EU PV SEC

New Trends in PV Applications: Self-Consumption Business Models in Energy Communities and the Use of Corporate PPAs for Utility-Scale PV

Update of self-consumption policies

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Elettricità Futura is the Italian leading association representing the national electricity industry. It encompasses electrical energy generators involved in RES as well as traditional sources, distributors, traders, retailers and service providers. It represents and stands up for the members interests in Italy and in Europe, contributing to making today’s electrical market more efficient, enhancing the sector and exploiting the potential of the energy transition.

Elettricità Futura in figures:

- 70% of the electricity consumed in Italy is ensured by companies being part of Elettricità Futura
- 600 OPERATORS
- 40,000 WORKERS
- 75,000 MW INSTALLED CAPACITY
- 1,150,000 km ELECTRICAL LINES

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- SolarPower Europe
- Wind Europe
- Bioenergy Europe
- RES AFRICA FOUNDATION
- IEA PVPS
Agenda

IEA-PVPS SelfCo Report – Soon the 2020 Edition

Introduction to Self Consumption models

Categories of Self Consumption Schemes

Self Consumption in different regulatory environments

Conclusion
IEA-PVPS SelfCo Report – Soon the 2020 Edition

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Self-Consumption Report of IEA-PVPS-Task1

The **strong growth** of **Photovoltaic sector** in the next decades obliges to boost the exploitation of non-traditional distributed electricity models

PV production fits perfectly with **distributed production systems** in which self-consumption is gaining more and more a central role in letting it to deploy the benefits like reduction of electricity taken from the grid and the revolution of **changing traditional centralized electricity systems**, thus **transforming buildings** into energy production units for people living inside and nearby

Due to **constant changes of self-consumption schemes** in many Countries, IEA PVPS-Task1 decided to update and review/renew the first edition of **Self-Consumption Report (2016)**.

Self-Consumption Report of IEA-PVPS-Task1

The report makes a comparative analysis of existing mechanisms about self consumption policies in more than 20 Countries

Italian members in IEA-PVPS-Task1 contributed to the first draft of new 2020 Edition, collecting each Country regulation about self-consumption policies and reviewing some chapters

Some previews of the new Self-Consumption Report (2020) are available in this presentation

Self-Consumption Report (Edition 2020) will be published soon!

Check for updates on https://iea-pvps.org/
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IEA-PVPS SelfCo Report – Soon the 2020 Edition

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Self Consumption and PV Sector

Mechanisms promoting **self-consumption of PV electricity** are based on the idea that PV electricity will be used first for **local use** and that all this electricity should not be injected into the grid.

The part of the bill that can be compensated depends on several options that can be applied in each Country or region.
Self Consumption and PV Sector

The mechanism of self-consumed energy generally is called:

- **“self-consumption scheme”** when self consumption is calculated in real-time (or within short time periods, e.g. 15 minutes)

- **“net-metering scheme”** when self consumption is calculated through the compensation between production and consumption on energy basis in a larger time frame (up to one year or more)

- **“net-billing scheme”** when self consumption is calculated on a “cash-flow basis”

*However, some hybrid programs exist between these main schemes*

The debate in the market is focused on lots aspects, such as which type of compensation to apply not only to the price of electricity produced/injected into the grid but also to grid costs and taxes.

Introduction to Self Consumption models

Self Consumption and Self Sufficiency

**Self consumption** should not be confused with **Self sufficiency**

**Self-consumption** of PV-generated electricity system is defined as the **share of locally generated electricity** that is consumed in-house, while **self-sufficiency** is defined as the **share of total demand** that is being supplied by in-house-generated electricity.

Producer: always more important in energy sector

The “Prosumer” is an electricity consumer producing electricity to support its own consumption (and possibly for injection into the grid). The word is built based on the association of “producer” and “consumer” and it is used widely nowadays.

In the last few years prosumer started moving from a “one to one” to a “one to many” relationship, due to the introduction of new regulation supporting the introduction of energy communities and collective/distributed self-consumption systems. This evolution is essential to enlarge the potentialities of RES and in particular of PV that is the RES that better fits with this structure of power production.

Collective self-consumption, solar communities and similar measures – New models for local generation

In the last years several Countries started promoting collective and distributed self consumption as a new model for residential and commercial/industrial electricity customers.

In that schemes self-generated electricity can be shared through different consumers located in the same building or private area (collective self-consumption), or in the same geographical area using the public grid (distributed or virtual self-consumption).

For instance, in “virtual (or distributed) self-consumption” model, the prosumers are not grouped behind the same meter and production and consumption can be offset at distance, paying specific conditions on grid costs.

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- Categories of Self Consumption Schemes
- Self Consumption in different regulatory environments
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Categories of Self Consumption Schemes

Parameters applied in SelfCo Report

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<th>Right to self-consume</th>
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<td>Revenues from self-consumed PV</td>
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These parameters have been identified, in order to categorize all kind of policies supporting self-consumption in each analyzed Country.

The parameters have been updated and revised compared to those used in the first edition of SelfCo report.

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Self Consumption in different regulatory environments

Countries analyzed in the report so far*

THE AMERICAS
Canada

EUROPE
Austria
Belgium
Denmark
Finland
France
Germany
Italy
Netherlands
Norway
Portugal
Spain
Sweden
Switzerland

ASIA PACIFIC
Australia
China
Japan
Malaysia

MIDDLE EAST
Israel

* Perhaps some Countries will be not included in the final report for missing information about their self-consumption policy
Self Consumption in different regulatory environments

Some information waiting IEA PVPS-Task1 SelfCo Report 2020*

**Net-metering** scheme

- It offers energy credits for PV electricity injected into the grid
- Scheme previously applied in some Countries like **USA**, **Canada**, **Denmark**, **the Netherlands**, **Portugal**, **Korea** and partially in **Belgium**
- These kind of policies are increasingly replaced by real-time consumption models of PV electricity, often completed with a feed-in tariff (or feed-in premium in addition the spot price) for the excess PV electricity fed into the grid

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Self Consumption in different regulatory environments

Some information waiting IEA PVPS-Task1 SelfCo Report 2020*

**Collective Self-consumption** scheme
- It’s not yet widespread but already exists in some Countries, like the Netherlands, Sweden, France, Switzerland, Spain Germany, Portugal
- Other Countries applied the scheme with some pilot projects, like Australia, Austria, Belgium, Canada
- Other Countries soon will start testing this scheme, like Italy and Japan

**Virtual Self-consumption** scheme (between distant points)
- Tested in some Countries like Finland, Mexico, Norway, Brazil, France and Australia
- It’s applied in the Netherlands under certain conditions

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**Self-consumption regulation** is changing in a very fast way in different Countries.

**Prosumers** are taking on an **important role** in the **energy transition**, exploiting technical, social and environmental benefits of renewables.

**New business models** (collective/virtual self-consumption) are developing quickly and there are different aspects under discussion (grid costs, energy compensation algorithm, consumers rights, etc.)
In this context it will be more and more important sharing information about different Country’s regulations in order to identify «best practices», to adopt the most appropriate measures in each Country for self-consumption plants, in the most efficient way for the whole electric system.

will be published soon!

Check for updates on https://iea-pvps.org/
Thank you

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