

Commercial 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 industrial and commercial (I&C) energy users.

Commercial and Industrial Rooftop Solar

Where a business has available roof space and intensive electrical energy usage a rooftop solar PV system should be considered. The rooftop solar PV system can be installed quickly on vacant roof space, and deliver generated energy directly into the existing building electrical system.

A 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 I&C rooftop PV systems range from 10kW to 500kW. Most energy intensive businesses could expect 80-100% of the Solar PV energy to be consumed on site.

The amount of retail energy offset by the PV system, and any potential tariff, make up the savings. Third party 'funded' systems are also available which allow other parties to pay the installation costs, and the PV energy is paid for through a power purchase agreement.



Source: Solar Electric Ireland

Design and Development Considerations:

An ideal I&C rooftop PV system would have the following characteristics, although solutions are possible for almost any I&C rooftop.

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

- High energy usage – indicated high self consumption.
- Locations in South and East of Ireland offer best performance.

Any solar PV system over 50m² (around 8kW) requires planning permission from your local council. Any PV system over 11kW also requires a grid application to ESB Networks. 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.



Source: Kingspan ESB

Benefits of I&C 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
- Reduction in carbon intensity of business
- Energy cost savings and certainty.
- Tariffs (when available) directly benefit business and competitiveness.
- Improve Building Energy Rating (BER).
- Contribute to Ireland's Renewable Energy Targets.
- Marketing and corporate social responsibility.

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