Challenging Waters!

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There is a question often asked – should India exploit its offshore wind resources? The Government of India has recently come up with a Draft National Offshore Wind Policy and some work is getting initiated in terms of feasibility etc. The answers to above question are varied, depending on who the stake-holder is and how the harnessing of offshore winds for power generation would impact his business. Some stakeholders who are involved with onshore development of wind power may feel that harnessing of offshore potential would impact their business because of a greater focus by policy makers, electric utilities, regulators and the investors on the offshore opportunity. There are others who feel perhaps it will be an exercise in futility because of the technological and economic barriers. Though there may be some element of justification in such reasoning, however, given the fact that the technology is not only well established but is also evolving for suitability in more challenging waters, there appears to be no sound basis to further delay harnessing of offshore wind energy potential. From a national policy perspective, the same rationale that holds for onshore wind development, will also drive the offshore wind harnessing, i.e., indigenous energy resource capability, environmental sustainability, energy security and energy and power shortages as well as growing electricity demand. Therefore, from a policy viewpoint there may not be any barriers to an offshore program. The only limiting factors can be resource availability, economics and technology. India has a vast coastline of more than 5000 km for the mainland and around 7500 km if Andamans and Lakshadweep islands are also considered. By any reasoning, Indian coastline presents a vast resource area to the country. According to initial assessments, if a stretch of up to 40 km from the coastline over depths up to 40 m is considered in the offshore region, a theoretical potential of the order of 1000 GW wind power exists that can yield plant load factor (PLF) of 25-50%. This figure, of course, should be further refined to accommodate many different aspects of offshore environment and activities such as fishery, ship movements, ports, jetties and harbors, coastal security, ocean environmental issues etc. However, the fact remains that resource availability is not a constraint. Today, across the world, we have nearly 5000 MW of offshore windfarms, which is not a large capacity from a worldwide perspective but it is more than sufficient to prove that the technology is fully mature. There continue to be new developments in this area with floating wind turbines as well as larger wind turbines of up to 8 MW. Therefore, all the preconditions for harnessing offshore windfarms including the policy intent in the form of draft policy exist. A main barrier to development of offshore windfarms in India is the non-availability of not only wind speed data but also data on waves and submarine conditions that would be essential for setting up any structure out in the sea. The Ministry of New and Renewable Energy (MNRE) along with CWET should initiate a major program on carrying out measurements of climatic and sea conditions across Indian coastline.

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