REPORT

Scale of Solar

JUNE 2023

ISEA
Irish Solar Energy Association

Overview

	CAPACITY	NUMBER
Utility-scale (>5MW)	349 MW	7
Utility-scale (1MW-5MW)	22 MW	5
200kVA-1MW	0.3 MW	1
Small Scale Generation	0.54 MW	4

	CAPACITY	NUMBER
Minigen	5 MW	141
Microgen	208 MW	59,500
Auto production ground mount	95 MW	230
Total	680 MW*	59,888

Solar energy can generate

599,131 MWh

of electricity each year

Equivalent to annual electricity demand of 144,650 homes

Solar energy can save

202,127 CARBON TONNES

each year

Equivalent to 1.4 billion kilometres of driving

Introduction

The volume of solar energy in Ireland is rapidly growing and subsequent increases in the amount of clean energy generated by solar power will have a significant beneficial impact on both society and the environment.

A target of 8GW of solar has been set as part of the Climate Action Plan 2023. This target signals the vital contribution solar energy will make to the decarbonisation of Ireland's electricity system.

The Irish Solar Energy Association presents the below data on the volumes of solar connected to the Irish network, showing the value of solar energy to Ireland and the variety of settings in which it can be used.

Utility-scale (>5MW)

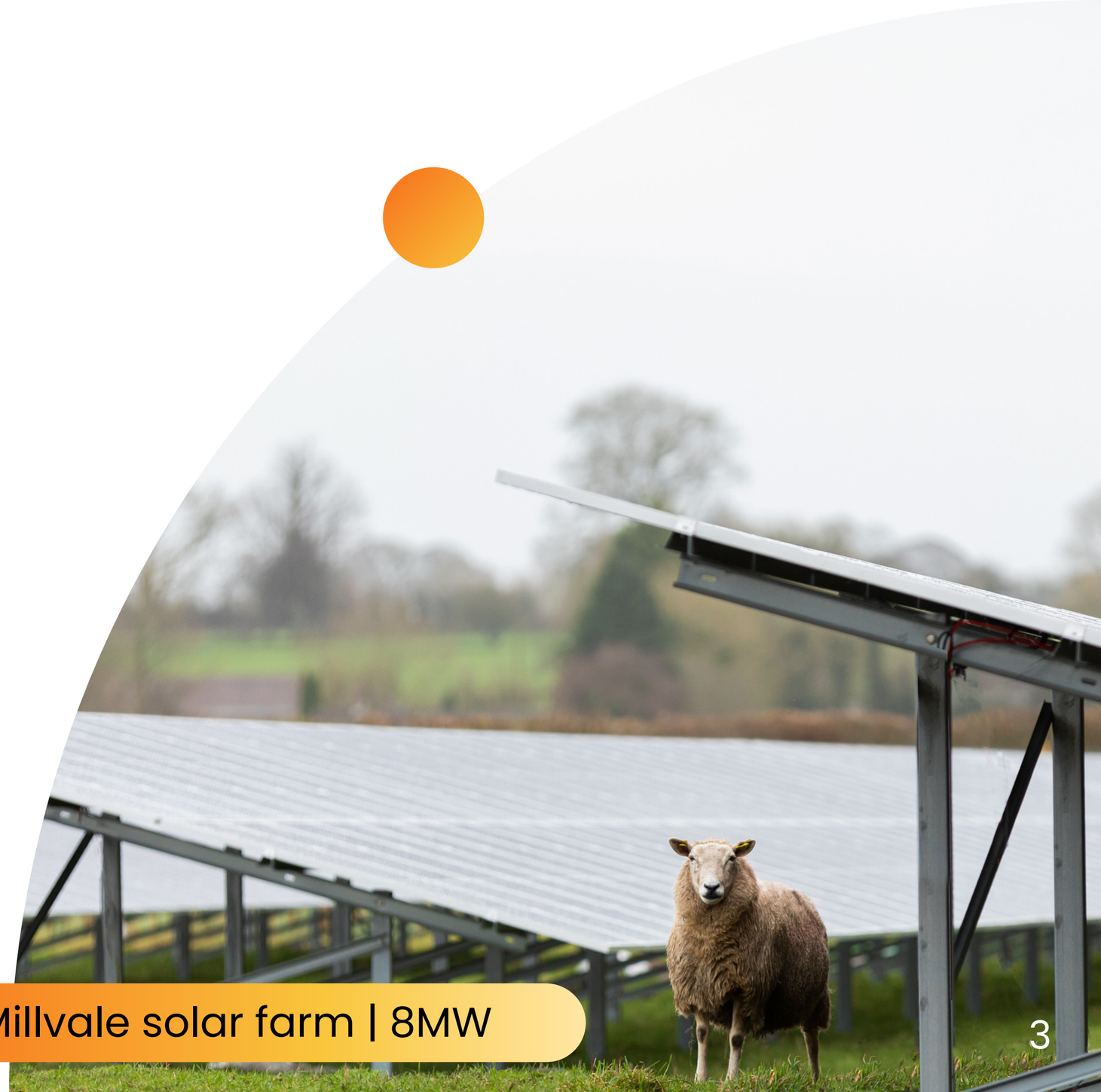
Utility-scale solar developments are vital for increasing the amount of solar power in the Irish energy system. They will make up most of the 2030 solar target.

