Electricity: Gas with CCS

Total installed capacity of natural gas power plants in 2015 was 13.69GW with average 5.3GW available and produced 24.09 TWh. Gas power plants contributed 70.36% of grid electricity generation. There is currently no gas power plant with Carbon Capture and Storage. However, use of gas with CCS has the potential of reducing emissions from electricity generation.

Level 1

Assumes that gas with CCS is not developed by 2050.

Level 2

Assumes that 5 GW of gas with CCS is developed by 2050. This should produce 39 TWh per year.

Level 3

Level 3 assumes that by 2050, a capacity of 25 GW gas with CCS is achieved by producing 193 TWh per year.

Level 4

Assumes gas with CCS plant capacity reaches 50GW by 2050 which should produce 386 TWh per year.

Key Interaction

The amount of CO2 actually captured and stored is dependent on the capture rate controlled by the CCS Capture Rate lever. Gas with CCS can meet any remaining peak electricity demand after storage and balancing technologies have been used. The Calculator doesn't model the intermittency of wind and solar across the day and so it may underestimate the contribution of Gas CCS in the power sector. While Gas CCS will help meet peak demand, it is also likely to generate during low wind periods.

Default Timing Start Year: 2035 End Year: 2050

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Sub-Lever	Units	2015	Level 1	Level 2	Level 3	Level 4
Gas Capacity	GW	0	0	5	25	50