

# NATIONAL POLICY ADVISORY PAPER- OUTLINE

## Country report Belgium

PVP4Grid

D4.3

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# 1 SUMMARY

The PVP4Grid project, started in 2017, has shown the huge potential of PV prosumption in Europe. Belgium needs to drastically reconsider the EU and its Member States' policy priorities, and commit to sustainable development and more ambitious energy and climate targets, by means of addressing the widely untapped potential of all Europeans yet to become PV prosumers, for the sake of rapid and effective decarbonisation.

This document shows an overview of the prosumption and its potential growth to reach in 2030 18 GW installed capacity, 8.800 Full-time jobs and value creation over 1 billion €.

The impact of PV prosumers on the electricity networks isn't and will not be neglectable but it must be seen in parallel with all the other transformations the sector is facing : global electrification of our needs, EV's, heat pumps,... PV is only one of them and must not bear alone the financial burden of these transformations.

Different propositions to remove barriers for individual prosumption are described in the last chapter of this document. The main challenge is the phasing out of the annual net metering to a self-consumption support scheme. Wallonia should inspire of what is done in Flanders for that.

Renewable Energy communities, concept developed in the last revision of the European directive about the promotion of the use of energy from renewable sources, is the other potential that needs to be untapped in Belgium. Concerning its legal aspects, Flanders and Brussels could be inspired by what have already been done in Wallonia. Even if it still needs some adaptations to the directive, the Walloon legal framework already goes into the good direction.

In any case, a coordination between the 3 Regions is needed to achieve the most comprehensive global framework around PV Prosumption. It's important for the future prosumers but also for other actors like the installers or the DSO's.

## 2 Overview of PV Prosumption and its estimated growth potential in Belgium

### 2.1 Prosumption in numbers

PV Prosumption is very important in Belgium and is present in the three sectors: residential, commercial and industrial.

The residential sector is the biggest contributor to prosumption with more than 570.000 residential prosumers, it represents more than 12% of the total households. Only Australia has a higher rate in the world.

The commercial sector is also mainly driven by it and we can estimate that 50% of the industrial sector PV installations (> 250 MW) are also contributing.

End 2019, 4,26 GWp, we estimate that almost 90% of the total installed capacity are installations that are not injecting directly into the grid.

Sector	Size (KW)	Number of PV installs	% of prosumers	Total capacity (GWp)	Prosumers Capacity (GWp)
Residential	< 10	570.000	100	3,00	3,00
Commercial	10 – 250	8.000	90	0,84	0,76
Industrial	> 250	1.150	50	1,00	0,50
Total		579.150		4,84	4,26

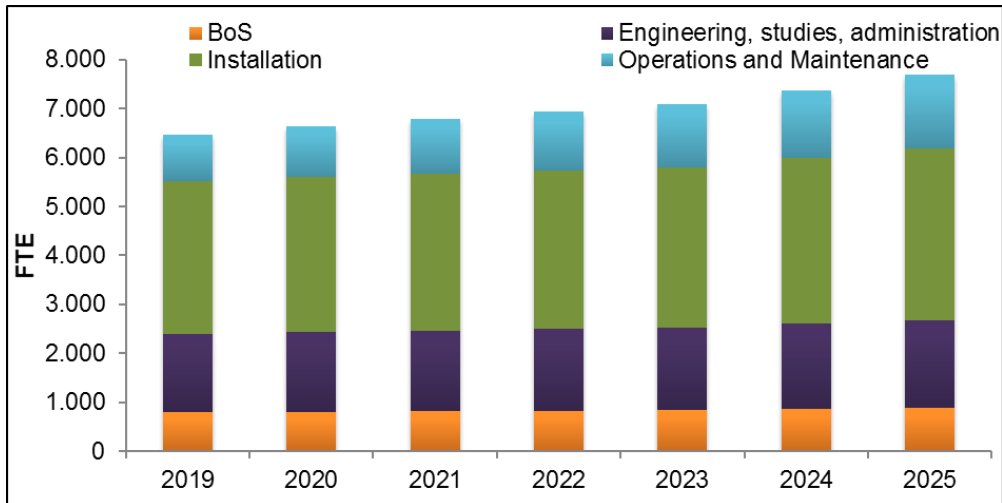
*Table 1 : Overview of the PV prosumption in Belgium (march 2020 estimates)*

### 2.2 Socio-economic impacts

In the eight countries of the PVP4Grid consortium has analyzed the socio-economic effects and the resulting macroeconomic benefit of PV prosumers. The basis of the calculations is a market outlook in each country between 2019 and 2030, as the objectives of the “National energy and climate plans” (NECPs, published on European level) are to be achieved in this timeframe. This detailed report is available online on the website of the project: [www.pvp4grid.eu](http://www.pvp4grid.eu).

