Germany Market Update: Europe’s Largest Solar Market

German Solar Association (BSW-Solar)
David Wedepohl, Managing Director International Affairs

German Solar Association

The Network of the Solar Energy and Storage Sectors

Over 1,000 members

BayWa r.e., BMI, CHNT, e.on, ENCAVIS, Schweizer, FENECON, Fronius, goldbecksolar, ecoligo, HUAWEI, ib vogt, IBC SOLAR, juwi, KOSTAL, maxsolar, MEYER BURGER, SCHLETTER, SENEC, SHARP, SIEMENS energy, SMA, Solar Promotion, SOLARWATT, sonnen, SUNGROW, TESVOLT, TotalEnergies, VARTA, VIESSMANN

and many more

International memberships

EREF – European Renewable Energies Federation, Global Solar Council, SolarPower Europe, Solar Heat Europe, Greening the Islands, ESTELA

among others

National memberships

BEE, Agentur für Erneuerbare Energien, LEE NRW, Solar Cluster Baden-Württemberg, IHK Berlin

among others

www.solarwirtschaft.de

German Solar Association

BSW SOLAR

TASK ········· To represent the solar industry in Germany in the photovoltaic, thermal and storage sector

VISION ········· A sustainable global energy supply provided by solar (renewable) energy

ACTIVITIES ········· Lobbying, political advice, public relations, market observation, standardization

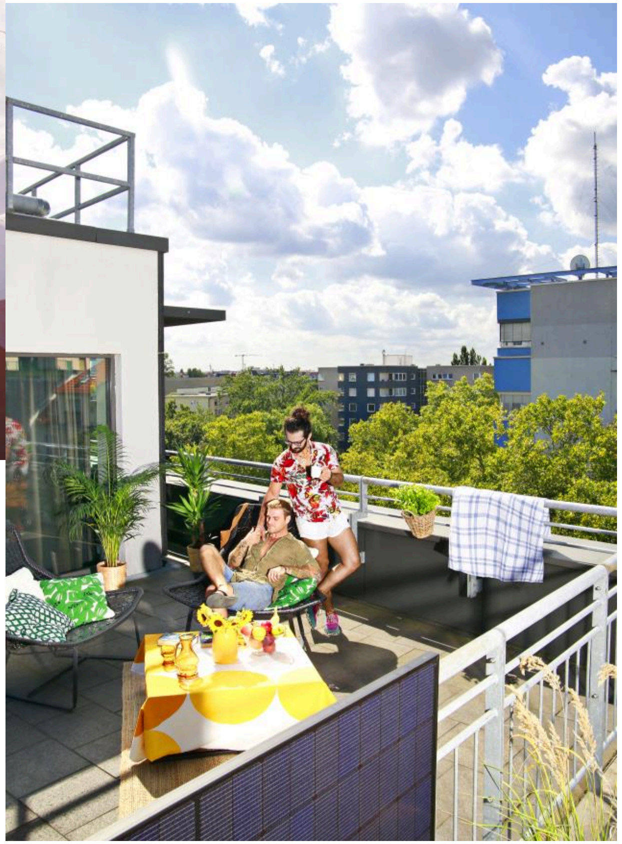
EXPERIENCE ········· Active in the solar energy sector for over four decades

REPRESENTS ········· More than 1000 solar producers, suppliers, wholesalers, installers and other companies active in the solar business from all over the world

HEADQUARTER ········· Berlin, Germany

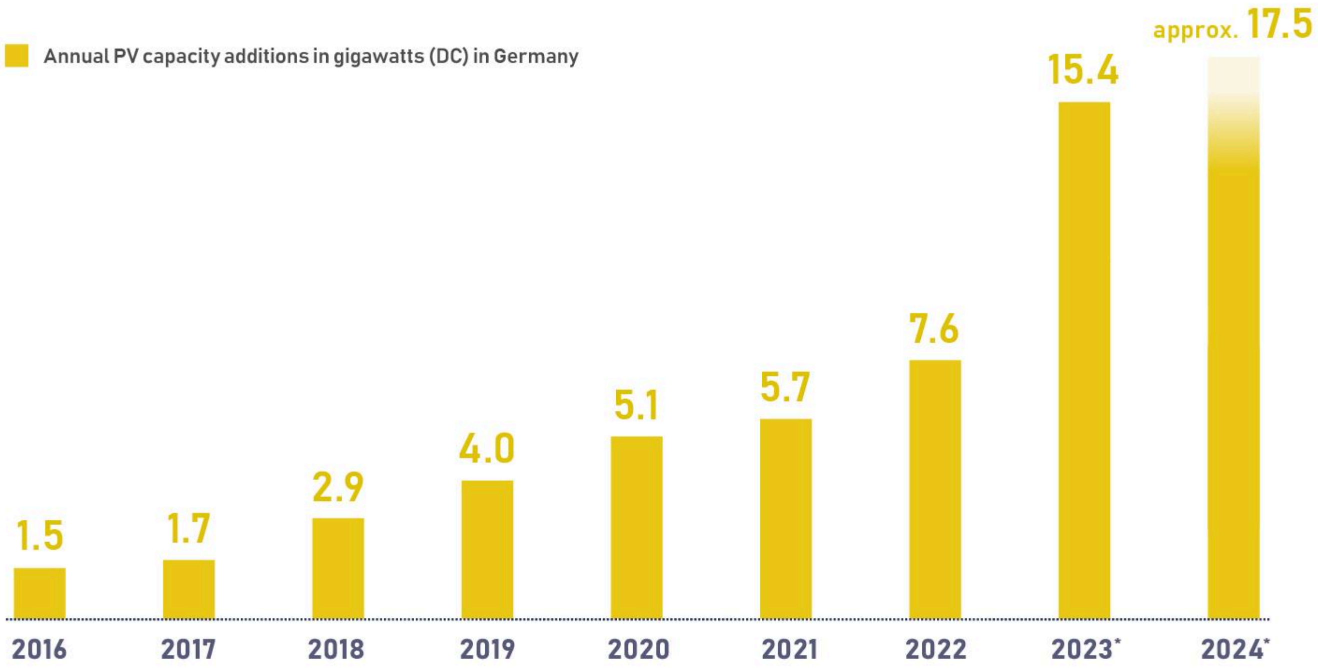
EQUIPMENT | MATERIALS | SYSTEM COMPONENTS | WHOLESALE & DISTRIBUTION | PROJECT DEVELOPMENT | CONSTRUCTION | O&M

