Sweden's Solar Rooftop Country Profile

April 2024

Overall Score 13

2022 Score 16

Summary

Sweden has surpassed its solar energy target of 2.2 GW and is now aiming for 6.6 GW in the revised NECP draft, though overall renewable energy contributions are pending as the Renewable Energy Directive revision process comes to an end. There are concerns over policy consistency due to changes to the government and decisions contradicting climate goals. Incentives favour self-consumption models, but subsidies are lacking, except for private solar PV markets.

Permitting regulations have eased the installation of solar systems under 500 kWp, but larger installations face administrative challenges. Collective self-consumption is permitted within apartment buildings, but energy communities legislation still remains absent. Instead, the Swedish regulator recommends that energy communities adopt the legal form of economic associations. Solar installation rates have grown significantly, yet challenges still persist, including a shortage of trained installers. Nonetheless, Sweden leads in smart meter penetration at 100%.

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Scoring System

This country profile highlights the good and the bad policies and practices of solar rooftop PV development within Sweden. It examines and scores six key areas: governance, incentives & support schemes, permitting procedures, energy sharing schemes, energy communities and additional measures to support solar PV development. For this update, we will have the 2022 score to the right as a benchmark:

The scoring system is set out below:

- **Green = 4-5 points**
- **Orange = 2-3 points**
- **Red = 0-1 points**

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Country Profile
Sweden

The Good

- **Meeting Solar Energy Targets:** Sweden has reached its solar energy target (2.2GW) in the current NECP in force and is aiming for 119% higher target (6.6GW) in the new NECP draft.
- **Incentives for Self-Consumption:** The country offers incentives (tax reductions) for self-consumption models, encouraging individuals to generate and use their own solar energy.
- **Ease of Permitting for Small Systems:** Regulations facilitate the installation of small-scale PV systems (500 Kwp), making it easier for individuals and smaller entities to adopt solar energy.
- **Rapid Solar Installation Growth:** There has been rapid growth in solar installations, particularly in rooftop and domestic systems, demonstrating increasing interest and uptake of solar energy in Sweden.
- **High Smart Meter Penetration:** Sweden has achieved 100% smart meter penetration, indicating technological advancement and efficient energy monitoring.

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The Bad

- **Uncertain Policy Landscape:** A change to the government and decisions contradicting climate goals raise doubts about policy consistency and commitment to sustainable energy initiatives.
- **Lack of Subsidies:** Except for private PV markets, subsidies for solar energy are lacking, potentially hindering more uptake and affordability.
- **Administrative Hurdles for Large Installations:** Larger solar installations face administrative burdens, potentially discouraging investment in larger-scale renewable energy projects.
- **Delayed Energy Communities Legislation:** Despite passing the deadline in 2021, Sweden has not adopted legislation transposing energy communities, potentially impeding community-based renewable energy initiatives.
- **Skill shortage:** There is a shortage of trained installers, which could slow down the pace of solar energy adoption and implementation of renewable energy projects.

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Governance 2

2022 Score : 2

Sweden has already reached its solar target in the current NECPs in force of 2.2 GW and has established a new target in its draft revised NECPs of 6.6 GW, 119% higher. However, in the draft Sweden has not set an overall national renewable energy contribution, waiting for the RED revision process to come to an end.[1] In general, the targets presented in the draft lack credibility, since there are no additional policies and measures compared to the 2019 NECP, which are not sufficient for the set climate targets. Additionally, there has been a change of government which poses doubts on the capacity to reach the targets since they have adopted decisions like lower fuel taxes or removing the carbon tax for district heating that go in the opposite direction.[2] Sweden lacks a roadmap or strategy on solar PV, but there are some reports by the Swedish Energy Agency including aspects on potential, barriers, roadmaps, etc.

1. https://caneurope.org/new-report-calls-for-drastic-improvement-of-europes-national-energy-and-climate-plans/
2. https://caneurope.org/new-report-calls-for-drastic-improvement-of-europes-national-energy-and-climate-plans/

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Incentives 2

2022 Score : 3

Sweden has traditionally opted for a model based approach on self-consumption due to the absence of a feed-in-tariff, favouring capital subsidies and feed-in premium schemes, in order to give value to excess electricity. However, as of 2022, no subsidies exist except for the private domestic PV market segment. In general, a PV system owner that sells the excess electricity will receive compensation from the electricity trading utility company and from the grid owner. The compensation varies depending on the grid owner. As an incentive, prosumers benefit from tax reduction schemes for excess electricity injected into the grid, and a tax reduction for the installation of individual solar PV systems. Producers that own PV systems whose total power amounts to less than 500 kWp (Kilowatt) do not have to pay any energy tax for the self-consumed electricity. Additionally, there is an (income) tax reduction of 0.6 SEK/kWh for feed-in electricity up to the amount that is bought, for connections up to 100A; and an (income) tax credit related to the installation cost for private persons, which is equal to an investment subsidy of the order of 10-15% of the total cost. Finally, homeowner's associations or property owners are also granted a deduction for VAT for roof-mounted PV systems.[3]

3. https://iea-pvps.org/wp-content/uploads/2022/10/National-Survey-Report-of-PV-Power-Applications-in-Sweden-2021.pdf

