

PROFITABILITY OF NEW SMALL PV INSTALLATIONS IN WALLONIA

HOW TO SOLVE THE TRADE-OFF BETWEEN NON-DISCRIMINATION AND SUPPORT TO NEW INVESTMENTS?



Introduction

In the near future, the regulatory framework for small photovoltaic installations (< 10 kWp) in Wallonia will be subject to significant changes. On the one hand, the regulator has planned the introduction of a prosumer tariff for January 1st, 2020, while on the other hand, the Walloon energy minister Jean-Luc Crucke recently announced his intention to suppress the Quali watt subsidy system as from July 1st, 2018 [1][2].

These announcements leave PV investors to compare three regulatory frameworks (Figure 1), all having an impact on the expected profitability. In this study, Sia Partners quantifies the various situations and maps the implications for the future of the photovoltaics landscape in Wallonia.

Three regulatory framework scenarios can be envisioned for small PV installations in Wallonia

	Subsidies (Quali watt)	Prosumer tariff	Net metering
① Quali watt Regulation (until June 2018)	●		●
② CWaPE Regulation	●	●	●
③ Crucke Regulation (as from July 2018)		●	●

FIGURE 1: WALLONIA REGULATORY FRAMEWORK SCENARIOS

Context

Quali watt subsidy

The Quali watt subsidy mechanism was introduced in March 2014 to support PV investments for households. A premium is determined by the regulator to guarantee a payback period of maximum 8 years and a minimum of 5% Internal Rate of Return (IRR) for a PV installation of 3 kWp, with the assumption that the prosumer has a dual meter (peak/off-peak). The amount of the subsidy is updated every semester with new market data to support PV installations commissioned in the next semester.

Net metering

In the net metering principle, the prosumer only pays for the difference between his consumption and his production. This is an additional benefit as the prosumer actually uses the grid to inject his (excess of) electricity and take it off at any other point in time.

Prosumer tariff

The regulator claims that the planned prosumer tariff aims to get a fair contribution from small PV owners for the usage of the electricity distribution network. Such tariff ensures that prosumers pay the distribution tariffs on all the electricity they take from the grid (compared to only the net amount in the current situation). Figure 2 illustrates an overview of the change in savings due to a prosumer tariff in a net metering context.

Capacity vs Proportional prosumer tariff

Next to PV capacity and grid tariffs, the prosumer tariff is based on the percentage of self-consumption of the prosumer. Depending on the choice of the prosumer, the tariff can be determined in a twofold way: a capacity tariff based on the average self-consumption coefficient of all Walloon households or a proportional tariff based on the specific self-consumption of the household. In the latter case, a bi-directional meter or smart meter is needed to monitor self-consumption. The article focuses on the capacity tariff.