Recent milestones
in the German PV and storage market

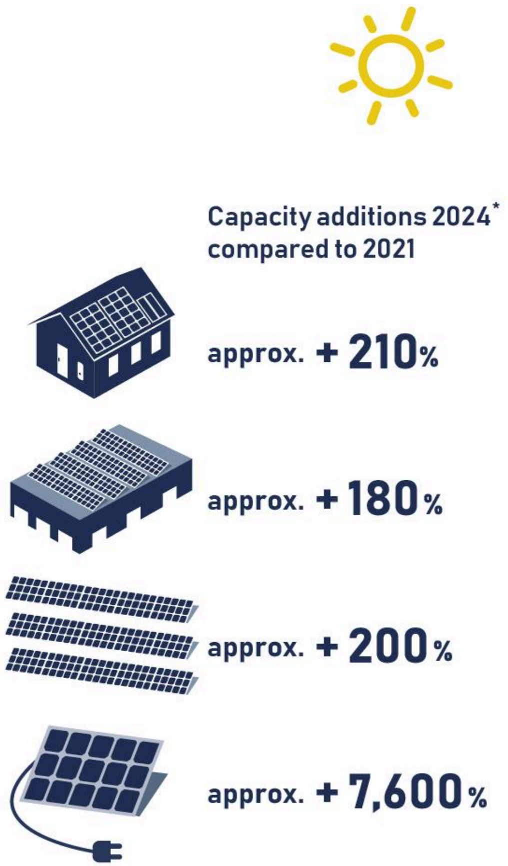



- More than **100 GWp cumulative installed PV capacity** reached at the end of 2024
- **Over 25 GWp new rooftop PV capacity** installed in the years 2022 to 2024
- More than **1 GWp new ground-mounted PV capacity installed via EEG-tenders** in February 2025
- More than **5 million PV-systems** as of Q2/2025 - including more than **1 million plug-in solar devices** (registered)
- Over **20 GWh of cumulative battery storage** as of Q1/2025
- More than **2 million battery storage units** as of Q2/2025

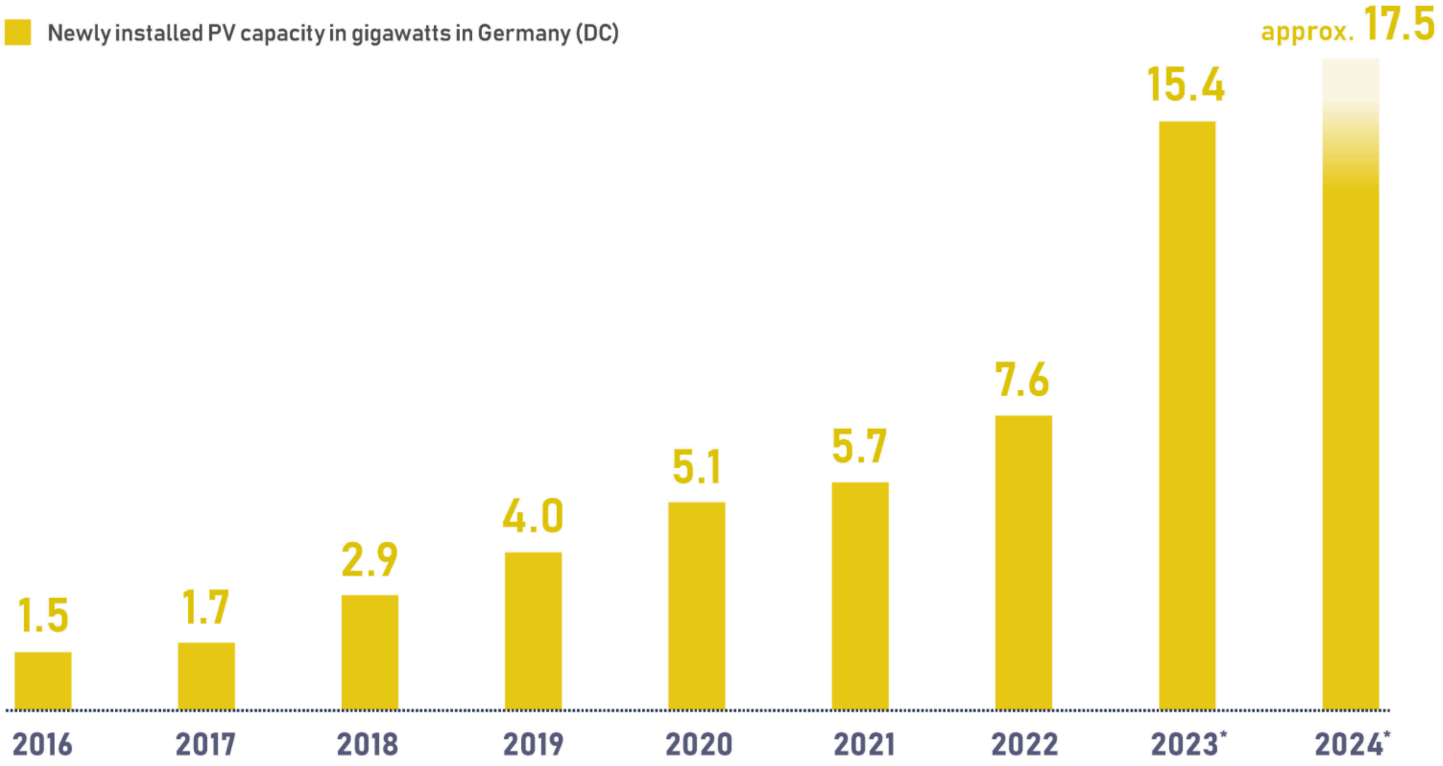
Tripling within three years:
Annual capacity additions of solar PV



