Coal Power Stations

In last 10 years, production of coal in Assam has been reducing at a compounded annual growth rate of 8%. First coal based unit, Bongaigaon Thermal Power Plant, was commissioned in 2015 with an installed capacity of 250 MW. Subsequently, one more unit of same size commenced operations in 2017. The power plant mainly run on coal supplied from North Eastern Coalfields Limited (NECL) and Eastern Coalfield Limited (ECL). This lever provides options to users to select between most optimistic trajectory, wherein coal based power plants grows substantially in coming decades and most pessimistic trajectory wherein no new capacities are added. Further, users can estimate the quantity of coal required to meet the desired level of power supply by adoption of new efficient technologies like super-critical, ultra super-critical technology etc. The factors/levers are ease of accessing technology, policy drivers, power markets and availability of high grade coal. In all the four levels, it is assumed that third unit of Bongaigaon Thermal Power Plant, which is under construction will be commissioned as per plan.

Level 1

No new coal based power plants are added in level 1. This could be because of government's focus on increasing electricity generation from renewable energy sources and non-availability of any coal linkages. Further, it is assumed that plant load factor of existing units will slightly improve to 55%.

Level 2

Level 2 assumes that coal supply could improve slightly and Margherita Thermal Power Project will get commissioned partially, increasing total installed capacity to 3.2 GW by 2050. Plant load factor of power plants will improve to 60% by 2050, which could be due to Due to improved coal supply. Further, IGCC (Integrated Gasification Combined Cycle) will contribute 50% of the capacity addition during 2045-50, ultra super critical will have a share of 40% and super critical technology will contribute to only 10% of capacity addition.

Level 3

Level 3 assumes slightly higher growth rate of coal based capacity addition, which could be due to development of infrastructure and improvement in domestic coal supply. Total installed capacity will reach unto 4.8 GW by 2050. PLF will also improve from to 65% in 2050. Moreover, new and efficient technologies could be adopted at a faster rate. Only existing sub critical and super critical plants which are under construction will be commissioned and thereafter no new subcritical plants will be added. Share of super critical plant in additional capacity during 2045-50 will decrease to 5% and share of IGCC's would increase to be 65%. Remaining 30% plant will be from ultra super critical technology.

Level 4

Level 4 assumes there might not be any constraints to addition of coal based power plants and new technology deployment might get promoted aggressively. Margherita Thermal Power Project will get coal linkage and commence operations as per proposed timelines. Growth rate of capacity addition will be higher than historical growth leading to installed capacity of 6.4 GW by 2050. Only existing sub critical and super critical plants which are under construction will be commissioned and thereafter no new subcritical plants will be added. IGCC will contribute 80% of the capacity addition during 2045-50 and remaining 20% will be of ultra super critical technology.