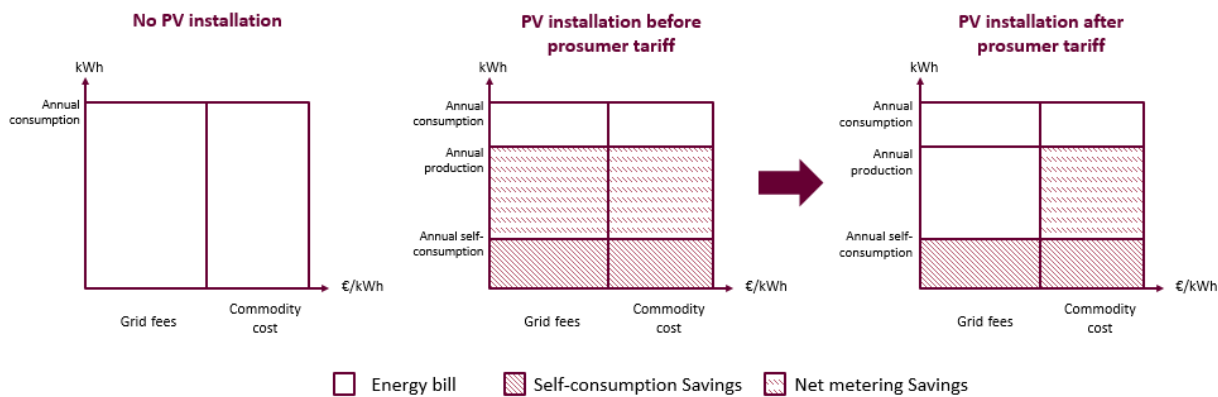


FIGURE 2: PROSUMER TARIFF AND ITS IMPACT ON SAVINGS FOR THE PV OWNER

Methodology: components of profitability

This study takes into account the main elements driving profitability (Figure 3) and covers the various scenarios: with or without subsidies, and with or without prosumer tariff. Data provided by the regulator is used, completed with assumptions by Sia Partners [3].

The analysis runs under the following assumptions: the investment is made on July 1st 2018, it is a PV installation with a capacity of 3 kWp, the installation is subject to a VAT rate of 6%, the Distribution System Operator (DSO) is Ores Namur, and the prosumer has a dual meter. The analysis outcome shows results for a 25-year PV lifetime and a 2% discount rate.

	Current Situation	Near Future
+ Benefits	<ul style="list-style-type: none"> Self-consumption savings yearly Net metering savings yearly Qualiwatt subsidy yearly 	<ul style="list-style-type: none"> Self-consumption savings Net metering savings Qualiwatt subsidy yearly (announced suppression 2018)
- Costs	<ul style="list-style-type: none"> Installation cost Maintenance cost yearly Inverter replacement cost (12y) 	<ul style="list-style-type: none"> Installation cost Maintenance cost yearly Inverter replacement cost (12y) Prosumer tariff yearly (announced introduction 2020)

FIGURE 3: ELEMENTS OF PROFITABILITY

Impact of regulatory scenarios on the attractiveness of investing in PV installations in Wallonia

In the current regulatory framework (“Qualiwatt regulation”), the profitability of small PV investment reaches 12% of IRR with a payback period of maximum 8 years, which substantially exceeds the minimum of 5% IRR the Qualiwatt subsidy originally aimed to provide. Currently, the sole purpose of the Qualiwatt premium is thus to guarantee an 8-year payback period. The resulting high internal rate of return (IRR) fuels the discussion to suppress the mechanism.

A first decision impacting profitability is the introduction of a prosumer tariff as from 2020 (“CWaPE regulation”). Sia Partners’ analysis demonstrates that such tariff is needed in order to avoid a significant discrimination between PV owners and households without PV. Indeed, without a prosumer tariff, the former would benefit from an increasingly profitable investment while the latter would bear most of the grid costs. In the CWaPE regulation, Qualiwatt continues to exist and the subsidy calculation takes into account the upcoming prosumer tariff, resulting in a drop of profitability to 10.2% (-1.8%) while keeping the payback period of 8 years.

A second announcement is the Walloon energy minister’s intention to suppress the Qualiwatt subsidy system as from July 1st, 2018, on top of the introduction of the prosumer tariff in 2020 (“Crucke regulation”). Sia Partners’ analysis shows that such scenario induces a significant drop in profitability: the IRR is expected to halve to a mere 6.7% and investors would need to wait for 13.5 years to gain their initial investment back, compared to 8 years in the Qualiwatt and CWaPE regulations. In this scenario, the suppression of Qualiwatt does have a large impact

on the profitability of future small PV investments. Investors might be incentivized to defer their investment by some years since solar profitability improves over time due to decreasing PV installation cost and rising energy prices (especially distribution network tariffs).