* Updated Forecasts for 2023 and 2024 include estimates of expected late registrations.
BSW-Solar, based on Marktstammdatenregister (commissioning date of PV unit); as of 03/31/2025

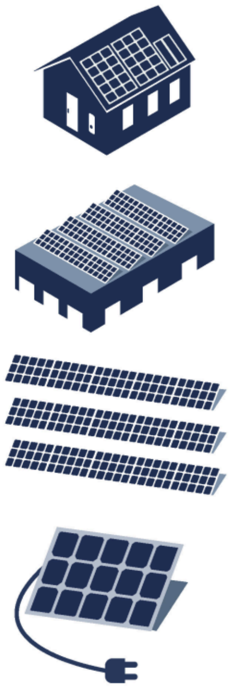


German PV market continued to grow in 2024
Diverging developments across market segments



*Updated forecasts for 2023 and 2024 include estimates of expected late registrations.
BSW-Solar, based on Marktstammdatenregister (commissioning date of PV unit); as of 04/23/2025

Capacity additions in 2024* compared to 2023



approx. – 15%

approx. + 30%

approx. + 50%

approx. + 110%

Added PV capacity grew by approx. 14 % in 2024 compared to 2023

Diverging developments across market segments

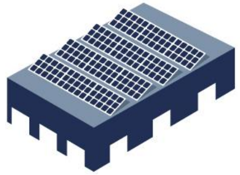
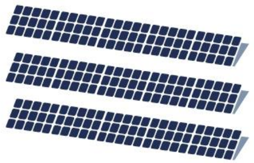
back up Fo

Newly added PV capacity	**Residential rooftop PV** ≤ 30 kWp	**C&I rooftop PV** > 30 kWp	**Ground-mounted PV** (incl. other structures, floating PV and agrivoltaics)	**Plug-in solar devices** (“Balcony PV“)
2023*	approx. 7.9 GWp	approx. 2.9 GWp	approx. 4.4 GWp	approx. 0.2 GWp
2024*	**approx. 6.8 GWp** *approx. -15%*	**approx. 3.8 GWp** *approx. +30%*	**approx. 6.6 GWp** *approx. +50%*	**approx. 0.4 GWp** *approx. +110%*

Source: BSW-Solar based on core energy market data register (Marktstammdatenregister as of April 23 2025, commissioning date and registration date of PV unit, added capacity in DC)
* Forecasts for 2023 and 2024 include estimates of expected late registrations. Due to rounding, the sums and percentages may not reconcile exactly.

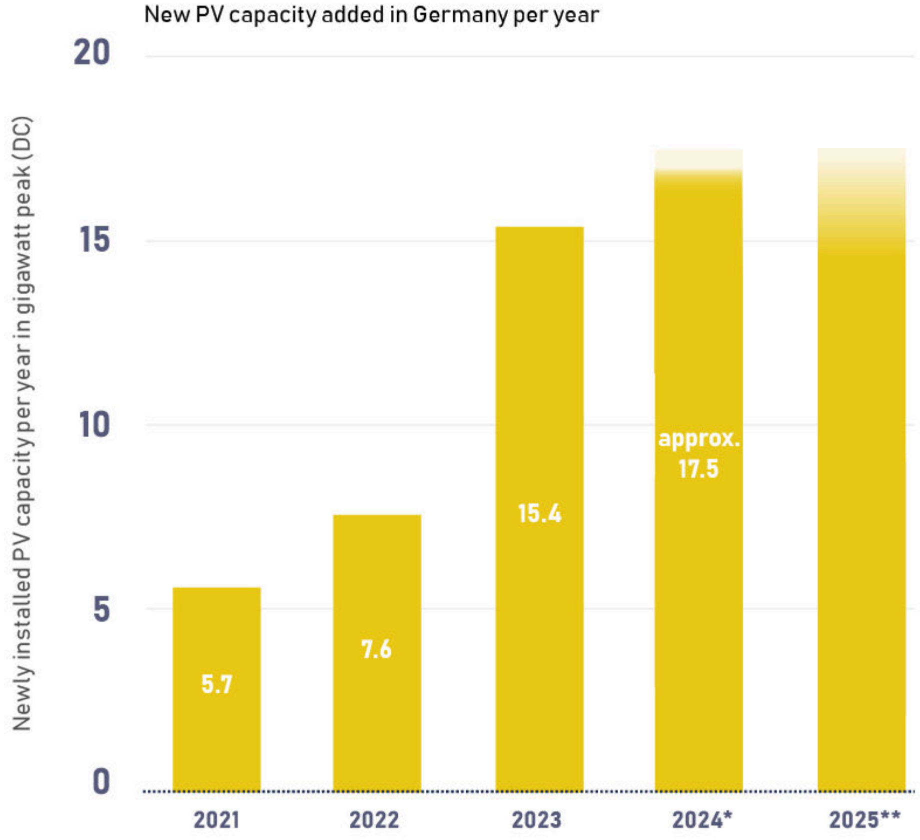
Added PV capacity in first half of 2025 approx. -5%*

