Greening of Indian Infrastructure

By

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The challenge of climate change is here to stay with us for decades, if not longer, and for many generations to come. India and the rest of the global community will have to continue to develop climate friendly policies to reduce green house emission and address development concerns and simultaneously adapt to living in a world whose climate will be distinctly different from that of the last century.

In 1992 countries joined an international treaty, the United Nations Framework Convention on Climate Change (UNFCCC) to co-operatively consider what they could do to limit average global temperature increases and the resulting climate change, and to cope with the inevitable impacts. The historic Kyoto Protocol was adopted in 1997 legally binding signatory developed countries to emission reduction targets. Subsequently, the Copehagen Accord in 2009 established the importance of reducing emission in both developing and developed countries and the need to establish financing mechanism to support mitigation efforts in developing countries.

The UN Climate Change Conference in Durban, South Africa conducted in December 2011 resulted in a major breakthrough in international community's response to climate change. The most recent UN Climate Change Conference in Doha, Qatar concluded in December 2012, agreed ways and means to deliver scaled up climate finance and technology to developing countries.

The ultimate objective of the climate negotiations is to stabilize greenhouse gas concentrations in the atmosphere at a level that will limit dangerous human interference with the climate systems.

Because developing countries have lower incomes than industrialized countries, developing countries are more vulnerable to climate change impacts and have less

capacity to adapt to these impacts than developed countries. Further, while emissions of developing countries as a whole are rising, the per capita levels of emissions are less than those of industrialized countries and the absolute level of emission for most developing countries is extremely low. The real challenge before the global community is to address the needs of developing countries while safeguarding the economic interest of industrialized countries and balance both interests.

Greenhouse gases will increase anywhere between 25 to 90 percent in 2030 from 1990 levels. Deep reductions in emissions are possible without undermining the global economy through rapid and significant advancement and deployment in climate-friendly technologies – renewable energy and emerging technologies such as carbon capture and storage. Such technologies will expand the options for reducing green house gas emission and thus for international co-operation.

India has been under pressure to develop a robust climate policy that addresses its rising greenhouse gas emissions that are likely to accompany its impressive economic growth. India's development concerns and mitigation and adaptation challenges are therefore important, as this was the framework that was laid out in the National Action Plan on Climate Change (NAPCC). The approach as described in this document is widely expected to lead to a directional shift in India's development pathway.

The eight dedicated missions outlined under the National Action Plan on Climate change are expected to advance India's development and define its approach to climate mitigation and adaptation.

For the purpose of our discussion, it would be appropriate to address three Missions namely: National Mission for Enhanced Energy Efficiency (NMEEE), National Mission on Sustainable Habitat (NMSH) and National Solar Mission (NSM), which have far- reaching implications for the Indian infrastructure sectors and provide necessary guidelines for future course for action. Individual ministries and agencies have developed the mission documents.

The country's gradual shift towards alternate energy is transforming the structure of generation and consumption of energy in the country. Renewable energy is green, clean and sustainable. The Government has approved a new policy on the development of solar energy in the country by launching the Jawaharlal Nehru Solar Mission. National Solar Mission is a major initiative 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. Over a period of time, the country aims to pioneer a graduated shift from economic activity based on fossil fuels to one based on non-fossil fuels and from reliance on non-renewable and depleting sources of energy to renewable sources of energy. Scientific, technical and managerial talents will be pooled with sufficient financial resource to develop solar energy as a source of abundant energy to power our economy and to transform the lives of our people. The Mission has set the ambitious target of deploying 20,000 mw of grid connected solar power by 2022. The Ministry of New and Renewable Energy is the nodal Ministry for all matters relating to new and renewable energy.

Alongside solar energy, there is adequate emphasis on the development of hydropower, biomass power, wind, tidal and waste to energy.

Yet another area which is gaining heightened importance and attention is sustainable habitat and urban infrastructure. The National Mission on Sustainable Habitat seeks to promote sustainability of habitats through improvements in energy efficiency in buildings, urban planning, improved management of solid and liquid waste, modal shift towards public transport and conservations through appropriate changes in legal and regulatory framework. Extension of the energy conversation building code addresses the design of new and large commercial buildings to optimize their energy demand. It also seeks to improve ability of habitats to adapt to climate change by improving resilience of infrastructure, community based disaster management and measures for improving advance warning systems for extreme weather events.

The Leadership in Energy and Environmental Design (LEED – INDIA) Green Building Rating System is a nationally and internationally accepted benchmark for the design, construction and operation of high performance green buildings. LEED – INDIA provides building owners, architects, consultants, developers, facility managers and project managers the tools they need to design, construct and operate green buildings. It concentrates on five key areas: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality.

Water recycling in India is an inescapable necessity and the sustainability factor is very crucial and critical in term of protecting and preserving precious resources on this planet. A UN study, for instance, estimated that two thirds of the world's population would suffer from water scarcity by 2025 given the current consumption levels. One key solution to restore the balance between supply and demand is sustainable generation of potable water as well as more efficient use of the existing resources. Again, India is facing the acute problem. Apart from the increasing population, growing urbanization, global warming and pollution are factors contributing to the depletion of water resources. There are two ways to deal with the problems. The first one is water recycling and the other is desalination. Of the two, recycling is the more cost effective option. Industries are increasingly resorting to reuse of industrial wastewater and municipal wastewater.

These and many other innovative initiatives have brought in their wake significant and appreciable results in building a sustainable infrastructure sector in the country. India is bracing up to face the emerging challenges of building an ecosystem that will promote environment friendly economy and habitat in response to the global call for limiting greenhouse gas emissions. We hope the country's efforts in this direction will go a long way in ensuring better livelihood for our future generations and contribute to building a happy, healthy and clean planet.

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