

8. Small scale wind

Small scale wind turbines have been traditionally used around the world to pump irrigation water. Their use for micro-generation of electricity is also growing. These very small wind turbines can be mounted on buildings, making them useful in urban and rural areas. They are significantly less efficient than large turbines.

The last decade

A large number of NGOs have explored this technology for off-grid electricity supply as well as irrigation pumping. It can be especially useful for supplementing solar panels in village level pico and nano-grids. In 2000, there were no national grid connected micro wind turbines.

Assumptions of model

They are assumed to be operating at peak capacity 27% of the time. A typical turbine size is smaller than 2 kW, down to about 600W. If the peak size of 2kW is taken, 3.5 million micro turbines will produce a peak supply of 0.7 GW.

Levels

Level 1

Least effort. No micro turbines are added to the national grid.

Level 2

Current policy. Some micro-turbines start to be installed by 2020, rising to 0.2GW by 2030. This is equivalent to 1 million of the largest micro-turbines.

Level 3

Some micro-turbines start to be installed by 2015, rising to 0.3GW by 2030. This is equivalent to 1.5 million of the largest micro-turbines.

Level 4

One million micro turbines are installed by 2015, rising to 3.5 million by 2030. Bangladesh can generate a peak of 0.7 GW from these.

Interaction with other levers

Roof top turbines might compete for space with solar panels. The flickering shadows they cast can reduce solar panel efficiency.

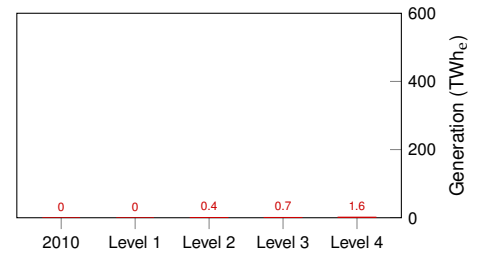


Figure 8.1: Projected Capacity in 2050

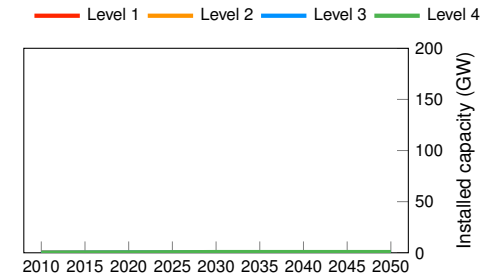


Figure 8.2: Development of capacity by scenario



Figure 8.3: An example micro-wind turbine