For Belgium, the number of jobs in the PV industry in Belgium largely follows the annual installations of PV systems. In 2019 nearly 6.500 full-time workplaces were active in Belgium, based on the demand that was met in this year. With the future market growing, the number of jobs is forecasted to grow as well. Effects like economies of scale or the rise of general production efficiency based on learning curves add less jobs/MW in the future. However, this effect is compensated by the increase of

permanent jobs in the O&M segment. By 2030 the number of full-time jobs, estimated by the SEIM-tool, will be at 9.200 FTE. Around 94 % of these FTE are based on the demand of self-consumption PV, which accounts for 6.090 FTE in 2019 and around 8.800 FTE in 2030. Figure 1 indicates how the FTEs are distributed along the PV value chain.



**Figure 1:** Distribution of FTE along the PV-value chain, Belgium, SEIM calculation

In general, the annual value creation is determined by annual installations. The value creation based on self-consumption starts at 446 million EUR/a in 2019 and rises with a higher gradient to 543 million EUR/a by 2025. In 2030, the value chain of self-consumption-PV will create value of around 658 million EUR. Value creation can be divided into three components. With 56 % to 59 %, the net salaries are responsible for the main share of value creation, taxes and social security contributions account for 36 % and corporate net profits for 7 %.

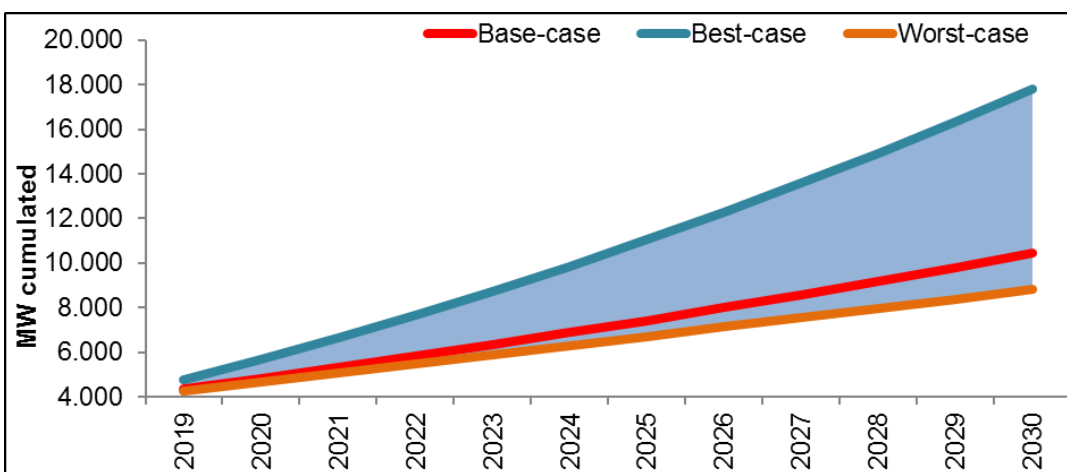
## 2.3 Perspectives

In terms of perspectives for the next five years, prosumption should keep the same share in the annual PV market with a predominance of the residential. In order to reach the target fixed in the National energy and climate plan (10GW in 2030), the market is expected to grow progressively to 600 MWp/year. Note that this objective could be more ambitious and will probably be reviewed in the next months.

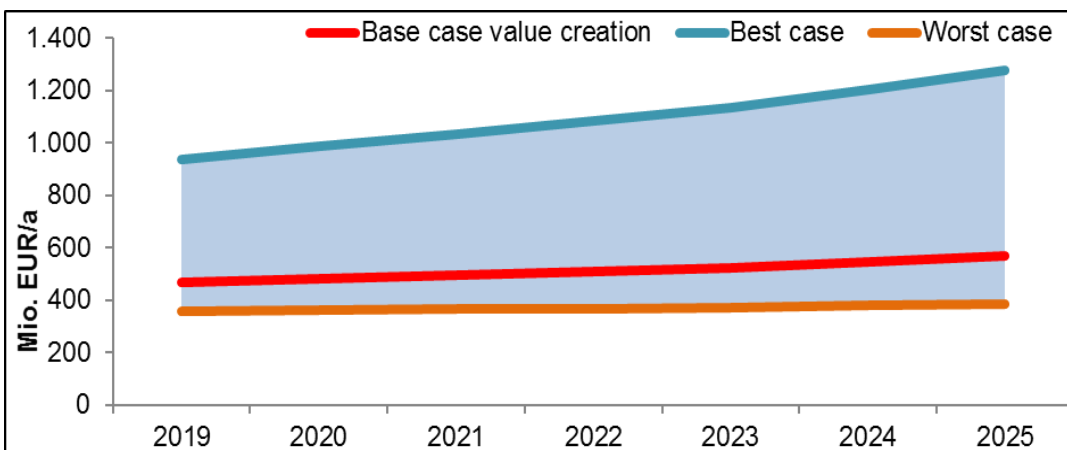
As there are some opportunities for PV in Belgium to grow even faster, the gap between the base case scenario and the best-case scenario is large. Especially the development of energy communities might have the potential to boost the national

market. The simplified access to self-consumption and the development of different prosumer concepts is a very effective driver for the PV-market.

