

# European Solar & Storage Market Developments in 2024 and Beyond



# Agenda

- ❖ EU-27 : Solar PV Status & Outlook
  - ❖ Yearly Installed PV Capacity
  - ❖ Top 5 EU Markets (2022/2023)
  - ❖ Installed PV Capacity per Capita
  - ❖ EU-27 Key Facts

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- ❖ Italy: Solar PV & Storage Overview
  - ❖ Monthly PV Installations in Italy (2021-2023)
  - ❖ Quarterly PV Installations in 2023 (Segmentwise)
  - ❖ BESS Installations

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- ❖ PV InstallerMonitor 2022/2023 Italy
  - ❖ Survey Background
  - ❖ Sample Group
  - ❖ Procurement Channels
  - ❖ Storage Solutions

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  - ❖ Storage Solutions



A low-angle photograph of a worker on a roof. The worker is wearing a blue cap, a red and blue jacket, and dark pants, and is standing on a metal scaffolding structure. The roof is covered with large, rectangular solar panels that have a grid pattern. The sky is clear and blue, with the sun in the upper right corner, creating a bright lens flare. A dark blue rounded rectangle is overlaid on the left side of the image, containing the text 'About EUPD Research' in white.

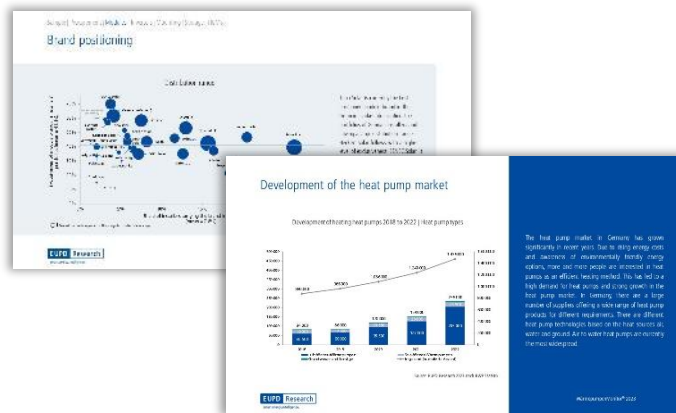
## About EUPD Research

# EUPD Research | Portfolio

## EUPD Research

### Market Research

- Market analyses
- Competition analyses
- Product analyses
- Price analyses
- Brand analyses



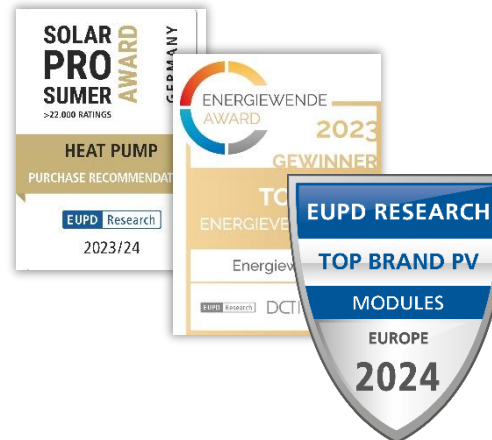
## EUPD Research



## EUPD Cert

### Certification

- Top Brand
- Customer Satisfaction Seal
- Energy Transition Award
- SolarProsumerAward
- Top Brand PV Installers



## EUPD Consult

### Exclusive Consulting

- Within the scope of strategic consulting projects, we focus on the review, further development or redevelopment of the company's orientation, we rethink concepts, measures or the positioning within the competitive environment and shape growth paths and business models
- Our future-oriented consulting services analyze both the corporate environment and the fundamental objectives of the client

