

Plenary Keynote: Jyoti Parikh

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Relevance of Hydrogen for India

Abstract

India has committed to reach net zero emissions by 2070 at the COP26 Glasgow meeting. Therefore, India is seriously examining the hydrogen options in 3 ways: A) The Government of India has committed itself by setting up a green hydrogen mission with a production target of 5 million tonnes (MT) by 2030, and 25 Mt by 2045, with an outlay of US\$ 2.2 billion by 2030 as an incentive, to encourage the private sector to enter into various aspects of hydrogen supply and utilisation chain. The private sector, especially associated with petroleum and gas, is taking the benefit from these incentives and coming up with prototypes and pilot projects. B) In addition, the private sector is also active. Because their exports and competitiveness depend on how soon they can adopt green technologies. The EU has also thrown challenges to the exporters, especially to steel, aluminium, fertilisers, cement and power by announcing CBAM. This has increased their efforts. C) Moreover, the Department of Science and Technology (DST) has R&D programme that funds and has set up 3 Hydrogen Valley platforms so that various laboratories and the private sector can experiment with green and grey hydrogen and test their prototypes and possibly develop start-ups.

In addition to summarising the current efforts, IRADe modelling work will be discussed. The Hydrogen option is a part of the IRADe model that covers the entire energy system of India with

various supply technologies and end use sectors in the net zero pathway framework, observes that the green hydrogen would require substantial electricity generation capacity based on RE. This capacity is limited which is also shared by other sectors, such as power sector, Electric Vehicle, DRE and hard-to-abate- industries

The talk will describe India's plans for the development of hydrogen and its priorities, private sector engagements and R&D efforts. It will also include observations from IRADe modeling work that gives breakeven price of Hydrogen that decides competition with other options in power and industries sectors.