	IRR	PBP	NPV
① Quali watt Regulation	12.0 %	8 years	€ 8 430
② CWaPE Regulation	10.2 % (- 1.8 %)	8 years (+ 0 years)	€ 5 030 (- € 3 400)
③ Crucke Regulation	6.7 % (- 5.3 %)	13.5 years (+ 5.5 years)	€ 3 390 (- € 5 040)

1st of July 2018 | Discount rate 2% | Installed capacity 3 kWp | Dual meter | 25 year lifetime

FIGURE 4: SUMMARY OF PROFITABILITY INDICATORS UNDER THE 3 DIFFERENT SCENARIOS

Clearly, there is a trade-off to be made between, on the one hand, guaranteeing non-discrimination between prosumers and consumers, while on the other hand, preserving the growing solar market in Wallonia. A smooth transition towards a regulatory scenario with prosumer tariff and without Quali watt is needed to avoid a sudden drop in profitability. This is the spirit of the CWaPE regulation, which is the most stable scenario in terms of profitability (Figure 5).

It is important to highlight that smoothening the transition with support can take on different forms. One option is to keep the current Quali watt mechanism until it phases out by itself (CWaPE regulation) by mid-2023. A similar smooth transition can be obtained by an alternative measure: suppressing Quali watt while exempting new investors from the prosumer tariff for a certain period (up to 3 years depending on the installation date). The opportunity cost of only partially collecting prosumer tariffs from new investors during the whole transition would be around 65 mEUR (to be put in perspective with the 156 mEUR of expenses budgeted for Quali watt in the period 2014-2018). In return, a payback period of 8 years is guaranteed for investors and the incentive to delay investment - which would reduce the pace of solar capacity installation in Wallonia - is cleared.

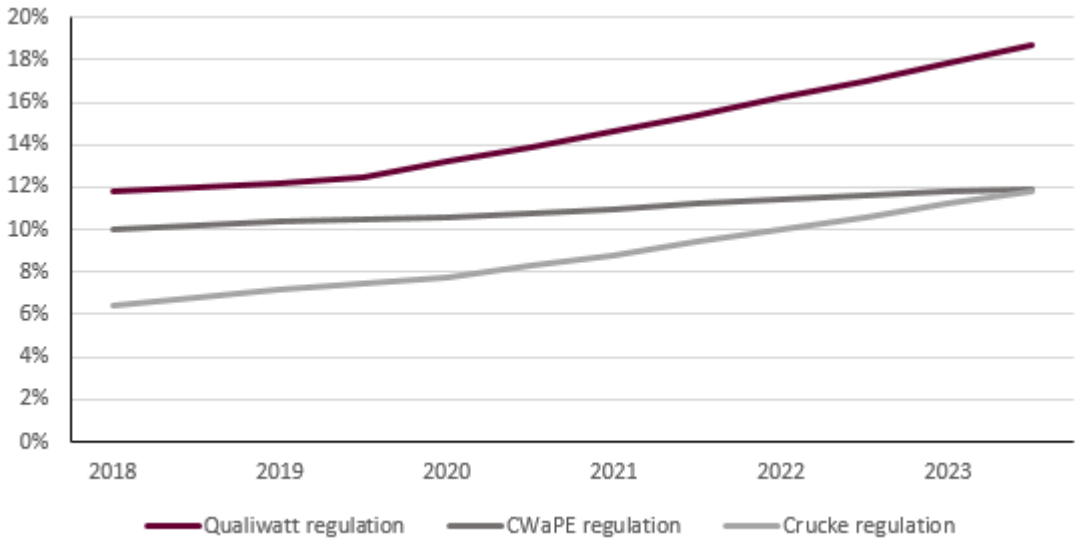


FIGURE 5: EVOLUTION OF EXPECTED PROFITABILITY PER INSTALLATION SEMESTER (2018S1 - 2023S2)

Beyond subsidies: qualitative aspects impacting PV investment

The question arises as to how the changes in regulation, thus profitability, will impact the 2020 solar objectives. With current policy and high profitability, the amount of installed PV installations is moderate. Quali watt foresees a yearly support for 12,000 installations of 4 kWp while only 54% of this amount was installed in 2017, the best year to date [4]. All else equal, decreasing profitability is likely to worsen the situation.