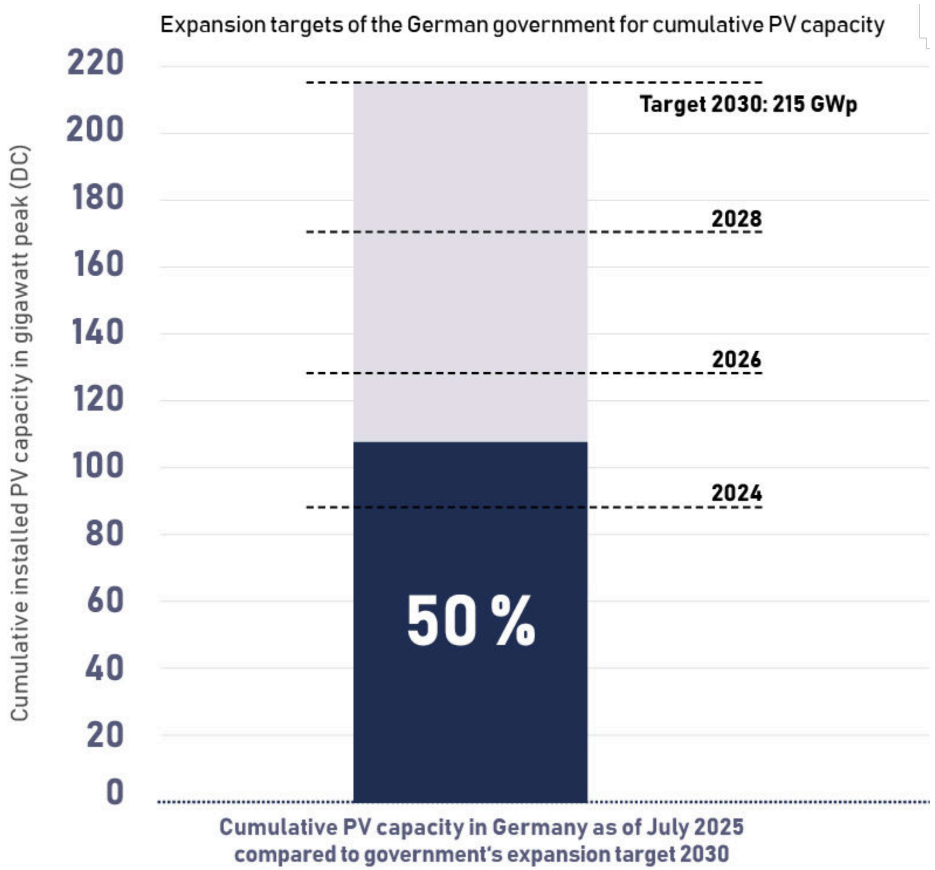
Approx. 7.1 GWp in H1 2025 compared to 7.5 GWp in H1 2024*

Newly added PV capacity	 **Residential rooftop PV** ≤ 30 kWp	 **C&I rooftop PV** > 30 kWp	 **Ground-mounted PV** (incl. other structures, floating PV and agrivoltaics)	 **Plug-in solar devices** (“Balcony PV“)
H1 2024 *registered before July 22nd **2024***	approx. 3.0 GWp	approx. 1.5 GWp	approx. 2.8 GWp	approx. 0.2 GWp
H1 2025 *registered before July 22nd 2025*	**approx. 2.3 GWp** *-23%*	**approx. 1.6 GWp** *+7%*	**approx. 3.0 GWp** *+6%*	**approx. 0.3 GWp** *+38%*

Source: BSW-Solar based on core energy market data register (Marktstammdatenregister as of July 22nd 2025, commissioning date and registration date of PV unit, added capacity in DC)
Note: Preliminary data for H1 2025. Further late registrations for H1 2025 are to be expected.
*Comparison based on commissioned PV installed within identical registration periods to eliminate the distorting effect of late registrations.
Due to rounding, the sums and percentages may not reconcile exactly.

