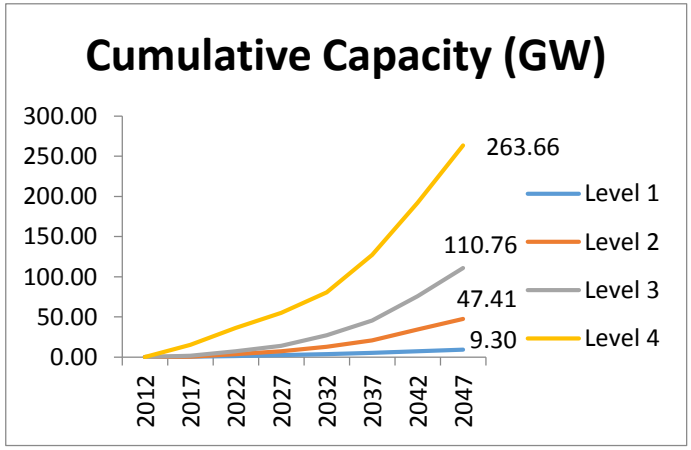
DISTRIBUTED SOLAR PV (SPV)

With an average of 300 sunny days and high solar insolation, distributed SPV has the ability to play an important role in the coming years. Distributed SPV systems can reduce the load on utilities by reducing the electricity peaks, reducing transmission and distribution losses and improving productivity. Distributed SPV (particularly the rooftop segment) is expected to grow significantly in the coming years due to increase in economic viability for certain consumer segments (commercial, industrial and high-use residential) in particular geographical areas in India. While many states have already put in place favourable net metering policies, some state ERC regulations support rooftop projects through the feed in tariff route. By some estimates, India could install 3 - 5 GW of distributed solar in the next three - five years. Increased clarity on technical inter-connection, safety and metering standards would pave the way for faster deployment.



LEVEL 1

Level 1 assumes that there is a very little improvement in distributed PV installations in the residential sector and negligible growth in the industrial and commercial sectors. The penetration rate is as low as 0.6% HHs in 2047 resulting in total capacity of 9.3 GW. Lack of clarity on technical and safety standards coupled with weak policy regulatory framework hampers growth. The electricity generated in 2047 would be 15 TWh.

LEVEL 2

Level 2 assumes that a significant push for PV RFTP under the JNNSM will increase the penetration from 0.01 % in 2012 to 0.6% by 2022, with residential sector remaining the major contributor with a penetration rate of 3% in HHs by 2047. The total capacity reaches 47.4 GW by 2047 and generates 79 TWh of electricity.

LEVEL 3

Level 3 assumes that with increase in urbanization the peak demand for electricity would also grow, leading to an increase in penetration levels to 7% by 2047. This would also force industrial, commercial and institutions spaces to adopt distributed PV's lead to a quick increase in capacities. The total capacity will increase to 110.7 GW by 2047 and electricity generated would be 184.5 TWh.

Level 4 assumes that there are favourable policies for supporting growth in distributed SPV and there is ample rooftop space available in coordination with Solar Water Heaters. The penetration levels are as high as 17% leading to rapid growth in the residential as well as commercial sectors. Increased penetration levels leads to a total of 263.6 GW of capacity and ~ 439 TWh of electricity generation. Smart grids, advanced inverters, DR, favourable storage costs aid this process. India also meets its 40GW rooftop target by 2022.