The first project supported under the Renewable Electricity Support Scheme (RESS) connected to the electricity network in 2022.

Ireland now has

349MW

of utility-scale solar (>5MW) connected to the grid



Millvale solar farm | 8MW

Utility-scale (1MW-5MW)

Projects of capacities between 1MW and 5MW can vary in type, such as large commercial rooftop installations or smaller solar farms.

Ireland now has

22MW

of utility-scale solar (1MW-5MW) connected to the grid

Dawn Pork & Bacon | 1MW

Lurrig solar farm | 4MW

SuperValu | 202kWp

HSE Phoenix Hall | 100kWp

Commercial (<1MW)

Most projects under 1MW capacity are commercial installations.

By installing solar PV systems on their building rooftops, businesses can efficiently offset their carbon emissions and take part in the energy transition.

Ireland now has

0.84MW

of commercial (<1MW) projects connected to the grid

Mini-generation

Minigen projects typically have a capacity between 17kVA and 50kVA.

These projects are usually installed by businesses, farms, and other commercial operations for consumption of their self-generated electricity.

Ireland now has

5MW

of minigen projects connected to the grid

Courtown Leisure Centre | 56kWp

Micro-generation

There has never been a better time to install solar PV on residential rooftops. Customers no longer pay VAT on the supply and installation of panels, nor do they need planning permission. Plus, with the grants available from the SEAI and the ability to sell excess electricity back to the grid, solar is at its most cost-effective.

Almost 60,000 homes in Ireland now have solar panels on their rooftops and that number is growing each week.

Ireland now has

208MW

of microgen projects connected to the grid

Autoproduction ground-mount

Autoproduction ground-mount solar is a type of onsite project.

These projects do not export electricity to the national grid, but instead generate electricity for self-consumption by a household or business. These solar panels are mounted on land rather than rooftops.

Ireland now has

95MW

of operational ground-mount projects

Potential electricity generation

The potential electricity generation from Ireland's 680MW of solar capacity shows that we are truly at the beginning of a solar revolution.

Solar energy can generate

599,131 MWh

of clean, renewable electricity per year

Equivalent to

annual electricity demand of 144,650 homes

Emissions savings

The potential 599,131MWh of electricity generated by Ireland's 680MW of solar capacity is a vital part of the fight against climate change.

Solar energy can save

202,127 CARBON TONNES

each year

Equivalent to

carbon absorbed by c. 9,480 Irish ash trees

1.4 billion kilometres of driving

each year

References

1. ESB Networks, data on volume of solar energy operational in Ireland. Data correct as of 20/06/2023.
*Please note the value of 680MW used throughout this report was rounded up from 679.84MW.

2. Dr. Paul Deane, calculation of total electricity generation and emissions savings.

3. Activ8 Solar Energies, photographs included on pages 4-8, cover page.

4. Neoen Renewables Ireland, photographs included on pages 2, 3.

5. Commission for Regulation of Utilities (2017), 'Annual Energy Consumption' infographic. Available here.

6. Thomas, P.A. (2016), Biological Flora of the British Isles: Fraxinus excelsior. J Ecol, 104: 1158-1209. Available here. Source of assumption that average diameter and height of ash tree is 2 metres and 15 metres, respectively.

7. OpenCO2.net and Standing Tree Cubic Volume Calculator, calculation of equivalence between total carbon tonnes avoided and kilometers driven; calculation of equivalence between total carbon tonnes avoided and cubic metres of tree that can absorb said carbon.