Gas Power Stations

Development of gas based power generation in Assam started way back in 1960s when the first unit of Namrup Thermal Power Station (20 MW) was commissioned. Subsequently 5 more units were commissioned by 1986 which led to increase in total installed capacity of Namrup Thermal Power Station up to 120 MW. By year 2015, total installed capacity of gas based power plants in Assam was ~570 MW which included Lakwa, Kathalguri and Banskandi power stations. Most of these power plants are running at an average PLF of 60%, since North Eastern customers get a 40% discount on NCV basis, under the gas pricing mechanism. The present analysis deals with grid connected gas based plants and how they will grow under different scenarios. It is expected that Gas based power will be vital not only to meet peaking demand but also to balance intermittent generation from renewable energy sources. Further, in all the four levels, it is assumed that existing plants which are under construction will be commissioned as per plan.

Level 1

Level 1 assumes that only the existing plants under construction will be commissioned by 2020. There will be no gas-based capacity addition thereafter, which could be due to issues related to fuel availability, gas infrastructure, lack of policy support etc. The total installed capacity will reach up to 572 MW by 2020 and will remain same. The plant load factor of gas based power plants will slightly improve from existing 60% to 65% by 2050.

Level 2

In Level 2, more capacities will be added in the system, however, at slower rate. Total installed capacity will reach up to 2.6 GW by 2050 and plant load factor will also improve to 70% in 2050. This could be because of slight improvement in gas availability and government interventions for utilization of existing stranded assets.

Level 3

Level 3 assumes a slightly higher growth in installation of gas based power plants, which could be due to increase in fuel availability, improved gas infrastructure and need for balancing power to manage renewable generation. Total installed capacity will reach 4.1 GW by 2050 and plant load factor will also improve and reach up to 75% in 2050. Further, conversion efficiency will improve to about 64% by 2050, which could be due to technological advancements.

Level 4

Level 4 is a more aggressive scenario wherein installation of gas based power plants will increase at much faster rate as compared to historic trend. This development could be fuel by improved gas availability, improved gas infrastructure and increased traded of electricity to neighboring areas. Total installed capacity will reach up to 5.7 GW by 2050 and plant load factor will also improve significantly reaching to 80% in 2050.