# Electrical Energy Storage

With increasing capacity of renewable energy based power generation, importance of grid connected energy storage systems are becoming important. Energy storage system would be required for balancing intermittent generation from renewable energy based power plants. This lever analyzes scenarios of exploitation of the available storage capacity. User can select different level of electrical energy storage addition, under different demand/supply conditions.

**Level 1**

Solar and wind energy based capacity increases to 1.5 GW in 2050. Cost of batteries remain as a major barrier and thus, installation of grid connected battery storage is slow. Total grid connected storage in the state will reach up to 20 MW by 2030, 75 MW by 2040 and then increases to 200 MW by 2050.

**Level 2**

Solar and wind energy based generation capacity increases to 5 GW by 2050. Electric vehicles will be used as grid connected storage option. Various storage technologies will be deployed to manage intermittency in generation from renewable energy sources. Though storage market will be developed significantly but at slower pace. Total grid connected storage in the state will reach up to 330 MW by 2030, 630 MW by 2040 and then increases to 1 GW by 2050.

**Level 3**

Solar and wind energy based generation capacity increases to 9.4 GW by 2050. Further, new technologies will emerge as low cost storage options. Hybrid plants will use new battery and compressed storage technologies. Total grid connected storage in the state will reach up to 495 MW by 2030, 920 MW by 2040 and then increases to 1.4 GW by 2050.

**Level 4**

Solar and wind energy based generation capacity increases to ~14 GW by 2050. New micro grids will be implemented not only in rural areas but also in urban centers to ensure continuous and sustainable electricity supply even during natural calamities. Total grid connected storage in the state will reach up to 630 MW by 2030, 1.1 GW by 2040 and then increases to 1.7 GW by 2050.