

Domestic Rooftop PV

Introduction

Solar PV is an extremely scalable renewable generation technology which can be deployed from kW's on a domestic roof to multi-MW solar farms. This fact sheet explores the benefits of rooftop PV for domestic energy users.

Domestic Rooftop Solar

Solar PV systems provide homeowners with an opportunity to generate energy for their personal use. Unlike solar thermal systems, solar PV systems produce electricity that can be used to power your home and heat water.

A domestic rooftop PV system consists of a mounting system and multiple PV modules (each 1.6m² and rated around 250-280W), inverters to convert the PV electricity to AC electricity and connection equipment to integrate the system into the existing building electrical system. Typical domestic rooftop PV systems range from 0.83 kW to 2.2 kW or between 3 to 8 panels. Energy will be produced during daylight hours, however, there are storage systems available so that electricity generated can be used when it is needed.

Domestic solar PV systems provide home owners with a guaranteed supply of electricity. While the initial costs are high, you are able to claim the VAT from the Government's Home Renovation Incentive, and also the payback is in 10 years, if electricity generated by the system is used daily. The systems also protect you from fluctuations in electricity prices.



Source: Solar Electric

Design and Development Considerations:

An ideal domestic rooftop PV system would have the following characteristics.

- Large, good condition, south-facing roof area.
- Minimal shading from trees, flues, adjacent buildings.

- Locations in South and East of Ireland offer best performance.

Any solar PV system with over 7 panels requires planning permission from your local council. Structural and conditional surveys should also be completed to ensure the building is adequate to support the additional loading from the PV system.

Solar PV systems are extremely robust and reliable. However, it is critical that a competent installer is appointed and, although rooftop PV systems are reliable, consideration needs to be given to the long term monitoring and maintenance of the system.

IMAGE OF BATTERY STORAGE IN A HOUSE



Source: BNRG Distribution

Benefits of Domestic Rooftop PV:

There are multiple benefits to a rooftop Solar PV system. Some of the main benefits include:

- Utilising vacant space on your rooftop with minimal visual impact.
- Renewable generation directly next to the load (no additional grid infrastructure required)
- Robust system with minimal maintenance.
- Long term warranty (25 Years)
- Energy cost savings and certainty.
- Tariffs (when available) directly benefit homeowners and their communities.
- Improve Building Energy Rating (BER).
- Contribute to Ireland's Renewable Energy Targets.

It is currently an excellent time to explore the potential of your home's rooftop for solar PV. Contact some of ISEA's membership for more details.