CARBON CAPTURE AND STORAGE (CCS)

Fossil fuel will occupy a major part of energy mix at least until 2047. As long as fossil fuels and carbon-intensive industries play dominant roles in our economies, CCS can be a critical greenhouse gas reduction solution. Although a nascent technology, this analysis captures different scenarios of growth of CCS technology in India. However, as this has cost implications, its adoption in the Indian price sensitive market is quite uncertain. The present analysis captures the likely volumes of CCS based technology in India, under four scenarios upto 2047.

Level 1

This scenario envisages no planned generation plants with CCS until 2025, and will start to increase but at a slow pace due to lack of efficient and cheap technology. The growth is slow also due to low power prices and inefficient power markets. Generation with CCS usage will increase to 7 GW till 2047.

Level 2

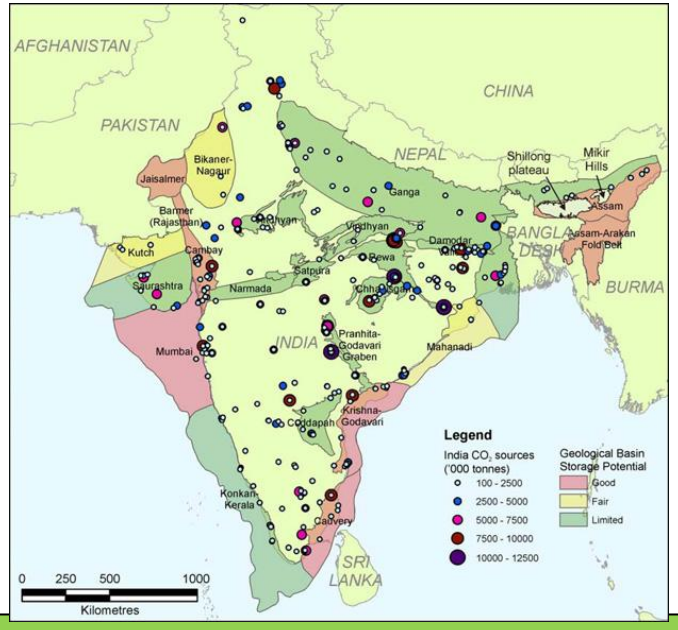
Generation with CCS usage will be deployed at a slow rate. India will follow projections for US with some time lag. Generation with CCS in 2022 will be around 1 GW and will reach 35 GW by 2047.

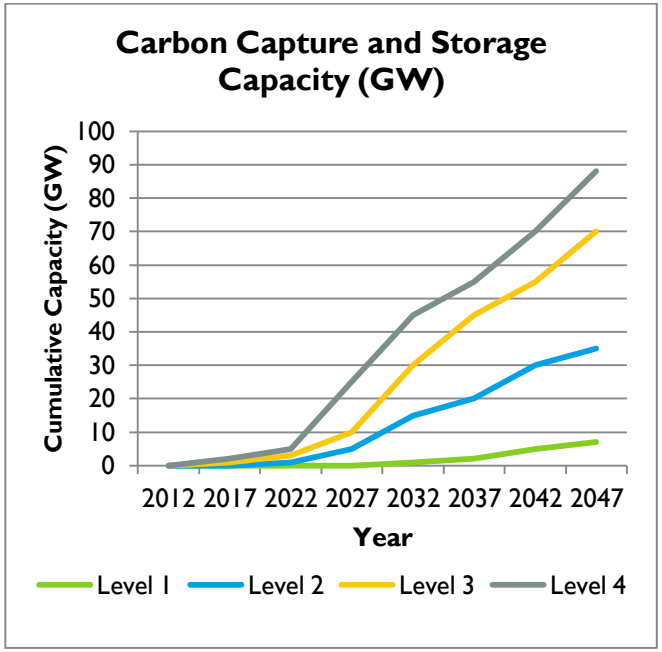
Level 3

CCS-equipped capacity is expected to grow, but absolute growth rate in capture-equipped capacity occurs during 2030 - 2040. Going by International Energy Agency roadmap for CCS technology, 2013 India will target generation capacity with CCS of 3 GW by 2022, increasing to 70 GW by 2047.

Level 4

More generation plants with CCS technology will be deployed as a result of upgrading technology and reducing capital requirement. India will begin constructing its own demonstration scale facilities, and considering more ambitious CCS projects. India will have 5 GW's of CCS generation capacity by 2022 increasing to 88 GW by 2047.





Note: Please see detailed documentation for references