

ATTAINING SUSTAINABLE RENEWABLE ENERGY TRANSITION

Post CoP 21 at Paris, almost all countries across the world has taken a pledge towards curbing CO2 emission. The effort is to restrict global temperature rise by about 1.5 degree centigrade till 2050. India is also a signatory to the Paris accord and has also committed its NDCs to restrict CO2 emission by 2030. Most of the developed countries in the world may have given very ambitious and gracious targets to themselves but the fact of the matter is that India is probably the only G20 country, which is moving on track to contain the temperature rise to 1.5 degree centigrade. India has set a target of achieving 175 GW of Renewable Power capacity by 2022 and is confident of attaining it. The latest solar power tender by SECI has shown a very affordable low tariff of Rs 2.00 per kwh. The energy transition which has to underpin this global target, involves adoption of Renewable Energy to replace fossil fuels. This energy will be deployed in electrification as well as transport, besides its adoption in energy guzzling heavy industry. European Union and some other countries including China have begun to give themselves ambitious and aggressive targets to reach a goal of net zero emission. It is to be seen, how soon they move on that path. The task may be easier for developed countries, where per capita energy consumption is well within satisfaction limits, if not excessive. Moreover, these countries are flushed with financial resources, very cheap capital and well established research and development infrastructure. They may even be trying to position themselves to be able to market new technologies to each other and to the developing world. For the developing world, a task will be to enhance the availability of energy to a substantial portion of its population, as its availability and consumption is well below the global average. The developing countries will need to move towards this energy transition with alacrity and sagaciousness. Their good, will lie in continuing to work hard on energy efficiency and conservation, both in electricity as well as transport fuels. The energy transition has to be built upon a movement from fossil fuels to renewables like solar and wind for electricity, accompanied by a movement from traditional liquid fuels to lesser polluting and more efficient liquid and gaseous fuels. The role of **Hydrogen** in transportation as well as CNG for less polluting fuels will be important. India which is endowed with coal resources will have to find less polluting and more beneficial utilization of coal to

chemicals. The coal industry as well as the Government of India has announced plans for conversion of coal to liquids and gases, as well as chemicals, instead of mere combustion of coal. Hydrogen economy will involve development of appropriate and affordable technologies to produce and transport hydrogen. The shift in future plans of major petroleum and coal based industry to invest substantially in Renewable Energy is a welcome shift. Research and Development and its aggressive promotion by the government in developing countries as well as the traditional oil and coal industry could be game changers in energy transition.

The adoption of electric vehicles as well as Renewable Energy will require a massive investment in the development of the energy storage facilities to ensure smooth transition to the new fuels. A paradigm shift in the thinking of industry, governments and the public, besides a massive investment in skill development and new technologies is called for, if developing countries like India are to gain, from the new inevitable energy transition and not become mere importers and users of the new technologies. If the developing countries do not swiftly move in that direction, the economic and development gap between the developed and developing world will increase, instead of diminishing in the coming decades.

Adoption of new technologies and the greater involvement of the private sector, besides the reduction in project cost will require swifter decision making and formal allocation of projects. The distribution sector, particularly in electricity will be required to run purely on commercial lines, along with the development of viable and low carbon energy sources, competitive energy markets and revamping of the distribution system with larger decentralisation and adoption of modern technologies, involving the customer as an intelligent and responsible participant to extract the full benefits of the economic activity.

This will be necessary for ensuring that the “Make in India” and the “Vocal for Local” objectives become meaningful and effective.