Utility scale solar farms

Utility scale solar farms are typically ground-mounted solar arrays at least 1 MW in size, although some are considerably larger. The largest plant in the UK in 2016 had a peak capacity of 72 MW. All electricity generated by commercial solar plants is sold to the national electricity grid. With the rapidly declining fall in costs of utility scale solar arrays and the anticipation of future Government support for solar in Ireland[51] [52], applications to the grid for utility scale solar farms have increased to beyond 4,000 MW in the last two years; over 1,000 MW more than the total installed onshore wind capacity in Ireland in 2016.[53]

Trajectory 1

Trajectory 1 assumes no solar farms in Ireland up to 2050.

Trajectory 2

Trajectory 2 assumes that the installed capacity of solar farms reaches 800 MW by 2020, 1,300 MW by 2030, and 3,200 MW by 2050. 3,200 MW capacity has the potential to contribute approximately 3 TWh toward the national grid per year. This trajectory would imply 160 new 5 MW solar farms by 2020 and 630 solar farms around the country by 2050.

Trajectory 3

Trajectory 3 assumes that Ireland has over 1000*5 MW solar farms by 2050 with an aggregate installed capacity of 5.6 GW, which provides 5.4 TWh per year.

Trajectory 4

Trajectory 4 assumes that solar farm capacity in Ireland reaches 1.5 GW by 2020, 4 GW by 2030, and 9 GW by 2050. An installed capacity of 9 GW implies 1,800*5 MW solar farms. The land area required for these new solar plants would range between 80 km^2 and 120 km^2 depending on the technology used and conversion efficiencies.

Figure 26. Electricity generated by utility scale solar power, (TWh/yr).