50 % of current 215 GWp PV expansion target for 2030 achieved





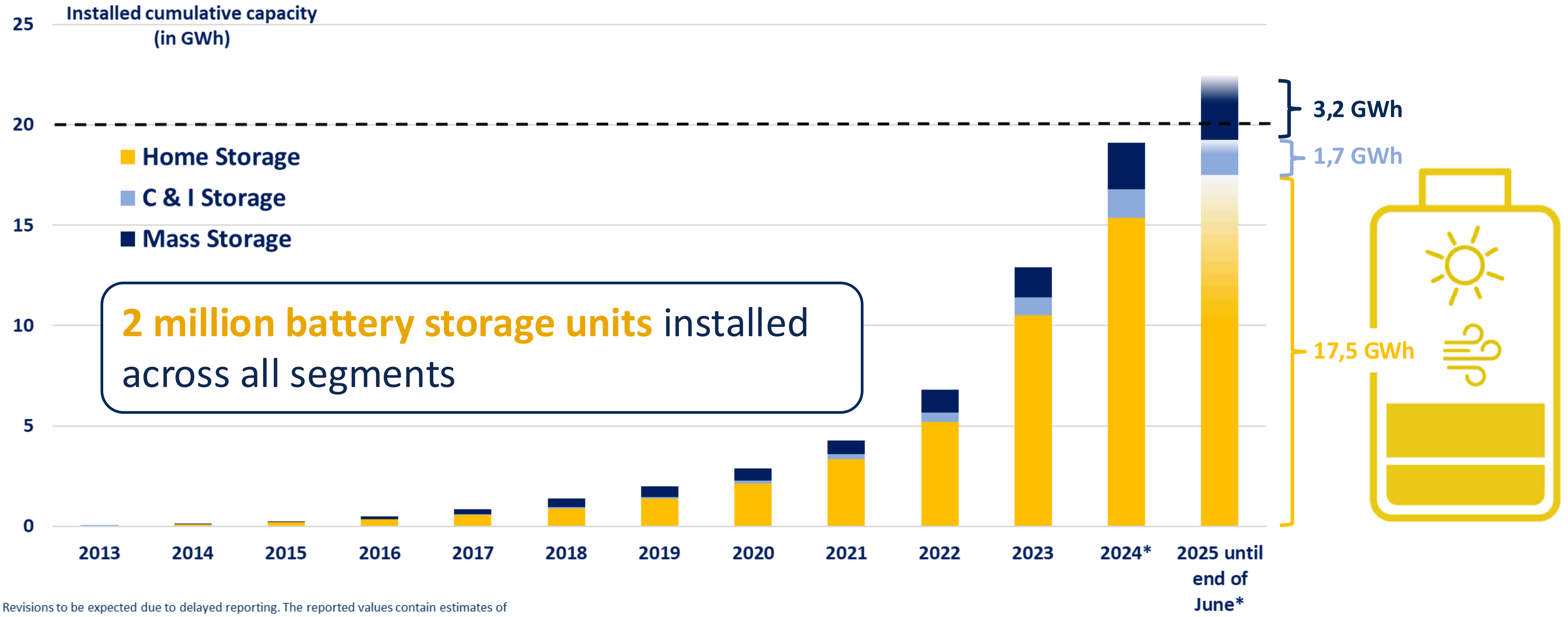
Source: Wedepohl

Source: Adobe Stock

* Forecast for 2024 and 2025 including estimate of expected late registrations ** Preliminary forecast
Source: BSW-Solar based on Marktstammdatenregister (commissioning date of the PV unit), as of July 2025; EEG 2023

