

## 1. Coal power capacity

Coal Power generation is the burning of coal to generate steam to drive turbines. Bangladesh has small but high quality coal deposits, and coal remains the cheapest source of hydrocarbon generated electricity on the international market.

### The last decade

In 2010, Bangladesh operated only 1 small coal based power plant (Barapukuria) providing 0.25 GW of electricity. The official Power Sector Management Plan 2010 (PSMP2010) calls for an expansion of coal based generation to 16 GW capacity by 2030.

### Assumptions of model

The model assumes sufficient generation capacity can be built at the rate specified and sufficient budget is available for construction. Average load factor in 2010 was 45%. Thermal efficiency and self use of electricity are set at 30% and 6% respectively.

### Levels

#### Level 1

Least effort. No new coal power is developed and Barapukuria is decommissioned due to age shortly after 2050

#### Level 2

Current policy. Coal Power Plants are built to meet the PSMP 2010 target of 32GW by 2030. This constant build rate is maintained until 2050, resulting in a final capacity of 31.75 GW.

#### Level 3

The PSMP target for 2030 is again met, with the build rate afterwards accelerating, increasing the Coal Power capacity by 6% per year, in line with GDP projections. The 2050 capacity is 51.3GW.

#### Level 4

The PSMP target for 2030 is met, and the build rate then accelerated to increase capacity by 10% each year, to exceed GDP projections. The 2050 capacity is 107.64 GW.

### Interaction with other levers

The Coal Power Technology lever will influence how much coal is needed to meet the power station demand set by this lever. Some of the coal used in power generation can be sourced from charcoal or co-fired biomass. The rest is sourced from domestic or imported coal. The exact source mix will vary according to the settings on the Bio-energy group of levers and the Coal Imports lever. Increased use of coal energy would result in increased freight energy needs to deliver the coal, but this interaction with transport energy is not explicitly modeled.

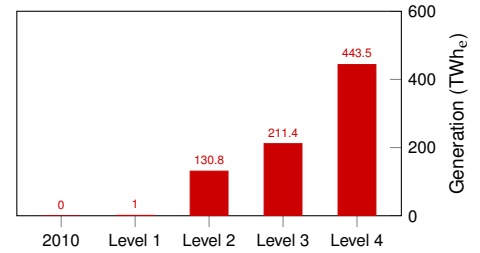


Figure 1.1: Projected in 2050, assuming level 1 setting for Coal Technology lever

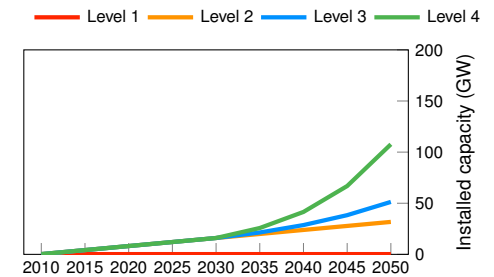


Figure 1.2: Development of capacity by scenario



Figure 1.3: An example Coal Power Plant