

Solar Water Heaters (SWH)

The climate in Andhra Pradesh is hot and humid during most of the days in a year, and hence, requirement for hot water is less as compared to other states in India. Solar water heater installations have increased in residential and commercial sectors mainly due to incentives like capital subsidies and soft loans in past. However, with increase in urbanization and changing lifestyle patterns, demand for hot water is expected to increase, which will result in higher electricity demand for water heating, especially in winter months. Solar water heater technology in this regard, can help in relieving peak loads of electricity demand for hot water. This lever provide four pathways for increasing installations of solar water heater technology in the state.

Level 1

Level 1 assumes that although there is a gradual improvement in SWH installations in the residential sector there is very little growth in the industrial and commercial sectors. The resulting collector area increases from 0.11 sq. km. to around 1 sq. km. in 2050. The total capacity increases by 4 times reaching to 0.4 GW in 2050 from 0.1 GW in 2015.

Level 2

Level 2 assumes substantial increase in installation of solar water heaters in residential and commercial sectors, owing to strict mandates from state government. The total collector space reaches 3.7 sq. km. in 2050. Total Solar Water Heaters capacity in 2047 reaches 1.8 GW.

Level 3

Level 3 assumes that hot water demand will increase in the state due to urbanization and changing lifestyle. Government mandates for commercial and residential consumers will lead to exponential growth in solar water heater capacities. The total collector space grows to ~6.7 sq. km by 2050. Total Solar Water Heaters capacity in reaches 3.3 GW in 2050.

Level 4

Level 4 is a heroic scenario, which assumes that there will be no technical or economical constraints for solar water heater deployment. Government support and mandates leads to increase in collector space from 0.11 sq. km. in 2015 to as high as 12 sq. km. in 2050. The total Solar Water Heaters capacity in 2050 reaches 6.2 GW.