These aspects have been considered for the generated scenarios. Figure.2 is extended until 2030 to show, that, under optimal conditions and by establishing new business models, Belgium could reach a cumulated PV capacity of around 18 GW, which would have huge socio-economic effects both on the labor market and in terms of value creation (Figure.3). It becomes clear, that the opportunities outmatch the risks linked to the current political situation in Belgium.



**Figure.2:** Cumulated PV capacity in Belgium until 2030, 18 GW PV-capacity is possible



**Figure.3:** Scenarios for the annual value creation in Belgium

## **3 Impact on electricity (distribution) networks and strategies to manage the PV increase in Belgium**

### **3.1 Prosumers impact on the grid**

#### *3.1.1 Prosumers*

The high number of prosumers in Belgium have of course some impacts on the local grids. But the early fears from many utilities turned out to be manageable. In some areas, more than 30% of the households are prosumers without major troubles. Of course, there are some issues of overvoltage, but reinforcement of the grid is rarely needed.

Grid operators see the prosumers as one of the recent changes but not the only one. Other elements (will) impact the local grids in an unneglectable way:

- Electrical vehicles,
- Heat pumps, Air conditioning,

As there is a need to decarbonize our consumption, it will go through energy savings but also through a global electrification of our needs.

#### *3.1.2 Energy communities*

Results from the PVP4Grid project simulations showed that energy communities have the potential to slightly reduce the impact of prosumers compared to a situation where all prosumers don't share their electricity surplus and just feed it into the grid without coordination.

Next to these theoretical simulations, different tests are ongoing in Wallonia and about to start in Brussels. The first results should come out by the end of 2020.

### **3.2 Strategies to manage the PV increase**

In Belgium, as said before, the number of prosumers was rapidly important. More than technical questions, it were financial and social equity questions that came up. While overall system costs are to a large extent socialised among all users (in form of network tariffs), exemptions from charges through the annual net metering was meant to incentivise a higher deployment of PV prosumption but in return, increased electricity bills for "passive" consumers

Flanders reacted by introducing a "prosumer tariff" of around 105 €/KW depending on the Distribution System Operator (DSO) in July 2015 for all the small PV systems (<10

kW). This fixed tariff enables DSO's to charge for the grid use by PV owners, without changing the system of net metering but can be seen as retroactive change.



## 4 Recent and ongoing revision of the PV regulatory framework in Belgium

### 4.1 Technical regulatory framework

At national level, the latest and most important change is the update of the technical requirements relating to the connection of power-generating plants capable to operate in parallel to the distribution network. The so called Synergrid C10/11<sup>1</sup>.

In the previous version, power-generating units above 10 kVA needed to have a grid study from the DSO and install a protection relay that disconnects from the distribution network under certain circumstances. This protection relay is an expensive equipment. Now this limit has been moved to 30 kVA. This change will boost the segment 10 – 30 kVA. Note that the grid study is still needed.

### 4.2 Recent support scheme evolutions

In terms of support, the residential prosumption has been historically driven by the annual net metering since 2007. But the 3 regions are considering to progressively shift to a self-consumption scheme. And latest European recast Electricity Directive confirms it must be achieved for new prosumers by end 2023<sup>2</sup>.

Brussels is the first region to have achieved a partial phasing out. The net-metering only applies on the energy part for all prosumers since January 2020. For the tariffs, each prosumer must pay for every kWh consumed from the grid. He doesn't pay for kWh he feeds into the grid.

In Flanders, it is planned to allow existing prosumers to keep the net-metering scheme for 15 years and it is associated with a prosumer tariff o. For new prosumers, they will be forced to be in a self-consumption scheme begin 2021 but government is still trying to find the best way to incentivize the installation in order to keep a good payback time. In Wallonia, discussions are also ongoing. For now, no phasing out of the net-metering has been planned yet and they still are planning to make a prosumer tariff like in Flanders.