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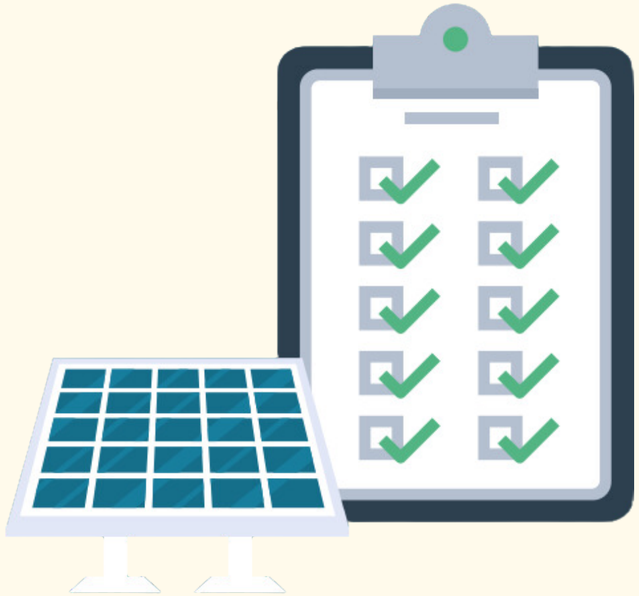

Permitting 3

2022 Score : 3

The current legislation favours in general the installation of self-consumption PV systems which do not exceed 500 kWp. Above this level, holders of the installation have the administrative burden of measuring and reporting self-consumed electricity. As of the first of August 2018, PV and solar thermal system installations on buildings are exempted from building permits in general. Some installations still require building permits if they are located in a valuable area from the historical, cultural, etc. points of view, if it is in an area of national interest to the military, or in general when the equipment does not follow the shape of the current building. The standard procedure for grid connection is quite straightforward. It requires a notification to the grid owner, who has to specify the requirements for the installation. After installation, the electrical company must submit a final report to the grid company and conduct a system inspection. The grid company then replaces the electricity metre at no cost to measure surplus electricity fed into the grid.[4.]

4.https://iea-pvps.org/wp-content/uploads/2022/10/National-Survey-Report-of-PV-Power-Applications-in-Sweden-2021.pdf

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Energy Sharing 1

2022 Score : 1

Collective self-consumption from a PV system within an apartment building is permitted in Sweden as long as all the apartments share the same grid subscription, but not through the public grid. The standard practice is for the entire apartment building to have a single electricity contract with the utility. In 2022, a legal exception was introduced that allows for the establishment of microgrids for sharing and storing renewable electricity. However, there are legal doubts about how to interpret it and this is delaying implementation on the ground. Virtual self-consumption is not allowed.[5.]

6. https://iea-pvps.org/wp-content/uploads/2022/10/National-Survey-Report-of-PV-Power-Applications-in-Sweden-2021.pdf

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Energy Communities 1

2022 Score : 2

Sweden has not yet adopted nor even proposed any legislation transposing energy communities despite the deadline being June 2021 and most European countries have done so (at least partially or simply copy-pasting Renewable Energy Communities (RED) and Citizen Energy Communities definitions). The Swedish regulator recommends that energy communities adopt the legal form of economic associations (the Swedish version of cooperatives) and adopt an overarching concept with two operative definitions: citizen energy communities and renewable energy communities. This should contribute to promoting a coherent approach. According to the proposal, the energy community must be registered and supervised by the network authority, which may request information and issue orders to ensure compliance.[6.]

6. https://iea-pvps.org/wp-content/uploads/2022/10/National-Survey-Report-of-PV-Power-Applications-in-Sweden-2021.pdf

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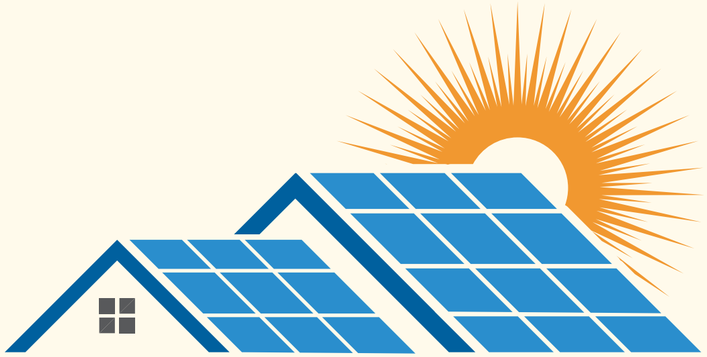

Additional Measures 4

2022 Score : 4

The installation rate of PV continues to increase rapidly in Sweden, particularly rooftop and domestic ones. In 2022, a total of 796.6 MW of grid-connected solar capacity was added,which means a 59% market growth compared to the 499.7 MW installed in 2021. From it, approximately 37.2 MW are estimated to be centralised ground-mounted PV parks, while 759.4 MW self consumption PV systems, meaning that self consumption market expanded by 70% compared with 2021.[7] However, according to the estimates, a lower energy price and higher interest rates have negatively impacted the growth rate of solar panels in 2023. In Sweden, there is often a lack of availability of trained installers. With this regard, the government has promoted the design and implementation of 2-year courses for designing PV systems within the Higher Vocational Education (Yrkeshögskolan) taught by some regional schools together with PV companies. On a final note, Sweden has reached 100% of smart meter penetration, so it can be considered a frontrunner in this regard.

7. https://iea-pvps.org/wp-content/uploads/2022/10/National-Survey-Report-of-PV-Power-Applications-in-Sweden-2021.pdf

Engaging citizens and local communities in the solar revolution

The Rooftop Solar PV Comparison Report update produced by CAN Europe and its member organisations aims to detect barriers at national level that impede a higher uptake of residential rooftop solar PV, highlight best and bad practices, and to put forward concrete policy recommendations for setting up the right regulatory framework to ensure an accelerated uptake of rooftop solar PV.

11 countries were chosen to be assessed and scored on their performance regarding the development of rooftop solar PV within their country.

For the full report, follow the link below:
http://caneurope.org/rooftop-solar-pv-comparison-report