GAS POWER STATIONS

Gas based generation in India got impetus in the eighties when HVJ (Hajira-Vijaypur-Jagdishpur) gas pipeline was commissioned by Gas Authority of India Limited (GAIL), after discovery of gas in the west coast of India. This led to a number of Gas based CCGTs commissioned along the HVJ pipeline in the Western and Northern parts of India. Apart from the major HVJ gas pipeline, certain isolated gas fields in North-East India, Kaveri basin, Ravva basin etc. helped in development of some off grid gas based capacities in those areas. The present analysis deals with Grid connected Gas based plants as availability of gas can be augmented by Government intervention to improve gas availability in these plants. After the KG-D6 discovery of gas and commissioning of East-West pipeline by RGTIL (to transport the gas from Bay of Bengal fields to the west coast), KG-D6 gas got infused into the system in early 2009. Gas based capacity at the end of 10th Plan i.e. 2006-07 was about 13,600 MW and by the end of 11th Plan it reached to 18,714 MW (2012). The PLF has been kept at 60% for future generation.

Level 1

Level 1 assumes that the present gas availability to existing plants continues to decrease, and no capacity is added due to reduced domestic gas supply, and high prices of imported RLNG. Some existing gas plants will retire and with the addition of already approved new plants, power generation capacity will remain about 20.9 GW in 2046-47. The gas based generation would reach a level of 109.9 TWh in 2047 as against the current level (2012) of 97 TWh.

Level 2

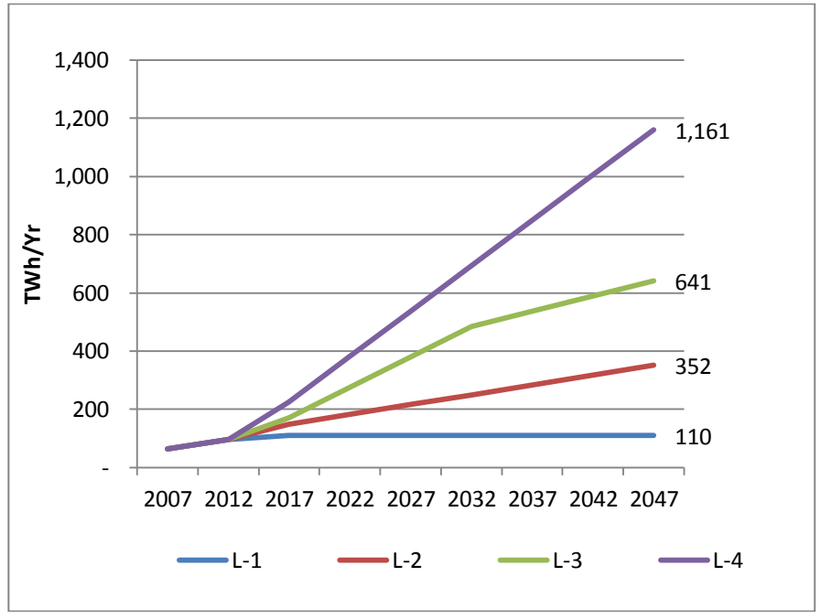
Level 2 assumes that during the 12th Plan, the projects under various stages of construction get connected to the main gas pipeline, and also off-grid capacity would supplement the generation capacity. This level assumes PLF 60% The gas based power generation capacity will remain reach to 67 GW in 2047 while generation would reach to a level of 352 TWh.

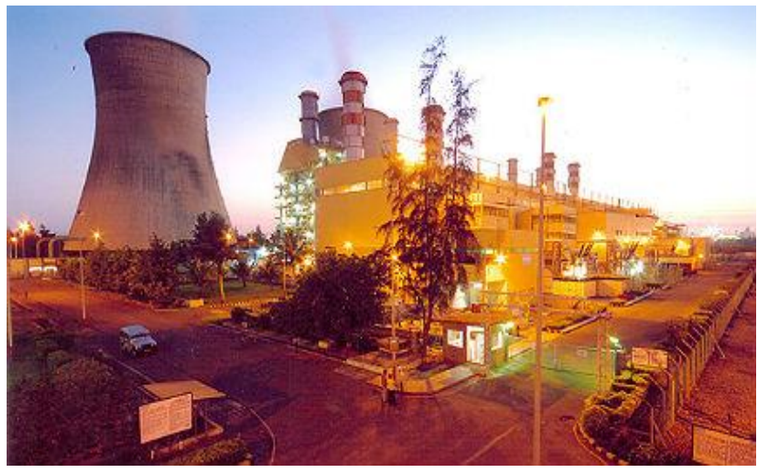
Level 3

Level 3 assumes an aggressive scenario based on Pipeline Vision 2030 of Petroleum & Natural Gas Regulatory Board Report. This level assumes free gas market in the country is nearly established. In this level the gas based generation capacity would reach to a level of 122 GW and the corresponding generation would be about 641 TWh in 2047.

Level 4

Level 4 assumes no constraint in gas availability and that imports are unlimited and there is a complete free gas market. This level assumes Forced Gas based scenarios of Integrated Energy Policy Report of Planning Commission, 2008. In this level, the gas based generation capacity would reach to a level of 221 GW and the corresponding generation would be about 1161 TWh in the year 2047.





Kawas Power Plant(Gujarat)-Image Source-NTPC

Note: Please see detailed documentation for references