

Carbon Capture and Storage

Carbon capture and storage refers to a process of capturing carbon dioxide from and storing it in suitable sites, from which it will not enter into atmosphere. This can provide solutions to reduce carbon emissions from fossil fuel based power plants. This lever provides choices to the users, for selecting different level of carbon capture and storage linked power plants. Impact of user's choices on various outputs like emission reduction and cost implications can be seen.

Level 1

Level 1 assumes that no plants with CCS will be commissioned by 2025, due to high upfront cost. Generation with CCS usage will start from 2030 onwards and increases gradually to 600 MW by 2050. Electricity generation from plants using CCS technology would be 3.32 TWh in 2050.

Level 2

Level 2 assumes that power plants with CCS usage will be deployed at slow rate. Costs remains the major barrier, however due to government's intention and commitment to reduce carbon emission CCS usage will start in 2025 and will reach 3.5 GW in 2050. Electricity generation from plants using CCS technology would be 19 TWh in 2050.

Level 3

Level 3 assumes that owing national commitments on GHG reductions and state government efforts, CCS based plants will increase at a much faster rate. Cumulative capacity of plants with CCS technology will reach 6.5 GW and generation from CCS based plants will increase to 34 TWh by 2050.

Level 4

Level 4 which is the most optimistic scenario, assumes that growth rate of plants with CCS technology will be much higher, due to decrease in capital cost and technological advancements. Cumulative installed capacity of CCS based plants will increase to 7.1 GW by 2050. Electricity generation from these plants would be 37 TWh by 2050.

