

## *Solar panels for electricity*

Ireland currently has no support mechanism for the generation of electricity via 'solar photovoltaic' or PV panels. However, the renewable energy requirement in the Building Regulations Part L 2011 is set to drive deployment of PV installations in new housing. The 'Near Zero Energy Buildings' mandatory requirement, for both new buildings and major renovations by 2020 in EU member states, is also an important driver for both solar PV and thermal systems development in Ireland.

### *Trajectory 1*

Trajectory 1 assumes no use of solar PV up to 2050.

### *Trajectory 2*

Trajectory 2 assumes that the installed capacity of solar PV reaches 500 MW in 2030 (producing 400 GWh per annum) and 2,000 MW (2 GW) by 2050 (producing 1.7 TWh/y). At this trajectory there is 4 m<sup>2</sup> of solar PV panels per household in Ireland by 2050.



### *Trajectory 3*

Trajectory 3 assumes that Irish solar PV capacity reaches 1 GW in 2030 (producing 850 GWh annually) and 3.5 GW by 2050 (producing 3 TWh/y). This is the equivalent of 3 m<sup>2</sup> of panel covered roof area for every person by 2050 or 7 m<sup>2</sup> per household.

### *Trajectory 4*

Trajectory 4 assumes that solar PV capacity reaches 2 GW in 2030 (producing 1.7 TWh/y) and 5 GW by 2050 (producing 4 TWh/y). The area of panels required is about 10 m<sup>2</sup> per household, roughly the same as the area of all South-facing roofs of domestic homes.

Alternatively, Trajectory 4 can be visualized as solar farms, where the land area required to deliver 4 TWh/y if 20% efficient by 2050 is approximately 24 km<sup>2</sup>.

Figure 25: Solar PV farm

Figure 26: Roof mounted solar PV. The average peak power delivered by solar PV is assumed to be 0.5 kW, equivalent to 20 W/m<sup>2</sup>.

Figure 27: Electricity produced under 4 trajectories (TWh/yr)