# EUPD Research | References (Extract)



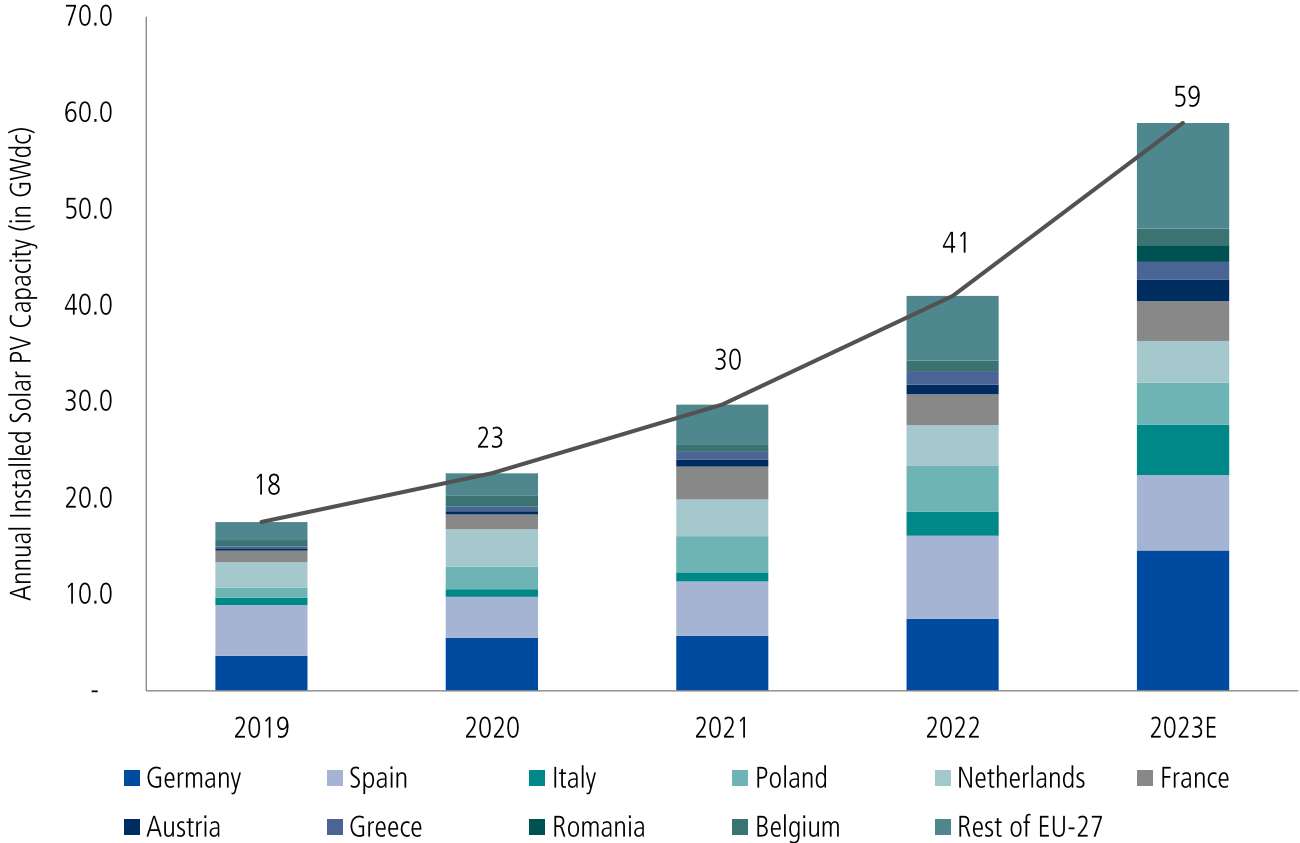


A photograph showing a worker in a blue cap and jacket standing on a metal scaffolding or walkway on a roof. The roof is covered with rows of blue solar panels. The sun is shining brightly in the upper right corner, creating a lens flare effect. A blue semi-transparent banner is overlaid on the left side of the image.

