



# SCOPING SOLAR PV WITHOUT NET-METERING

Net metering has become an important mechanism for the solar industry. However, it is not indispensable and there are other options to develop solar PV at the consumer's side.

**What is net-metering and what are the alternatives to net-metering ?**

## What is net-metering

Net-metering is a billing mechanism used for customers who have PV systems installed on their homes. A credit is given to them for every kWh injected back to the grid. Net metering is a way of using the grid to absorb extra generation at the end user and offset it when the end user has the need for it.

## How does net-metering work ?

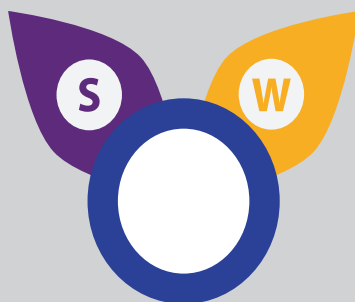
When the production from the solar PV of a client is greater than the need/demand, the excess is sent back to the grid. When the PV production is less than the electrical needs, the grid supplies the required electricity. At the end of a time period, the total bill of the customer will show the extra production and the consumption.

It is worth mentioning that net-metering does not necessarily mean that there is a payment for all the extra electricity produced and not consumed and may be limited to offset only the total of consumption of the user during the defined time period.

## Strengths and weaknesses of net-metering

### Strength

- Utility bill savings
- Customers can save money over the lifetime of the PV system
- Shorter payback periods
- Net metering will give customers shorter payback periods.
- Reduces pressure on grid
- Residential PV systems help reduce the amount of stress on the grid distribution system
- Battery storage system
- The net-metering avoids the need to install a battery storage system



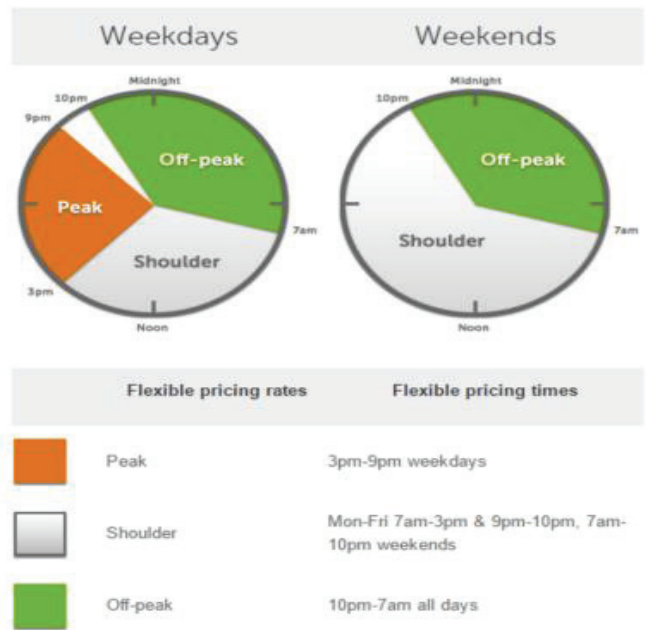
### Weakness

- Limited to consumption
- The extra is not all offset, but is limited by the consumption.
- Free grid storage
- The fact that the grid is used to store energy may be seen as a free service
- Different costs of electricity
- The cost of generation while PV is producing in excess may be substantially below the cost of the same electricity during the peak. Such difference may be seen as a sole benefit for the user.

# Alternatives to net-metering

## 01 Time of use

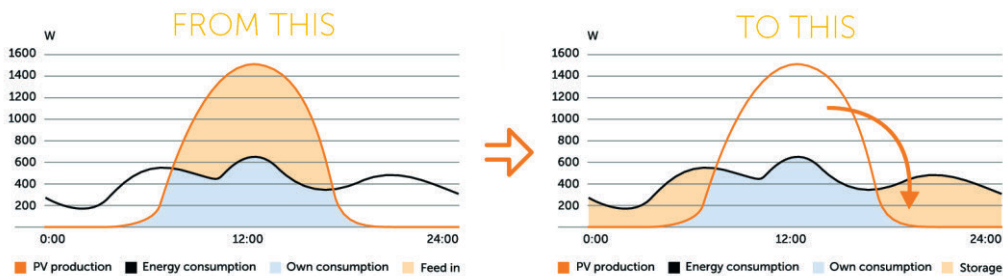
Time of use can be seen as an alternative billing mechanism to net metering. While net metering does not differentiate between time of day, the time of use rate depends on a schedule. That way the offset of electricity surplus to the grid takes into consideration the cost of generation per time of usage, reducing the potential loss for the utility. It would also allow the user to benefit from any gains associated with the opposite, when the consumption would happen on a lower tariff than generation.



## 02 Self-consumption

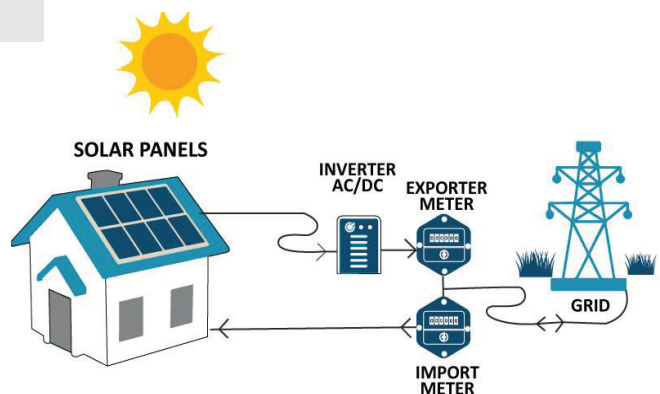
Self-consumption is a model that has showed strength in many countries. Customers may use batteries and storage technologies to store

excess production for peak hours. The model requires investing in storage technologies to avoid the surplus generation being lost.



## 03 Feed-in tariffs below market price

Feed-in tariffs or fixed tariffs paid per kWh of RE generation during a fixed period have been used worldwide to foster renewable energies in general. FIT were also very important to provide incentives for end consumers to adopt RE. FIT that can be defined below the market prices, either fixed or on a time of use basis, support a fairer system that still rewards extra generation, but takes into consideration the real costs.



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