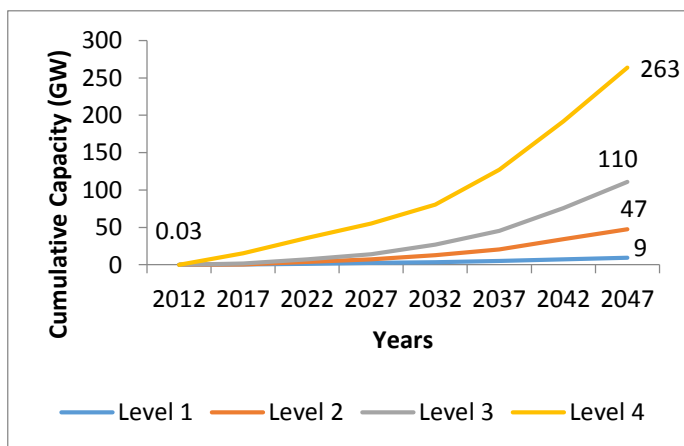


DISTRIBUTED SOLAR PHOTOVOLTAIC POWER

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 electricity regulatory commissions support rooftop projects through the feed in tariff route. 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% of households in 2047 resulting in total capacity of 9 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 Rooftop under the Jawaharlal Nehru National Solar Mission will increase the penetration from 0.01 % in 2012 to 0.6% of households by 2022, with the residential sector remaining the major contributor with a penetration rate of 3% of households by 2047. The total capacity reaches 47 GW by 2047 which would generate 79 TWh of electricity.

LEVEL 4

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% of households leading to rapid growth in the residential as well as commercial sectors. Increased penetration levels leads to a total of 263 GW of capacity and ~ 439 TWh of electricity generation. Smart grids, advanced inverters and favourable storage costs aid this process. India also meets its 40GW rooftop target by 2022.

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% of households by 2047. This would also force industrial, commercial and institutional spaces to adopt distributed PV's lead to a quick increase in capacities. The total capacity will increase to 110 GW by 2047 and electricity generated would be 184.5 TWh.