For commercial and industrial prosumers, prosumption has always been authorized and no big changes are foreseen. The main support next the fact that they can self-

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<sup>1</sup> See Synergrid website : <http://www.synergrid.be/index.cfm?PageID=16832#>

<sup>2</sup> Electricity Directive 2019/944 Article 15 (4)

consume and sell excess electricity are the green certificates. This support is progressively reduced in the 3 Regions.

### **4.3 Energy Communities Legal Framework**

The 3 Regions of Belgium are evolving at different speed in terms of legislation around energy communities. Since end 2018, Wallonia has a legislation and is working on application decrees. The Brussels Region allows pilot projects if they are innovative. In Flanders, there is nothing concrete about energy communities yet in the legislation.

It's important to notice that, despite the lack of legal framework, there are already some citizens cooperatives that have all the characteristics to be defined as energy communities like the European directives defines it.

## 5 Barriers and recommendations

### 5.1 Individual prosumers

For the individual prosumers, Belgium is in a transition period with a lack of long-term vision that can make potential investor hesitate.

In Flanders, it's not clear what will be the conditions for prosumers in 2021 when the annual net-metering will stop. Without extra support, and with a self-consumption ratio of 30%, the pay-back time is too long to attract future prosumers.

*→ Flanders must design a support scheme in good coordination with all involved actors in order to have a stable and well calibrated support that will give confidence back to the potential prosumers. If the idea is to have an investment premium, it is better to fix an annual budget (x €/kWp) that allows to control the market than to have a premium on the first 3 kWp for instance. Doing so would impact the size of the PV systems and a lot of solar potential would be wasted. This has been experienced in the past in Brussels and Wallonia.*

In Wallonia, there is no perspective of phasing out of the net-metering although it's asked by the directive. The introduction of the prosumer tariff has been delayed which only add some confusion for the future prosumers.

*→ Wallonia should plan the phasing out of net-metering instead of introducing the prosumer tariff. In terms of timing, they could copy Flanders: 15 years of possible net-metering for all prosumers that installed before 2021". The support for new installations after 2021 needs also to be planned now with the same remark as for Flanders.*

In Brussels, there is still a partial annual net-metering on the energy part of the electricity bill. The regulator pushes for total phase out of the net-metering since many years but utilities forced them to delay it in order to be ready with the MIG 6, a new federal centralized data management system that will allow among other things prosumers to sell their exceeding electricity easily.

*→ Brussels has since many years a very generous system with the green certificates. The only thing that is missing is to bring confidence back to potential prosumers by an active communication. Many people are influenced by what is happening in the other regions and don't know the conditions are different in Brussels.*

## 5.2 Renewable Energy communities

For collective self-consumption inside the same building (PVP4GRID concept 2) and renewable energy communities (PVP4GRID concept 3), there is no legal framework in Flanders and Brussels, only tests sites. In Wallonia, there is a legislation since 2018 but no application decree.

The three regions are adapting/designing the legal framework considering the new European Directive<sup>3</sup> but there are still some uncertainties in the transposition:

- Interpretation of the definition of a renewable energy community (Art.2 (16)):
  - Definition of Local area: the directive defines that *the REC “should be “controlled by shareholders or members that are **located in the proximity** of the renewable energy projects that are owned and developed by that legal entity;”*  
How to define the local area? Does it need to reflect a physical reality in the Grid? Or is it just arbitrary?

*If you link the REC to a physical reality, it's easy to justify that electricity exchanged inside the community has lower grid charges. We could imagine a very low (zero?) grid charge for REC inside one building and lowered grid charges for REC behind a low voltage cabin. If you don't link the REC to a physical reality, you need another form of support to allow a viable business model: investment premium for instance.*

- Economical benefits vs financial profits: the directive defines that *“the primary purpose of which is to provide environmental, economic or social community benefits for its shareholders or members or for the local areas where it operates, rather than financial profits;”*  
How to draw the line between economical benefits and financial profits knowing that PV has been seen since the beginning as a financial investment by many prosumers?

*Depending of the kind of support chosen, the REC projects should at least be reasonably more profitable than what an individual project have.*

- Regulatory issues:
  - Promotion of EC's vs Participation to the grid costs:

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<sup>3</sup> European Directive 2018/2001 promotion of the use of energy from renewable sources recast

*Regions need to find a balance between specific support schemes for REC's and a fair participation to grid costs that doesn't kill all business model.*

- Practical issues:
  - High initial investment: Even if you can have some economies of scale, putting different actors together takes a lot of time and comes with some costs.

*A specific investment premium for REC could allow to cover these initial costs.*

- Acceptance of smart meters: There is some resistance in the population to adopt the smart meter in their houses, but it's an absolute key-point to enable energy communities.

*A good communication around it is really needed to fight against all fake news that are linked to smart meters.*