Electricity: Biomass with CCS

The use of biomass in power generation offers net zero emission as most of the carbon dioxide emitted from the combustion of biomass in power generation has been previously absorbed by the crop. Currently there is no biomass power plant in operation in Nigeria. However, a 0.005GW Biomass power plant is under construction. The use of biomass with Carbon Capture and Storage can offer negative emissions as CO2 emitted during generation are captured and prevented from re-entering the atmosphere.

Level 1

Assumes that no biomass with CCS power plant will be available up to year 2050.

Level 2

Assumes a 5 GW of biomass power plant with CCS should be available by 2050 and producing 37 TWh per year.

Level 3

Level 3 assumes a 7 GW of biomass power plant with CCS by 2050 which will produce 52 TWh per year.

Level 4

Assumes 10 GW of biomass with CCS power plants by 2050. This can produce 74 TWh per year.

Key Interaction

Biomass for power has a direct impact on the demand for biomass. Biomass can be created from waste and biomass grown, but these have limited availability. Demand has to be satisfied by Nigerian production. Bioenergy production can be controlled through the Land Use & Biofuels levers. The amount of CO2 captured and stored is dependent on the capture rate controlled by the CCS Capture Rate lever.

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Default Timing Start Year: 2035 End Year: 2050

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Sub-Lever	Units	2015	Level 1	Level 2	Level 3	Level 4
Biomass Capacity	GW	0	0	5	7	10