Installed capacity appears to be impacted by quantifiable elements such as profitability as well as qualitative elements. Indeed, if large drops in profitability have a negative effect as they discourage investors, soft elements also matter. For instance, an important element of yearly installed capacity is the actual promotion of solar. The Flemish initiative 'zonnekaart' has attracted 500.000+ visitors to its website, of which 15% have requested a quote for a PV installation [5][6]. Also, unambiguous policy supporting renewable energy is more likely to boost the confidence of PV investors. It is such a multi-angle approach that pushes up the installed PV capacity and public authorities can encourage investment through mechanisms other than subsidies.

Conclusions & recommendations

Policymakers face a complex but necessary trade-off between on the one hand encouraging investments in small PV installations and on the other hand avoiding an increasing discrimination between households with or without PV installations.

The decisions shaping the new regulatory framework for small PV in Wallonia will depend on whether Walloon authorities deem solar as an essential element in the energy mix and what the targets are for solar in 2020 and beyond. Therefore, it is important that the government restates its solar objectives prior to making a final decision on the level of support.

Sia Partners' review of the profitability of new small PV investments in Wallonia highlights significant differences between the scenarios that are currently in sight. In particular, introducing the prosumer tariff while suppressing the Quali watt support would almost halve profitability (from respectively 12% to 6.7%). Even more significantly, it would imply a shift in the payback period, increasing from 8 years to 13.5 years. All else equal, such a regulatory change is likely to drive down the number of new installations, potentially impacting the feasibility of Wallonia's solar targets.

One option pointed out by Sia Partners' analysis would be to leverage the expected fall of installation costs (combined with rising energy prices) in order to operate a smooth transition between the current situation and a subsidy-free, equitable framework for solar investments. For instance, exempting new investors from the prosumer tariff for a certain period (up to 3 years depending on the installation date) would guarantee a reasonable payback period. Sia Partners estimates that such transition framework would not be needed beyond 2023. This would amount to around 65 mEUR (to be put in perspective with the 156 mEUR of expenses budgeted for Quali watt in the period 2014-2018). Lastly, independently from the financial aspects of solar investment, qualitative aspects should be taken into account on top of the proposed support measure.

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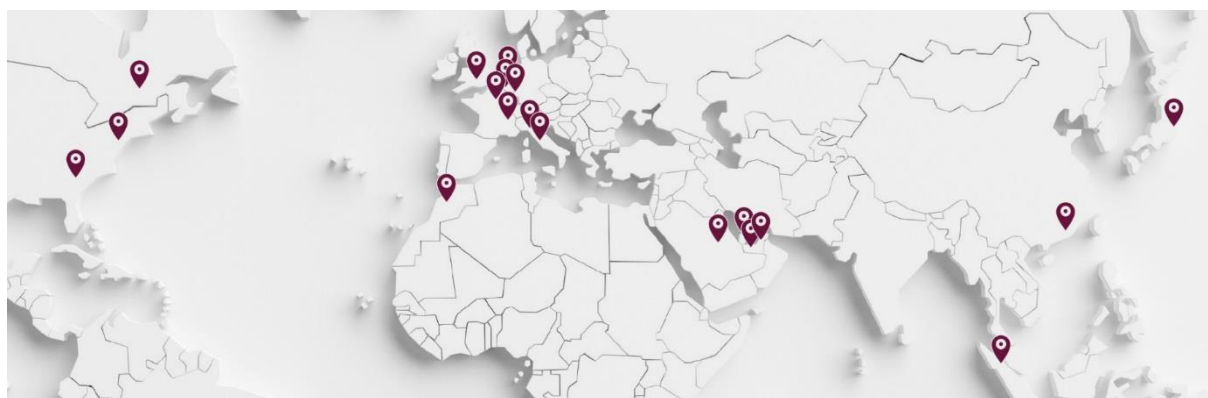
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