

# Nuclear Power

The total nuclear power generation capacity in the country is 6.8 GW in 2017. This includes seven nuclear power stations which are located in the states of Maharashtra, Tamil Nadu, Rajasthan, Karnataka, Gujarat and Uttar Pradesh. These seven plants are maintained and operated by Nuclear Power Corporation of India Limited (NPCIL), which is government owned enterprise. In Karnataka, there are two units with a cumulative capacity of 880MW (Kaiga Atomic Power Station). NPCIL is planning two indigenous reactors of 700 MW each at Kaiga, which are expected to commission in coming years.

## Level 1

Level 1 assumes that 1,400 MW Kaiga units will commission in the period 2045-2050. This could be because of public sentiment regarding nuclear power and issues related to land acquisition and environment concerns.

## Level 2

Level 2 assumes that 1,400 MW Kaiga units will commission in the period 2035-2040. This could be because public sentiment regarding nuclear power continues and changes over a long period of time and total capacity rise to 2.3 GW. Total generation from nuclear power plants will be 16 TWh in 2050.

## Level 3

Level 3 assumes that 1,400 MW Kaiga units gets commission in the period 2030- 2035. Fast Breeder Reactor (FBR) is also proven and additional 0.5 GW FBR technology is commissioned by 2050. This could be because of improved government efforts which improves public sentiments on nuclear power early. Total generation from nuclear power stations will be 19 TWh in 2050 corresponding to 2.8 GW installed capacity.

## Level 4

In this scenario, it is assumed that challenges related to commissioning of nuclear plants are overcome. FBR is also proven and additional 1 GW (FBR) is commissioned by 2050. Total generation from nuclear power plants will reach 23 TWh in 2050 corresponding to 3.3 GW installed capacity.