Battery storage volume surpassed 20 Gigawatt hours in 2025

2 Million battery systems installed across all segments

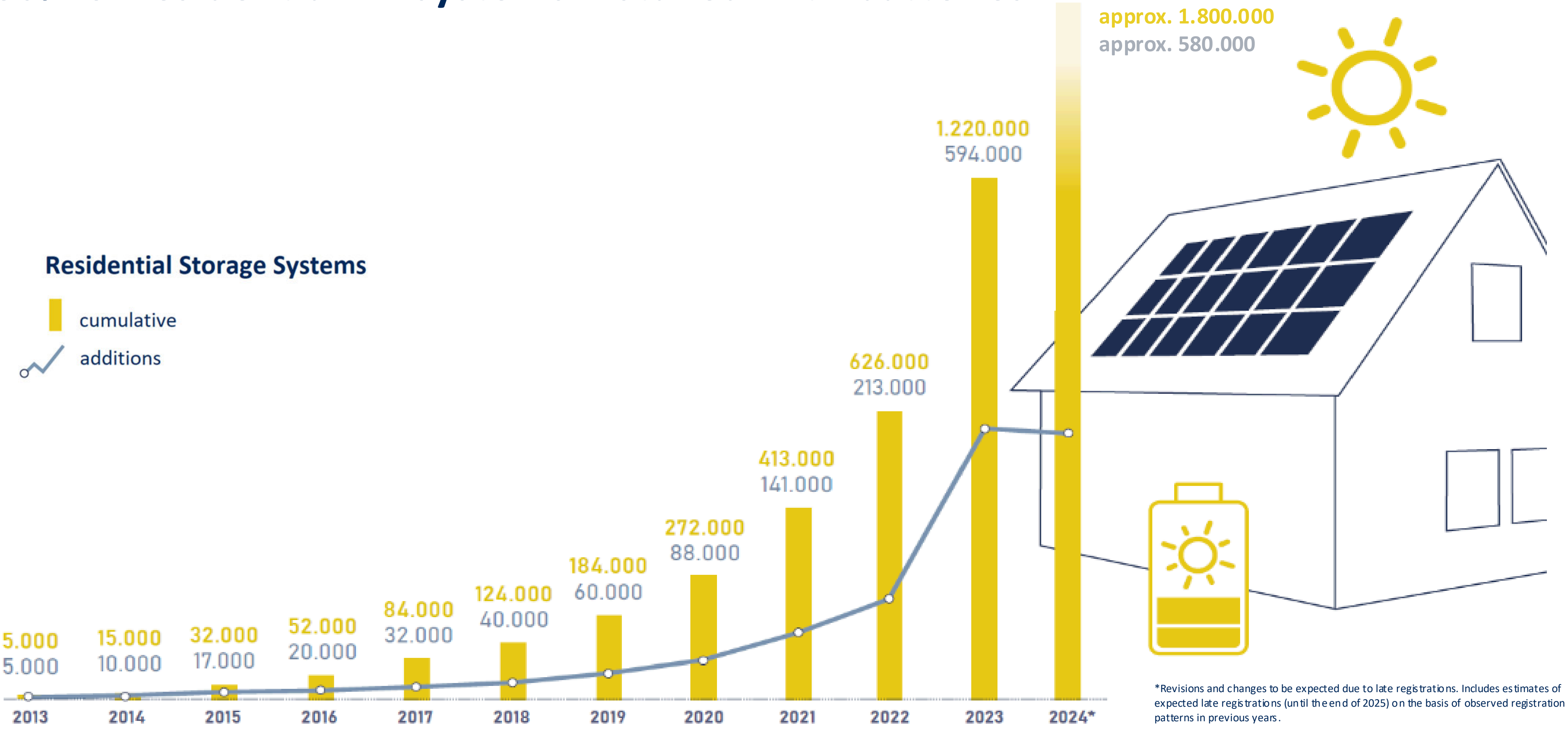


2 million battery storage units installed across all segments

* Revisions to be expected due to delayed reporting. The reported values contain estimates of (late) registrations to be expected until mid Aufust 2026 based on previous registration patterns.
Source: BSW, own estimates based on MaStR as of August, 12th, 2025.

Over 1.92 Mio. households utilize battery storage by 2025Q1

80% of residential PV systems installed with batteries

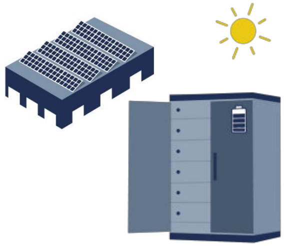


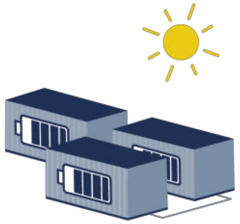
*Revisions and changes to be expected due to late registrations. Includes estimates of expected late registrations (until the end of 2025) on the basis of observed registration patterns in previous years.

Source: BSW-Solar, own calculations based on MaStR as of 01/23/2025.

Battery capacity additions in 2024: 6.2 GWh (+3% over 2023)

19.1 GWh installed cumulatively across 1.83 million batteries at the end of 2024



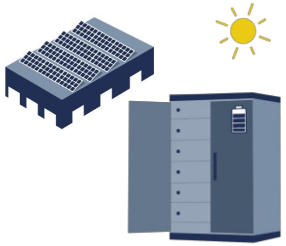


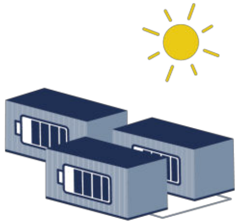
Installed Storage Capacity	Small Storage (≤ 5 kWh)	Residential Storage (5 – 20 kWh)	C & I Storage (20 – 1.000 kWh)	Mass Storage (> 1.000 kWh)
2023 *Including late registrations**	approx. 0.40 GWh	approx. 4.91 GWh	approx. 0.44 GWh	approx. 0.32 GWh
2024 *Including expected late registrations**	**approx. 0.41 GWh** *+3%*	**approx. 4.43 GWh** *-10%*	**approx. 0.54 GWh** *+17%*	**approx. 0.83 GWh** *+155%*

*Revisions and changes to be expected due to late registrations. Includes estimates of expected late registrations (until mid August 2026) on the basis of observed registration patterns in previous years.
Source: BSW-Solar, own calculations based on MaStR as of 08/12/2025.