## EU-27 : Solar PV Status and Outlook

# Annual Installed Solar PV Capacity

EU-27 | 2019-2023E | in GWdc

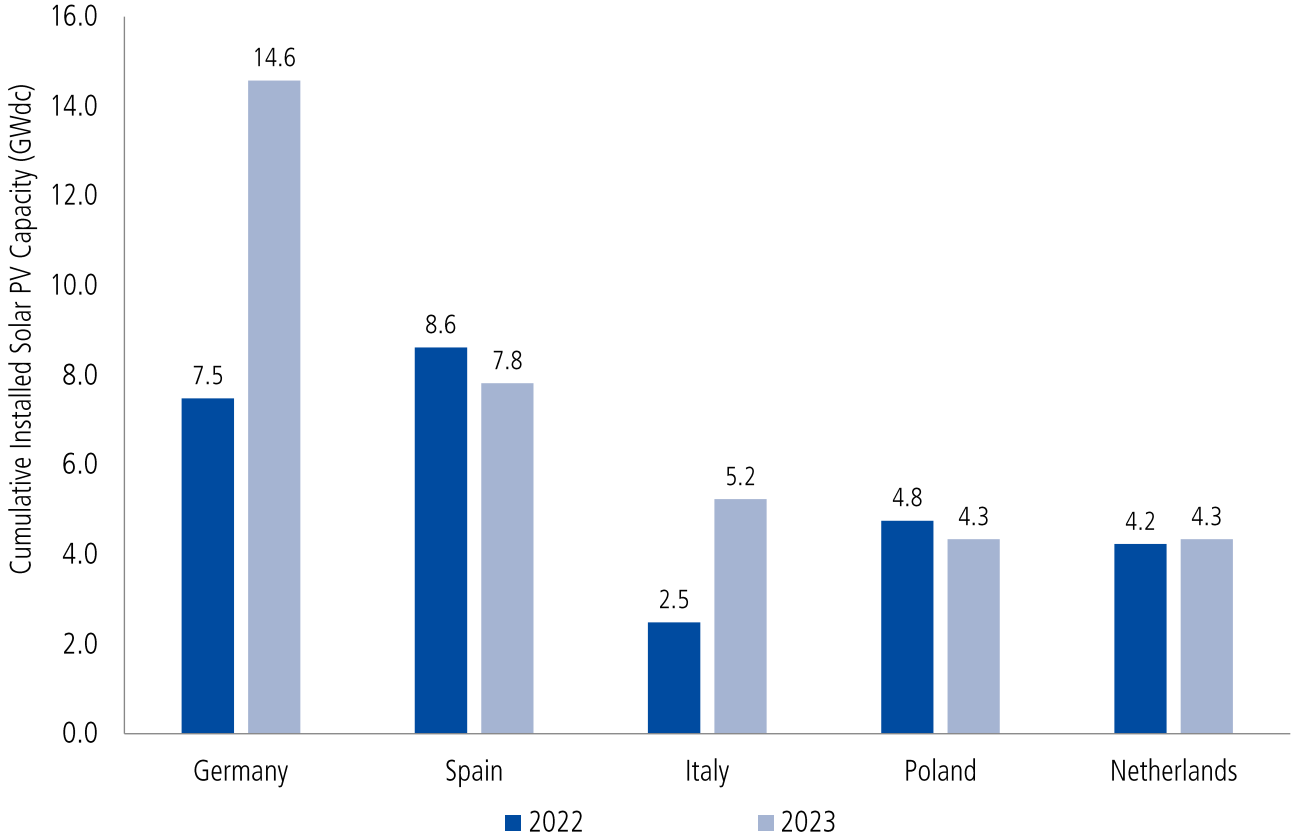


EU-27 Showed a 44% YoY Surge in Solar PV Capacity in 2023 and Added around 59 GWdc

- 2023 was another record year for the EU-27 PV installations with the market installing a total of around 59 GWdc, leading to a YoY growth of 44%. This record number can mainly be attributed to comparatively higher energy prices, and the EU member states to reach their climate targets.
- Germany followed by Spain and Italy were the top 3 PV markets in the European Union in 2023 with total newly installed capacity of ~27.6 GWdc in just these three markets (47% of the EU market in 2023).
- Germany was the largest PV market in Europe installing around 14.6 GWdc in 2023.
- In January 2024 alone, Germany installed 1,248 MWdc of PV, which shows that 2024 could be another record year for Germany.

