to meet their own objectives. In the European Union, the main objective of smart grid implementation is to achieve demand response and outage management, while in India the primary focus is to achieve technical and non-technical loss reduction.

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To what extent energy innovations can be regarded as integral part of national innovation systems? Or perhaps they are efforts of individual companies either supported by governments or going alone at their own risk?

As per our estimate, about 60% of the energy innovations in India or other developing countries are attributed to the national innovation systems, primarily in the energy generation and transmission sectors. Till 2001, the distribution sector which was essentially a subject of State Governments and not the Central Government, was not covered by the national innovation systems. Hence, due to high distribution losses, the various state electricity boards entered the red. Realizing its folly, the Ministry of Power, Govt. of India decided to fund different programs to strengthen the distribution sector under its prestigious "Accelerated Power Development Program". Even then, the innovations related to the distribution sector are essentially due to the efforts by the private sector – namely individual companies and their R&D labs which are competing fiercely to retain their share of market and funds.

Who or what institutions set targets for innovations in energy? In the last two decades international and national standards have been tightened dramatically. How did it affect national innovation strategies? Could you show some most eloquent examples?

For the generation and transmission sectors, it is essentially the Central Electricity Regulatory Commission and the Central Electricity Authority, the latter monitored by the Ministry of Power, Govt. of India which set the targets for innovation in energy. Recently, with the formation of the National Innovation Council headed by Dr. Sam Pitroda, Advisor to the Prime Minister on Public Information, Infrastructure and Innovation, and Head of Smart Grid Task Force, India is poised for even more drastic power sector reforms.

It is true that over the past two decades, both the International Electrotechnical Commission (IEC) and the Bureau of Indian Standards (BIS) have tightened, respectively, the international and national standards. However, we are of the opinion that such a move is in the national interest as it would compel the electrical industry to innovate. For instance, the introduction of the Availability based Tariff (ABT) by the Centre has resulted in numerous innovation strategies that has brought in Grid discipline. Thereafter, the nation has been observing a much more stable regional grid.

On the distribution front, programs such the 100% metering program or our own initiative of Apparent Energy Metering to reduce aggregate technical and commercial loss has affected the innovation strategies in India.

Major innovation trends in energy deal with its generation and saving reminding a centuries-old argument of who comes first a hen or an egg. Which sector scored more impressive results so far and why?

So far, the major innovation trends in energy has been in the generation sector, and that too from renewable sources such as wind, solar and biogas. This is because, it was felt that the efforts required to be put in to achieve energy saving are considerably higher than those required for generating it.

It is therefore, obvious that the generation sector has scored more impressive results. However, in view of the fact that the cost of electricity distribution can only reduce

through energy savings, the attention is shifting, lately, towards innovation in energy savings. For instance, we will soon witness to numerous innovations in every electrical appliance for saving energy, thanks to the introduction of Apparent Energy Tariffs by the Centre for Apparent Energy Research. The change in the unit of energy measurement from kWh (unit of Active energy) to kVAh (unit of Apparent energy), is a harbinger of innovation in the appliance market. Tariff acts as a powerful enabler to not only trigger an electrical revolution that will ensure that old inefficient appliances that operate at low Power Factor and inject Harmonics are systematically replaced by the more efficient ones. Accordingly, we will also see a change in the labeling scheme from the unit of Active power (W), to that of Apparent Power (VA).

Taking energy as an example what are the proper roles for national governments and businesses to play in innovation? Is it the state or the market that draw the guidelines? Their cooperation today, how close is it to your perception of how in fact it should work?

In the energy sector, it is appropriate for the national government to draft the framework and guidelines for innovation, while businesses are expected to innovate using these guidelines. However, it seldom works in this manner. We find market forces acting as a driver and giving the necessary impetus to innovation. Though we find an increased co-operation between the government and the businesses, a lot more needs to be done to make a national innovation system a reality. It is important for the government to take the first step. Businesses will be bolstered to take up innovation seriously only when they see the government taking this step. In India, this step was taken only in 2009 through the formation of the National Innovation Council. Earlier, the absence of such a council showed up as a serious impediment to economic growth.

How tough is international competition in the energy innovation market? What did it bring about and what may it introduce in practice?

Competition, both of the national and international kind, is conducive for innovation and, thereby, economic growth. It is tough for any industry to face international competition, but the reward through innovation is equally sweet.

It is important for the competition to be a healthy one, otherwise it could have a detrimental effect. Take for instance, the introduction of Compact Fluorescent Lamps (CFLs) by the western countries. Actually they were developed with an intention to replace incandescent lamps. However, in the developing countries, the marketing strategies were changed, and the more efficient straight 4 feet long fluorescent tube market was targeted. Though CFLs (<60 lumens/Watt) are less efficient than their straight counterparts (100 lumens/Watt), and also inject undesired harmonics into the lines, the consumers in India were cheated. The advertisements by CFL manufacturers depicted the CFL lamps to be very efficient when actually they were not. Also since the CFL lamps "appear" much brighter to a naked eye, the wrong advertising tactics reinforced the wrong impression gathered by the gullible consumers.

How effectively energy innovation may influence national policies and international relations?

Energy innovation play a vital role in every aspect. They hold the potential to influence and change not only national policies but also international relations.

For instance, the use of apparent energy meters for billing and tariffs will be responsible for changing the basic unit of energy measurement from Wh to VAh and that of power from W to VA, as described earlier. This has a ripple effect, since soon the labeling of electrical appliances would be changed in terms of VA instead of W.

INNONEWS

High Technologies. Innovations. Investments (Hi-Tech'2011), 17th International Exhibition Congress, St. Petersburg, Russia.

Dates: 15-17 March 2011

Venue: Lenexpo, St. Petersburg, Russia

International exhibition congress "High Technologies. Innovations. Investments" is one of the leading Russian events in the field of high technologies, innovations, investment projects in scientific and technical sphere and provision of efficient collaboration of scientific organizations and enterprises with industry and potential investor.

"High Technologies. Innovations. Investments" exhibition congress is held together with St. Petersburg Technical Fair, the leading Russian project in the field of metallurgy, mechanical engineering, automobile industry, metal processing and industrial innovations. Russian and foreign scientific organizations, state scientific centers, scientific and research centers, industrial establishments, small business organizations and institutes of higher education will participate in the exposition

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Private Equity and Venture Capital in Russia, 22 March 2011

The second forum of the BVCA International Series will focus on Russia. In partnership with the Russian Venture Capital Association (RVCA), the Russian Venture Company (RVC) and the Russian Private Equity Initiative (RPEI), the conference will bring GPs from the UK and Russia together with international institutional investors with an interest in investing in Russia.

GPs based in the UK within an interest in emerging markets will benefit learning from investors and fund managers with hands-on experience investing in the Russian market. Institutional investors will have the opportunity to talk about the challenges they face when investing in Russia while also highlighting where they feel the best opportunities are for the future.

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