Guideline for Step-by-step to become a prosumerist

EFFECT4buildings Toolbox:

Prosumerism; Annex 2

The project “Effective Financing Tools for implementing Energy Efficiency in Buildings” (EFFECT4buildings) develops in collaboration with public building managers a comprehensive decision-making support toolbox with a set of financial instruments: **Financial calculation tools**; **Bundling**; **Funding**; **Convincing decision makers**; **Energy Performance Contract**; **Multi Service Contract**; **Green Lease Contract**; **Prosumerism**. The tools and instruments chosen by the project has the biggest potential to help building managers to overcome financial barriers, based on nearly 40 interviews with the target group. The project improves these tools through different real cases.

To make sure building managers invest in the best available solutions, more knowledge on different possibilities is needed as well as confirmation from colleagues that the solutions performs well. EFFECT4buildings mapped **technological solutions** for energy efficiency in buildings with the aim to share knowledge and experiences of energy efficiency solutions among building managers in the Baltic Sea Region.

This document gives a Step by step how to implement prosumerism and information from Latvian DNO.

Partners

EFFECT4buildings project is implemented with the support from the EU funding Programme Interreg Baltic Sea Region (European Regional Development Fund) and Norwegian national funding. The aim of the project is to improve the capacity of public building managers in the Baltic Sea Region by providing them a comprehensive decision-making support toolbox with a set of financial instruments to unlock the investments and lower the risks of implementing energy efficiency measures in buildings owned by public stakeholders. More information: http://www.effect4buildings.se/

Contents

Step by step how to implement prosumerism

Step 1 - Planning of the installation

In order to determine overall feasibility of becoming a prosumer the first step towards it is to assess your own electricity consumption needs as well as the optimal size and power of the planned PV site.

- assess the potential of PV in the desired site using variety of available tools, consult industry professionals if necessary;
- determine the consumption profile and the power of the PV installation to cover the energy demand, consider installing a storage unit to save energy for later usage;
- assess rooftop or wall orientation (for wall integrated systems) and estimate sunlight availability;
- determine appropriate system size and components to achieve the necessary production of electricity, use available simulation or calculation tools in order to make precise estimations;
- calculate necessary investments and payback time, assess the overall profitability of the installation;
- prepare and certify the project of the installation by qualified technician or institution.

Step 2 - Harmonizing the PV installation project with local authorities and DNO

Installing a PV system and establishing a connection to the grid must always be harmonised with local authorities as well as DNOs. Key aspects you need to take into account when installing a PV system are:

- check if in your country prior to operating and generating energy you must notify authorities and/or request permission for construction and placement of PV installations, in some countries it is not needed for smaller rooftop installations such as one's home, however it might be needed for larger scale projects;
- find out if there are any additional fees and or taxes you need to pay for the installation of PV system;
- check if there are any additional technical rules and limitations you need to comply with first and/or certification tests you need to pass when installing the PV system and connecting it to the grid, adjust your project accordingly if needed;
- also find out, who determines the contractor, which will be responsible for the installation and connecting the PV system, in some countries only qualified and certified contractors are permitted to install the necessary equipment and establish the connection to the grid.

Step 3 - Installation of PV system

Install the PV system.

- if you do not already have an appropriate energy meter suited for microgeneration, it also must be installed

Step 4 - Testing, commissioning and operation

Contact the DSO and coordinate details for the inspection and testing of the installation.

- verify with the DNO what kind of authorization or commissioning is necessary prior to connecting the system to the grid, this might also include additional fees and tests required by the DNO and most likely must be carried out by a certified technician;
- hand in all the necessary documentation and harmonise it with municipality and DNO;
- although you will be generating your own electricity, you will still be using electricity from the grid as well when necessary as well as delivering surplus electricity during the hours of peak generation to it, therefore some additional fees for using the grid will be applied

A Prosumer tool is focused to help building managers to solar energy financial tools) as a decision support tool.

Information from Latvian DNO

Step 1 – submit an application to DNO

In order to become a prosumer, you must first submit an application to your local DNO, informing that you want to install a microgenerator.

Step 2 – sign the contract with the DNO

The DNO will prepare a contract for the connection and send you the technical regulations. If the contract and regulations are acceptable, sign the contract (can be signed electronically) and send it back to the DNO.

Step 3 – install and prepare the plant for operation

After signing the contract, you are authorised to organise the installation of the microgenerator. The installation must be carried out by qualified specialist and in compliance with the technical regulations of the DNO.

Step 4 – fill in the annexes of the contract

After installing the microgenerator you must fill in and send the annexes of the contract. These annexes include:

- confirmation of the installation of the microgenerator and its readiness to work in connection with the distribution network;
- certification of the specialist regarding the installation, setting up and readiness of the microgenerator to work in connection with the distribution network;
- the principal connection scheme of the microgenerator;
- protocol of inverter settings from a certified specialist.

