

13. Hydroelectric power

Hydroelectricity converts uses fast flowing water to drive turbines to generate electricity. To ensure continuous supply, dams are used to store huge amounts of water. The size of the valley to store water and the annual water supply is the practical limit on generation capacity.

The last decade

Karnafuli Hydroelectric Power Station started operating in 1962 and has a current generation capacity of 230MW. There are no other commercial scale hydroelectric dams in Bangladesh.

Assumptions of model

It is assumed hydroelectric generation will have an average load factor of 38%.

Levels

Level 1

Least effort. No new capacity is added. Karnafuli continues to produce 230MW.

Level 2

Current policy. There is a small expansion, adding 100MW to Karnafuli’s capacity.

Level 3

A second round of expansion in 2020 increases total capacity to 410MW

Level 4

The 2020 expansion is larger, increasing total capacity to 550MW

Interaction with other levers

There are no modelled interactions with other levers. Expansion of Hydroelectric capacity implies an expansion of Kaptai lake, which would slightly affect the balance of land types. This could have a affect on the food security, aquaculture and biomass from marginal land models, but the difference would extremely small.

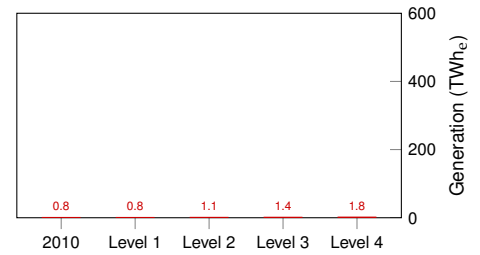


Figure 13.1: Projected Capacity in 2050

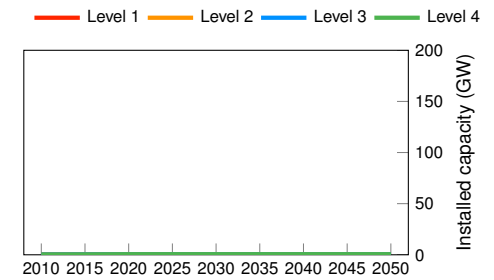


Figure 13.2: Development of capacity by scenario



Figure 13.3: Karnafuli Hydro Power Station