Battery capacity additions in 2025H1

Over 3.3 GWh partly due to strong mass storage segment with up to 0.9 GWh



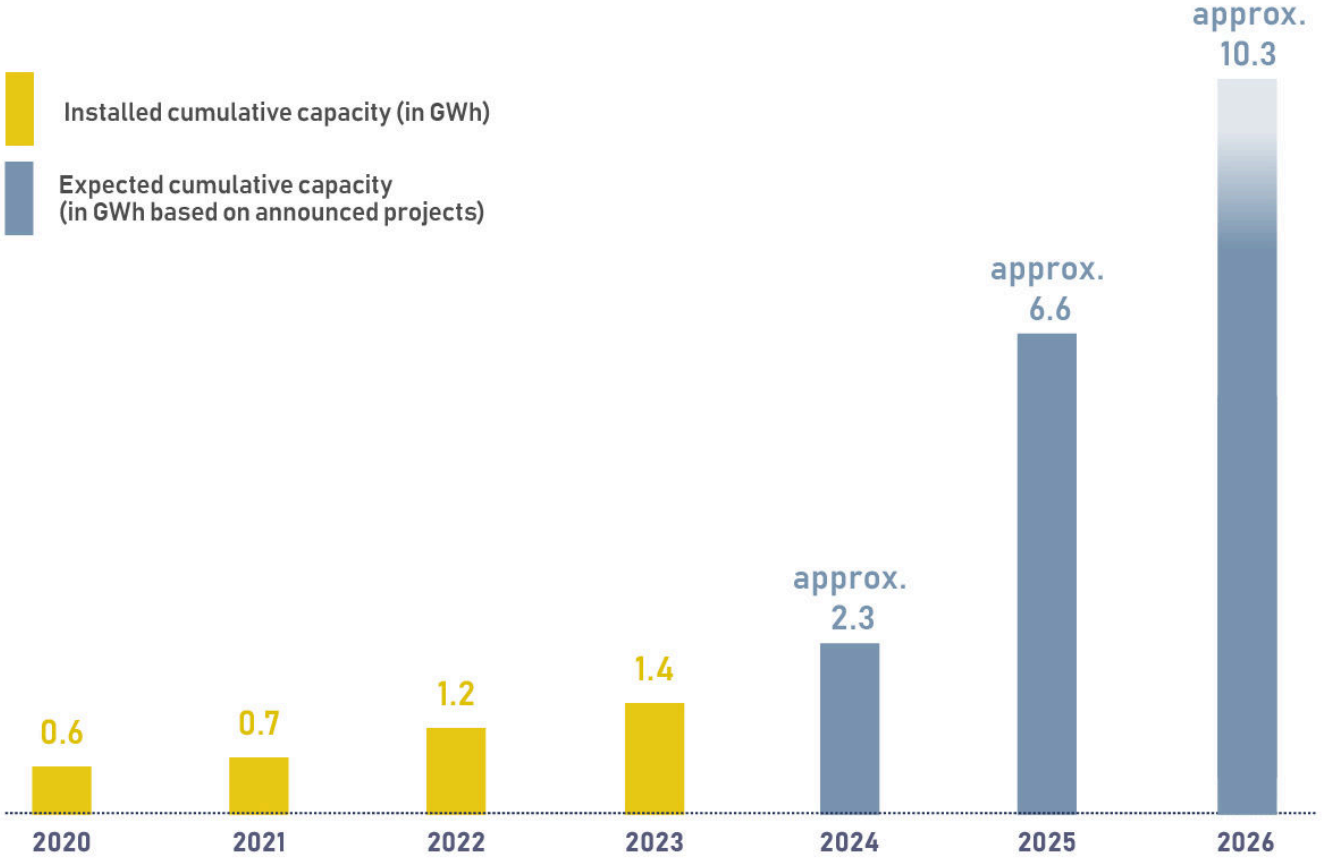


Installed Storage Capacity	**Small Storage** (≤ 5 kWh)	**Residential Storage** (5 – 20 kWh)	**C & I Storage** (20 – 1.000 kWh)	**Mass Storage** (> 1.000 kWh)
2024H1 *Including late registrations**	approx. 0.20 GWh	approx. 2.27 GWh	approx. 0.25 GWh	approx. 0.27 GWh
2025H1 *Including expected late registrations**	**approx. 0.26 GWh** *+30%*	**approx. 1.89 GWh** *-17%*	**approx. 0.31 GWh** *+25%*	**up to 0.90 GWh** *up to 235%*

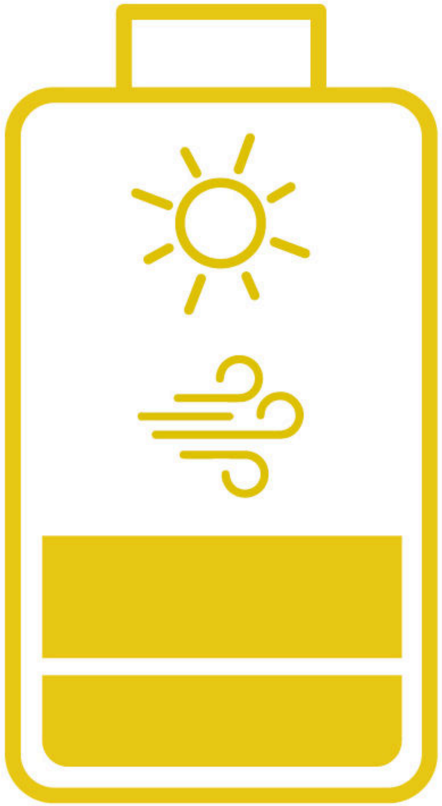
*Revisions and changes to be expected due to late registrations. Includes estimates of expected late registrations (until mid August 2026) on the basis of observed registration patterns in previous years.
Source: BSW-Solar, own calculations based on MaStR as of 08/12/2025.

