

**PASSIVE  
HOUSE  
SYSTEMS**

# Solar Photovoltaic Systems

## The Next Generation of Energy

- Silently generate your own electricity
- Reduce your environmental footprint
- No moving parts, no maintenance
- Easy installation
- Extra panels can be easily added
- Future proof from rising energy costs
- Cost effective Part L compliance
- Improve your BER energy rating

**Generate your own  
free electricity**



**NSAI**  
Agrément

Passive House Systems Solar  
Photovoltaic System

CERT No. 18/0395

[www.passivehousesystems.ie](http://www.passivehousesystems.ie)

Our solar photovoltaic range of products offer our customers an environmentally friendly means of producing your own electricity. This provides long term energy savings, reduces carbon emissions and makes us less dependent on imported energy. See your property's energy rating climb with the introduction of solar photovoltaic.

---

# CONTENTS

Why Solar PV .....	<b>3</b>
Solar PV System .....	<b>4</b>
Solar PV Panels .....	<b>4</b>
Solar Inverters .....	<b>5</b>
PV Mounting System .....	<b>6</b>
Battery Storage .....	<b>7</b>
Power Diverter .....	<b>7</b>
PV Optimisers .....	<b>7</b>
Solar PV Kits .....	<b>8</b>
CPD Training .....	<b>8</b>



## **Expert Solar PV Supplier**

Passive house systems are specialist suppliers of solar PV products. We are the first company in Ireland to get NSAI Agrément Certification for solar PV systems. With years of experience in the industry and with our own dedicated solar engineering department, we understand how to design for cost effectiveness, building compliance and quality assurance, giving our customers 100% peace of mind.



## Why Solar PV

Solar PV offers the most convenient and simple solution to turn your building into a renewable energy generator. As the efficiency of the solar PV technology improves and the price continues to fall investing in a solar PV system has become an excellent initiative, offering significant savings into the future and providing a protection from rising energy costs.

Our systems are designed for both domestic and commercial applications.

Solar PV technology is a very established means of generating renewable energy worldwide. We only offer the highest quality solar PV components and accessories, direct from reputable manufacturers.

## Solar Photovoltaic Installations



**Private House**



**Social Housing**



**Developments**



**Agriculture**



**Retail**

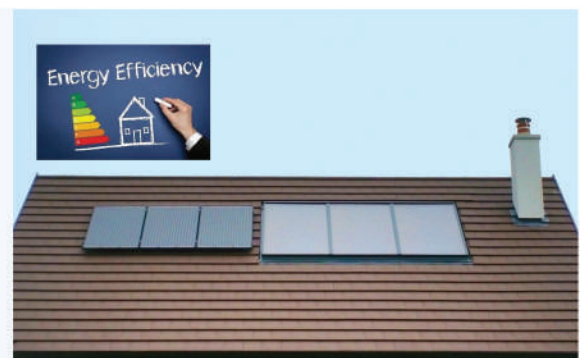


**Commercial**

## Part L Compliance

All new buildings must meet a minimum provision of installed renewable energies. Solar PV is ideal for this.

- 4kWh/m<sup>2</sup>/annum of renewable electrical energy.
- 10kWh/m<sup>2</sup>/annum renewable heat contributing to energy use for domestic hot water heating.
- A combination of these that would have the equivalent effect.