Step 5 – the DNO will connect the microgenerator to the grid

After checking the compliance with the technical regulations, the DNO will connect the microgenerator to the electricity grid and perform operation tests in order to adjust the microgenerator. After the tests and necessary adjustments, the DNO will draw up the final documentation needed and establish the connection to the grid.

General knowledge

Legal issues

So far, one of the most discussed legal issue regarding prosumer is the definition of the prosumer itself. Currently, there is no fixed definition of it in EU legislation. However, there has been a call from the European Parliament for one as well as establishing a framework covering essential common elements. For example, size and ownership of the installation as well as individual and collective power generation and issue of power surpluses. So far, these requests have been partially satisfied by the “Clean Energy Package”, presented on 30 November 2016.

Therefore, only handful of countries right now use the term “prosumer” in their legislation, while most of them use equivalent concepts such as self-consumption, auto-consumption, self-production, self-supplier, autonomous producer, active consumer, etc.

In addition, no Member States have a specific piece of legislation, which fully regulates prosumers. Most countries have adjusted existing regulations and legislation, which regulates Electricity Sector, use of RES or both, to include and define prosumers, as well as regulate aspects regarding them.

By analysing legal basis, on which the concept of the prosumer is built, it is clear that it is based upon following indicators:

- generation and consumption;

- capacity of power generation and installation size.

Different Member States put different weight on each of these indicators on their own legislation. For example, some countries refer to self-consumption or auto-consumption, while others manly refer to the production of energy and feeding it into the grid.

There are also differences among Member States in terms of the ownership of the installation, which generates the electricity. For example, in France it is a key aspect of being the prosumer. It is also important to find out, how collective PV generation is treated in your country. In several Member States, prosumer can be either physical or legal person, while others have also defined specific terms such as energy communities or industrial prosumers.

Several Member States also include limitations to the size or power capacity of the prosumer installations, mainly by stating that it has to be small, sometimes referring to a single household and in other times small-scale electric power plants. Therefore, in many countries also use the term microgeneration. However, these variations and caps vary significantly across Member States and this cap is used to distinguish prosumers from registered producers. Therefore, it is necessary to find out, if there is a production cap in your country and how high is it.

Funding and support

Most Member States are incentivising prosumers by allowing them to feed the generated surplus electricity back into the grid and receiving financial compensation under specific legal provisions. For example, by selling the energy to the grid at specific tariff prices. One such example is the net metering system. However, some Member States do not have any framework for prosumers to benefit from feeding the electricity back into the grid.

There are three different systems in EU Member States for feeding the electricity into the grid. Some of these enable prosumers to do it but do not provide any financial compensation for it; some provide regular compensation through reducing energy bills and others offer financial compensation at the price of the electricity sold.

In cases, when countries do not allow prosumers to feed the electricity surplus into the grid or do not provide any financial compensation for it, the distribution companies are currently often not willing to buy this surplus energy, but might be obliged to do so by the state. In some countries, it is possible for the prosumer to enter a contractual relationship with the DSO and sell their excess energy to the grid, but only to cover distribution losses. Some DSOs are required to buy the power they do not need and resell it at the market price.

In countries, where net metering system is in place, there is no direct remuneration for the prosumer. However, this mechanism allows the prosumer to deduct the electricity injected into the grid from the energy consumption and similarly deduce it from the invoice, which the house receives for the next billable month. In other countries the prosumer can feed the

energy into the grid and draw from it later, when self-supply does not meet its own demand. While in some, prosumers are subject to billing conditions and receive compensations for their surplus energy. The electricity bill also indicates how much electricity prosumer has produced and how much supplier has delivered and the prosumer will be invoiced for the difference between them.

In some countries, microgeneration with installations below a certain capacity is exempt from the energy tax.

Technological solar energy solutions

There exists a wide sort of solar cells in the market from crystalline silicon cells to thin layer cells. Available in different sizes, appearance, colour and efficiencies. More information can be found in Annex “Handbook for solar energy (strategic) planning”.

Storage and charging

Usually residential solar energy systems are connected to the electricity grid, without accumulation the extra electricity that is produced but is not needed is fed back into the power grid. Solar batteries are made to store extra solar power for later use. There are a few different types of storage systems like Hybrid inverter, AC Coupled and DC Coupled solutions. More information can be found in Annex “Handbook for solar energy (strategic) planning”.

Interreg Baltic Sea Region

EUROPEAN UNION

EUROPEAN REGIONAL DEVELOPMENT FUND

EU STRATEGY FOR THE BALTIC SEA REGION FLAGSHIP

EFFECT4buildings