Mass storage capacity to increase fivefold within two years

Political frameworks need to align: “Dual Usage”, “Solarpaket I”, …



Source: Analysis by Enervis commissioned by BSW-Solar, data as of February 2025



Constant employment of around 120,000 in the German Solar sector in 2024

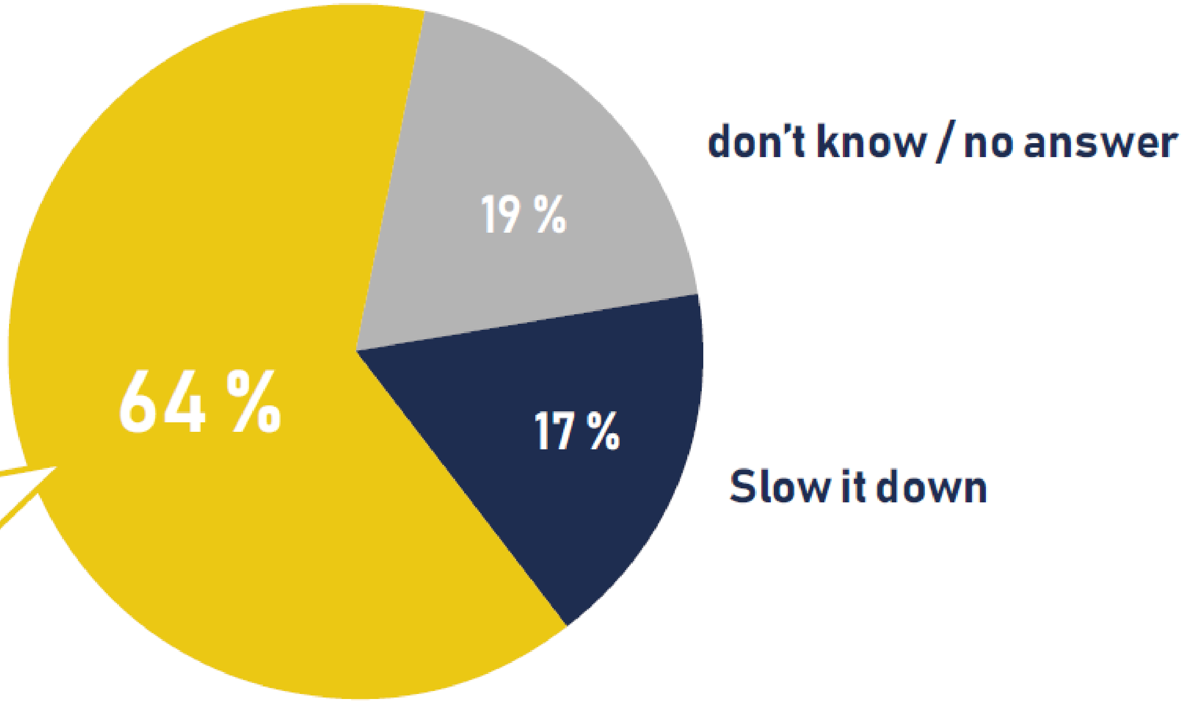
Source: iStock.com/elenabs

Source: EUPD Research, 2025, Estimate in full-time equivalents

Strong public backing

Nearly 2/3 of German population support faster solar rollout

Question: Bundestag elections take place in 2025. How should the next German government handle the expansion of solar power?



Accelerate

Agreement by voting behavior*:
Bündnis 90/Die Grünen: 85 %
SPD: 76 %
CDU/CSU: 67 %
FDP: 64 %

Source: Representative popular survey by YouGov on behalf of BSW-Solar with 2.043 surveyed (11/2024)
*During 2021 Bundestag election
All numbers rounded

New government, new coalition agreement
Selected pros and cons for energy transition

- **Commitment to German and European climate targets**
- **Energy transition & market design**
  - ***new process of monitoring expected electricity demand, the state of security of supply, grid expansion, the expansion of renewable energies, etc.***
  - ***a secure investment framework***, while simultaneously increasing the integration of market-based instruments
- **Energy prices**
  - ambitious goal of permanently reducing electricity prices by at least 5 c/kWh
- **Grids**
  - accelerate roll-out of smart meters and expand dynamic electricity tariff
- **Electromobility**
  - greater support, e.g. purchase incentives and tax breaks
- **Industrial policy**
  - resilience of domestic production while avoiding new dependencies

Katharina Reiche, CDU
Minister of Economic Affairs and Energy
Source: Westenergie

BSW-Solar: 10 Measures to stimulate the economy & strengthen climate protection (1/2)

1. **Boost the economy** through the **solar energy transition** – achieve expansion targets

2. **Storage systems** are becoming a **central element** of a modern energy system – switch on the turbo boost now

3. **Reform the electricity market** and ensure investment incentives in the funding framework

4. Transformation requires **digitalization of the energy system**

5. **Self-consumption** and **direct supply concepts** are the driving force behind the energy transition

BSW-Solar: 10 Measures to stimulate the economy & strengthen climate protection (2/2)

6. **Accelerate approval processes** – reduce bureaucracy

7. **Unleash the heating transition** through solar thermal energy – achieve savings in scarce fuels

8**. Accelerate grid expansion**, utilization and grid connection processes

9. Secure and expand the **high acceptance for solar technology**

10. Enable the **renaissance of the solar industry** in Europe

BSW-Solar represents over 1,000 member companies!

… as well as many installers!

Logos of selected BSW-Solar members

Join us on our path!

Bundesverband Solarwirtschaft e. V. – German Solar Association

Phone: +49 30 2977788 0 · Email: geschaeftsleitung@bsw-solar.de

bsw.li/4bTjsHf

bsw.li/3QYcpom

bsw.li/1JDrtPl

bsw.li/2VsDOS4