**Solar PV and Solar Thermal Panels**

## Solar PV System

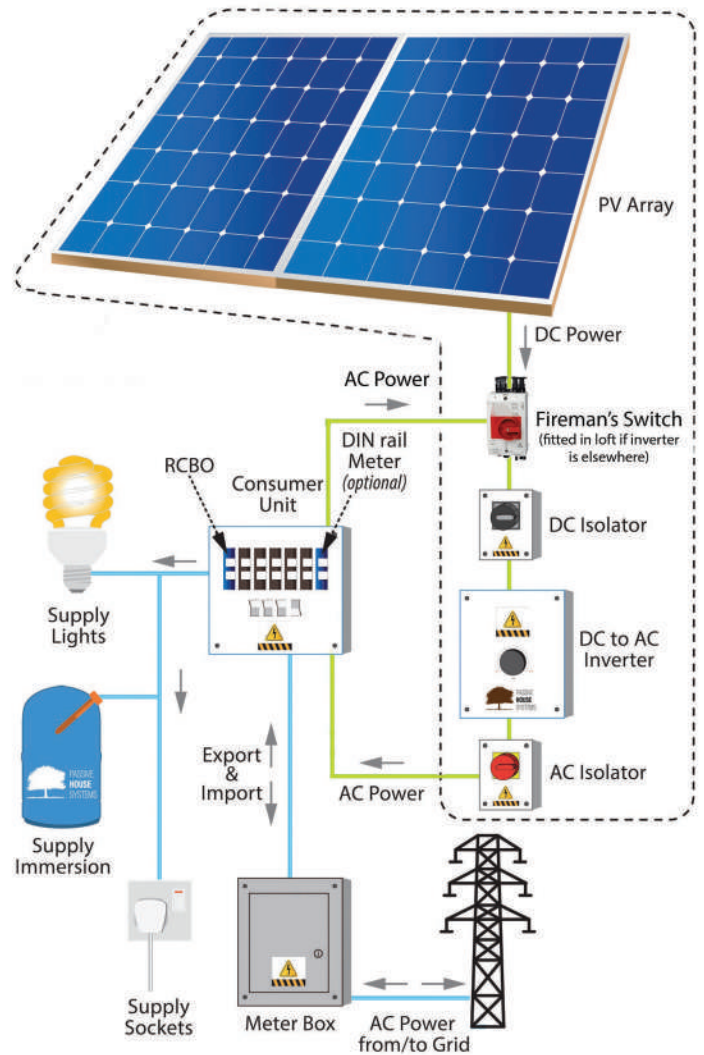
Solar Photovoltaic systems offer the ideal renewable energy generations system.

The system has no moving parts, little to no maintenance and a limited number of easy to install components.

Solar PV also has a long working life providing free and clean electricity from the sun for over 25 years.



For a commercial installations please contact us to arrange a site survey so Passive House Systems can engineer the PV system to your requirements.



Solar PV Schematic (String Inverter)



Outstanding performance in weak-light conditions



Excellent temperature coefficient giving higher yields in the long term



10-year product warranty  
25-year performance warranty



Anti-PID



IP68 connectors enhance the reliability of the PV system



Certified to withstand increased loads of up to 5400Pa



Positive current sorting



Salt mist corrosion resistance



Fire test resistance



Ammonia corrosion resistance

## Solar PV Panels\*

Passive House systems offer solar PV panels that are manufactured to the highest standards.

All our PV panels are tested to the highest quality in NSAI & TÜV audited factories and come with a 25-year production warranty as standard.

### Certifications:

- EN 61215,
- CE Certified (EN 61730),
- MCS 010-1.5, MCS 005 - 2.3,
- EN ISO 9001 & 14001.

\* See NSAI Certificate 18/0395 for a full range of panel types and properties.





## String Inverters



The Inverter is required to convert the DC current generated by the PV panels into an AC electric current, this can be used by the appliances in your home or exported into the grid.

Passive House Systems offer a range of inverters to suit your needs. All our inverters come with a five year warranty which can be extended to ten years.

The range has exceptionally low input voltage making them suitable for very small systems of just two modules. All products offered are certified to EN50438 for the Irish market.

We offer inverters in single phase (for domestic dwellings) and three phase (for industrial applications).

All our inverters are certified to EN50438, to comply with Irish grid requirements.

### Certifications:

- Grid regulation EN50438 Irish Deviations,
- CE Certified to EN62109-2:2011 & EN62109-1:2010,
- Safety IEC62109-1 & -2, AS3100,
- EMC: EN61000 (6-1, 6-2, 6-3, 6-4, 3-2, 3-3),
- EN ISO 9001 & 14001.

- Over 95% max efficiency,
- 50V – 400V operating voltage,
- Protection Class IP65 rating,
- Precise MPPT system,
- Optional Wi-Fi and App monitoring,
- 5 year warranty extendable to 10 years.



