



**GLOBAL SOLAR**  
COUNCIL

# Distributed Solar In Germany

Short overview of status and  
permitting procedures, based on  
survey results.

May 2024

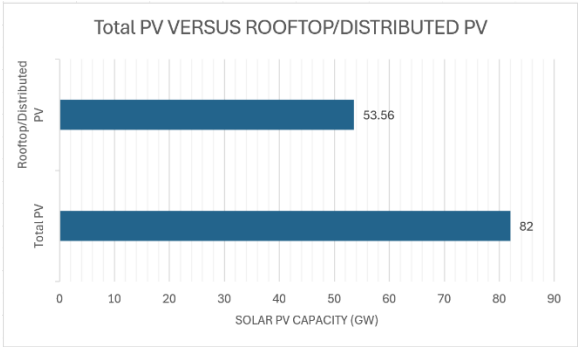
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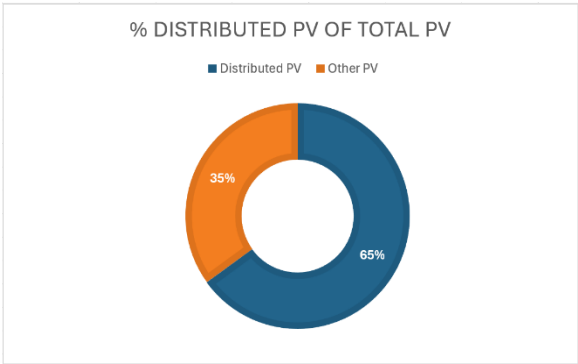
**SolarPower  
Europe**



Germany has significantly advanced its solar power sector, achieving an operational solar PV capacity of 82 GW by the end of 2023, with 14 GW added in just the previous year according to GSC partners, SolarPower Europe.



The cumulative capacity for distributed solar PV in 2022 is 53.56 GW (IEA). This capacity spans across residential, commercial, industrial, and ground-mounted segments, reflecting a diverse and robust deployment. Notably, residential installations constitute 35% of this capacity, underscoring a strong consumer adoption.

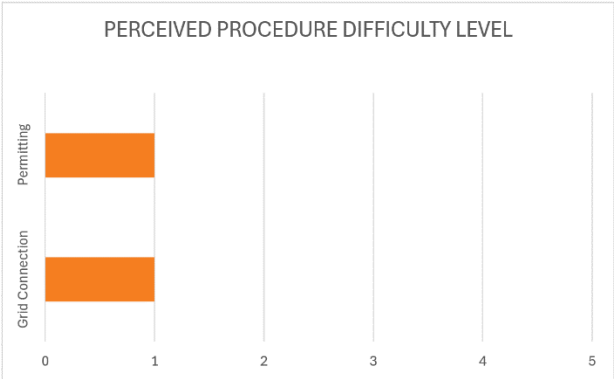


Commercial installations (<80kW) make up 21%, while industrial installations (<1MW) make up about 11%, and ground-mounted

installations make up 33% of the remaining distributed PV in Germany (SolarPower Europe). Furthermore, Germany has set a strategic target to cover at least 80% of its gross electricity consumption with renewable energies by 2030, currently at 46.2% as of 2022. The country aims to install a total capacity of 215 GW, with significant yearly additions planned from 2026. The planned rate of addition is 22 GW a year, with half coming from open space installations, and other half rooftops (Agora Energiewende).

PERMITTING AND GRID CONNECTION

In Germany, the process of permitting and connecting solar PV systems to the grid is characterized by its efficiency and low complexity, both rated very easy (1 out of 5). This streamlined approach is pivotal in facilitating the rapid deployment of solar technology across the country. However, despite the overall simplicity, there are nuances and challenges due to regional variations and certain bureaucratic procedures that can still pose obstacles.



The German authorization process has made significant strides through the digitalization

of permission processes, including environmental impact assessments. This digital transformation has greatly enhanced the efficiency of administrative procedures. Additionally, the country has designated special acceleration areas to expedite the development of renewable projects, although this sometimes leads to the creation of de facto exclusion zones, which can complicate project development.

A major positive aspect of Germany's regulatory environment is the recognition of the overriding public interest for renewables in the permitting process, which can significantly benefit project proponents in legal contexts. However, this is not always consistently applied in practice, and the lack of uniform implementation across different regions can result in a fragmented process. Local or regional authorities are not always supportive of accelerating renewable energy deployment, which can further slow down the permitting process for new projects.

Moreover, Germany has implemented measures to simplify the grid connection process. For example, commercial photovoltaic systems with an output of up to 500 kW no longer need to present a system certificate to connect to the grid. Instead, simplified proof of unit certificates is sufficient, reducing the administrative burden on operators. Despite these advancements, the most complex stage of permitting often involves navigating the multi-layered regulatory framework and ensuring

compliance with both national and EU-level regulations.

To address these challenges and further streamline the process, Germany has adopted policy instruments like the elimination of the certification requirement for smaller systems and the introduction of provisions for acceleration areas. These measures are part of the broader "Solar Package" initiatives aimed at reducing bureaucratic barriers and facilitating faster rollout of solar projects.

## **POLICY AND INCENTIVES**

Germany's robust framework of policies and incentives significantly propels the adoption and expansion of solar PV across the nation. Key among these are the dynamic feed-in tariffs and market premium schemes designed to encourage solar power production. For residential systems under 100kWp, the government has established a feed-in tariff system, which is adjusted biannually. Starting February 2024, tariffs will see a reduction by 1 percent every six months, ensuring the incentives remain in alignment with market dynamics.

For commercial and industrial installations, the incentive structure is particularly innovative. Systems larger than 100kWp benefit from a market premium based on a one-sided Contract for Difference (CfD), where premiums are adjusted against the yearly average solar market price. This not only secures investor returns but also aligns with market conditions, encouraging larger installations. Notably, from 2026, new installations above 200kW will be required to

participate under a two-sided CfD scheme, fostering greater stability in energy prices and investment returns.

Additionally, small rooftop installations up to 30 kWp enjoy a VAT exemption, which significantly lowers the entry barrier for residential and small-scale commercial solar systems. This is complemented by bureaucratic reductions such as the removal of the certification requirement for PV systems below 500 kW, greatly simplifying the connection and operation process.

The introduction of the “Speicherstrategie” by the Federal Ministry for Economic Affairs and Climate Action marks another critical step in supporting energy storage alongside solar systems. This strategy allows for the storage of electricity generated by PV systems without losing the eligibility for feed-in tariffs, thus enhancing the efficiency and reliability of solar energy.

The government's commitment to fostering a conducive environment for solar energy is also evident in its support for energy communities and the encouragement of self-consumption. Financial mechanisms such as enhanced tariffs for smaller installations and the support for local council initiatives in promoting plug-in solar systems illustrate Germany's holistic approach to integrating solar energy into its grid system.