# Annual Installed Solar PV Capacity

2022-2023 | in GWdc



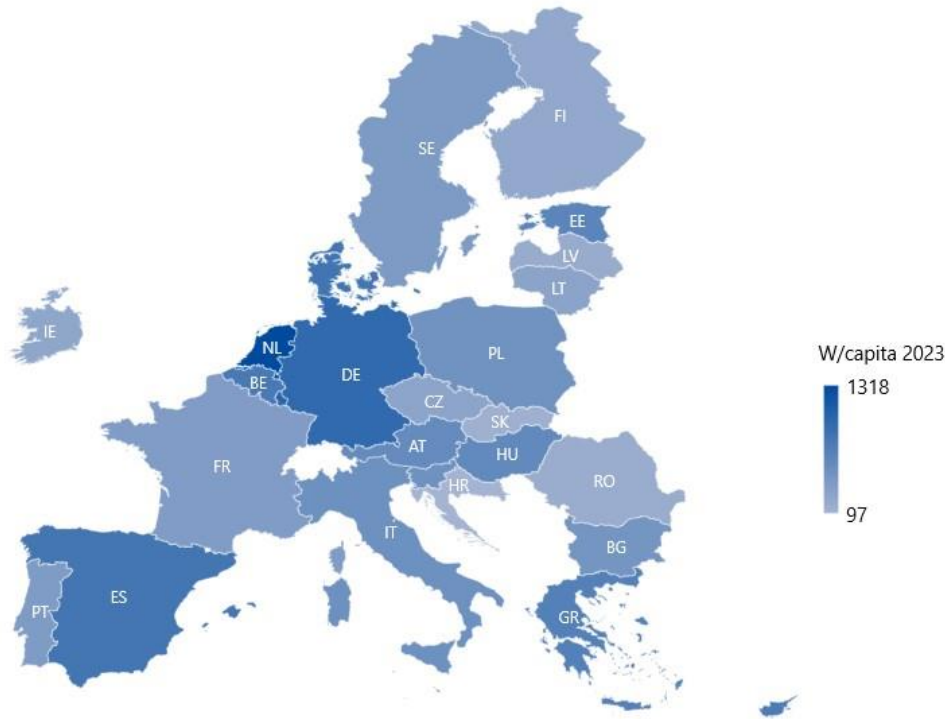
Top Five EU Member States Set Added 62% of the Entire New PV Capacity Installed in the EU in 2023

- In 2023 Germany increased its solar PV capacity by 14.6 GWdc in 2023, representing a significant year-over-year increase of 95%.
- An even more remarkable shift can be observed in Italy, where the addition of about 5.2 GWdc of PV capacity in 2023 reflects a Y-o-Y increase of 111%.
- The top five leading countries, specifically Germany, Spain, Italy, Poland and the Netherlands have installed ~36 GWdc in 2023. This accounts for a substantial 62% of the total capacity in 2023.

Source: EUPD Research GET Matrix© 2023

# Installed Solar PV Capacity per Capita

EU-27 Map | 2023 Watt per capita



## Netherlands Tops EU-27 in PV Capacity Per Capita

- In 2023, the Netherlands boasted the highest PV capacity per capita in the EU-27 states, standing at 1,318 watts. Germany, Luxembourg, and Spain followed closely in the rankings.
- Although Italy is one of the largest PV markets in the EU, the per capita PV performance is mediocre a around 510 watts per person, and ranked 14 among the EU member states.

Source: EUPD Research GET Matrix© 2023

# Key Facts: PV Market EU-27



~59 GWdc

Installed PV capacity in the EU by the end of 2023

Top 5 – GW PV markets (2023)

- Germany
- Spain
- Italy
- Poland
- Netherlands

2024-2025

Based on EUPD realistic scenarios, the EU will install ~150 GW of new PV in the next two years