## Micro-inverters

Our micro-inverters mark a breakthrough in solar technology, making PV arrays more powerful, smart, bankable, cost effective and safer.

Conventional string inverters operate as efficiently as the lowest-performing module, meaning reduced output from a shadow or leaf on one module cuts output across all modules in the array. Passive House Systems micro-inverters are smarter.

Our technology individually monitors and maximizes power generation for each module in the array, boosting system efficiency by up to 20 percent. One unit handles two PV modules, lowering installation and system costs.

All micro-inverters are engineered to comply with local grid requirements, ensuring safety of system installers and emergency responders.



## PV Mounting System

Schletter PV mounting systems are a high quality range of fixing products, manufactured in Germany and offer a wide range of components and systems to facilitate the fastening of almost any module configuration, to almost any roof.

Usually, two horizontal mounting rails carry one row of PV modules mounted vertically. These rails are fastened to the roof structure using roof hooks or other fasteners. The modules are fastened to the rails using middle and end clamps. Accessories are available for most applications. An **MCS012 certified**, Schletter Rapid2+ mounting system provides quick and simple installation.



Flat Roof Mounting



Slate Bracket + Flashing



Trapezoidal Clamps



Standing Seam Clamps



Rapid 2+ tile hook



Flat roof/  
ground mount



Rapid 2+  
slate flash kit



Hanger bolts

## Roof and Felt Grommets

The multi-cable Solar Flashing EPDM **Roof Grommet** is a speciality flashing for managing solar PV cables on tile or slate roofs. It allows up to 10 cables to be taken effectively through any roof. It also helps to avoid risk of damage, by isolating them and provides a complete weatherproof seal.

**Felt Grommets** ensure there is no compromising of your roof felt integrity, by routing your cabling through. Fully adhesive, with a flexible EPDM rubber to reliably facilitate cables penetrating the roof felt.



## Battery Storage

Connecting photovoltaic systems to a battery system can enhance consumption of your self-generated electricity.

We can design and supply a hybrid inverter and battery storage combined system which allows greater utilisation of your solar installation.

We offer a range of battery types and sizes to suit different budget and system sizing.



**Free Motoring  
from the Sun**



## Power Diverter

The solar diverter uses the surplus photovoltaic energy generated at your home to heat the water in your standard cylinder and save you money.

You will benefit from:

- Maximising the use of the free solar energy generated at your property,
- Cutting the cost of heating your water,
- Reduced use of your boiler.

The solar diverter uses ONLY energy which would be otherwise exported, so you take the opportunity to use as much of the free solar energy as possible.



## PV Optimisers

Solar PV optimisers increase energy output from PV systems by constantly tracking the maximum power point (MPPT) of each module individually.

The MPPT per module allows for flexible installation design with multiple orientations, tilts and module types in the same string. This allows the installer even greater flexibility with longer strings and strings of different lengths in order to design optimal PV systems.







## Solar PV Kits

Passive House Systems offer complete PV Kits for all your installations.

Contact our Sales Engineers today for a bespoke system design and competitive quote.



## CPD Training



We have been doing class and site-based training since 2010, we have trained many architects, building consultants and various tradesmen on several aspects of Low Energy Housing.

Contact us today regarding any of our training programs.

- Registered Engineers Ireland Solar PV CPD Training (60min),
- On-Site Solar PV products installation training.



### NZEB Products Ltd T/A Passive House Systems

**Cork Office:**  
5B4 Link Road, Business Park,  
P31 PR52, Ballincollig, Co. Cork

**Kildare Office:**  
Unit 48-02, Kildare Business Park, Melitta Road,  
R51 YX84, Kildare Town, Co. Kildare

Tel. 021 487 5297  
info@passivehousesystems.ie  
www.passivehousesystems.ie

*All data and recommendations contained in this brochure are based on supplier results and practical experience, and are aimed at helping customers select the appropriate products for a given application. This information is given without liability. We reserve the right to change the technical specification without prior notice.*