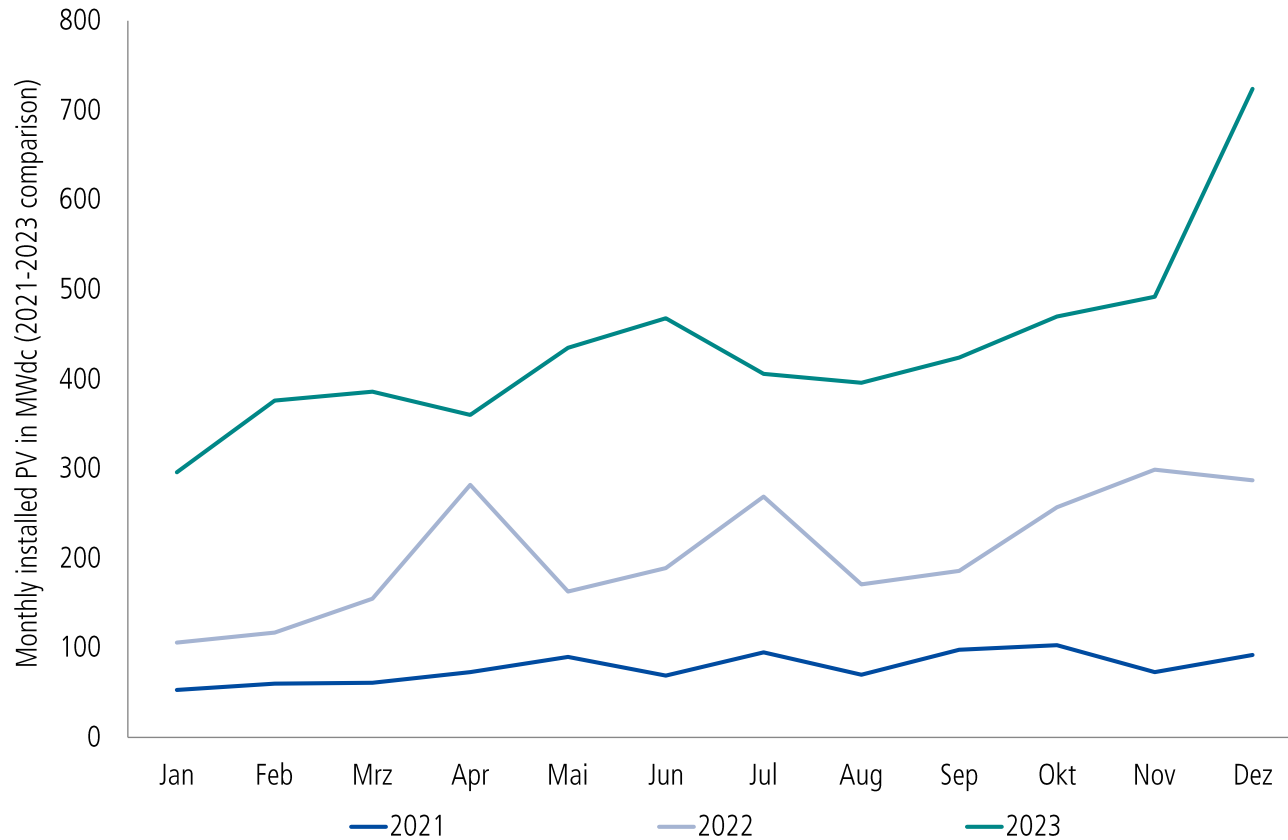




## Italy: Solar PV & Storage Overview

# Monthly Installed Solar PV in Italy

2021-2023 | in GWdc



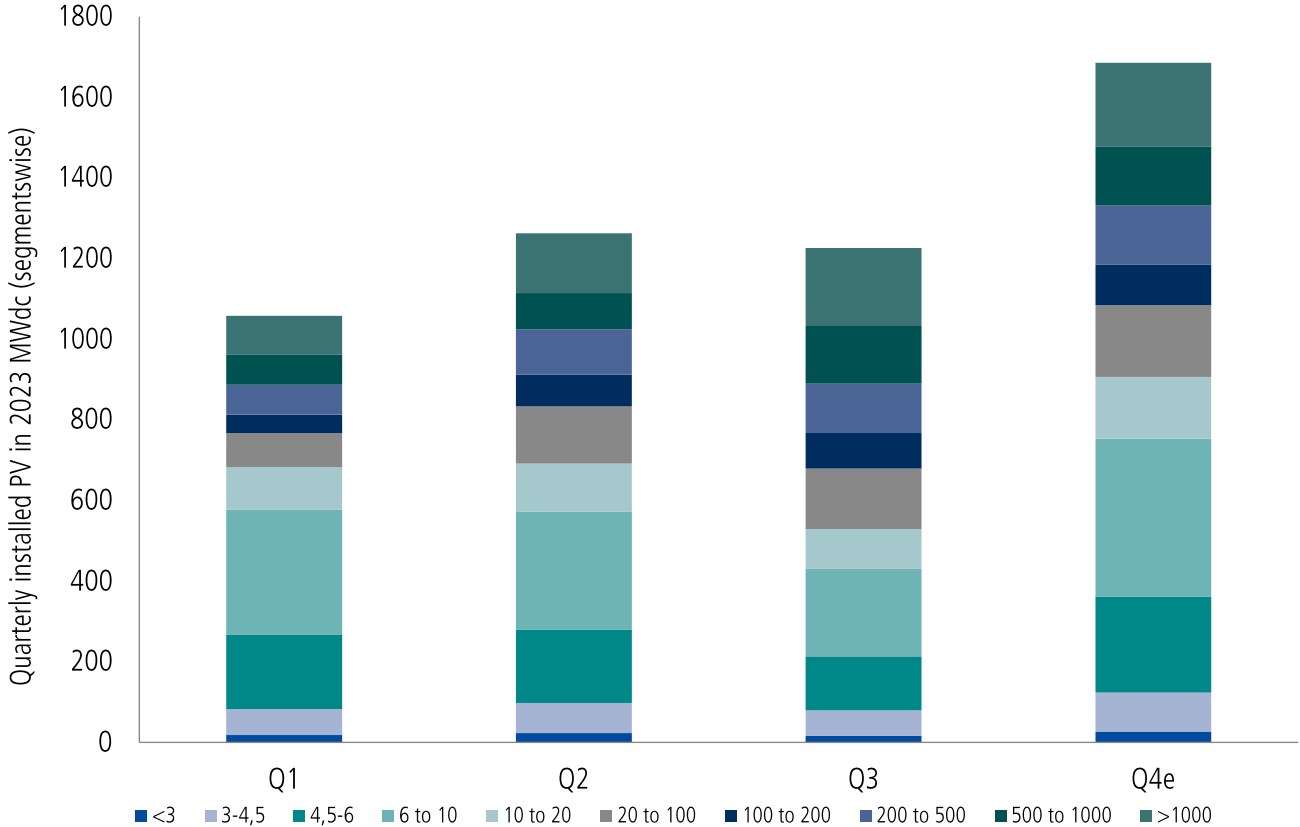
Italy Installed 5.2 GWdc in 2023

- In 2023 Italy registered a newly installed PV capacity of 5,233 MWdc, up from 2,481 MWdc in 2022
- In 2023 Italy installed an average of ~436 MW of solar PV every month

Source: EUPD Research GET Matrix© 2023

# Quarterly Installed Solar PV in Italy

2023 Segmentwise | GWdc

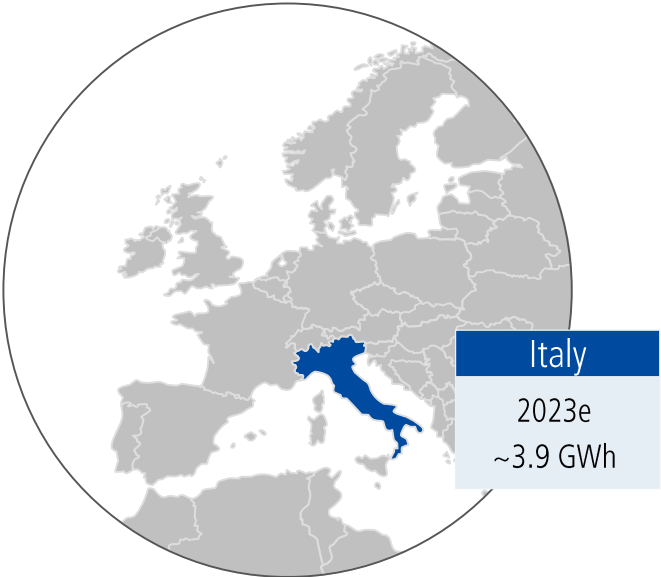
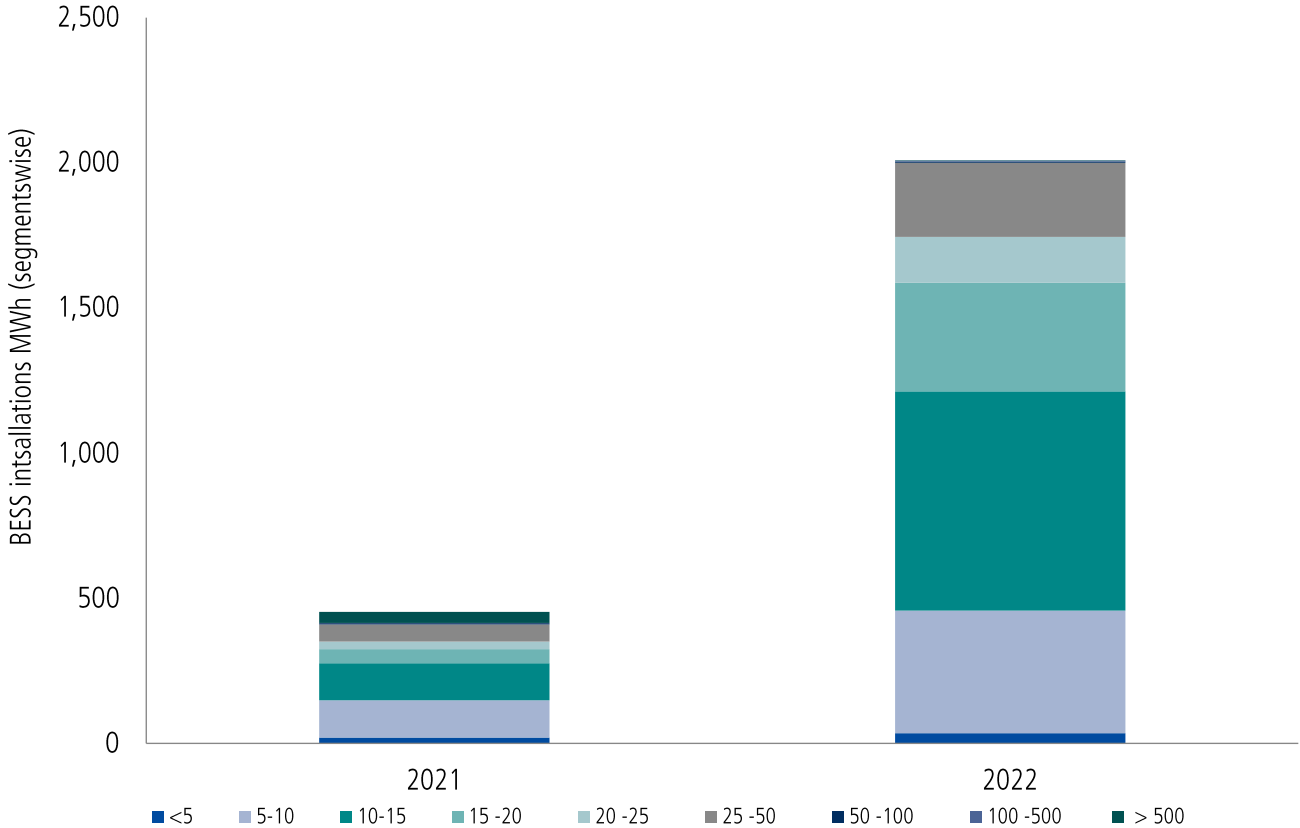


The Lion’s Share of PV Installations in 2023 Focussed on Systems up to 20 kW (54%)

- In 2023 Italy has installed an average of 1.3 GW of PV in each quarter
- The PV systems up to 20 kW formed the backbone of PV installations in 2023

Source: EUPD Research GET Matrix© 2023

# BESS Installations (MWh) in Italy



Italy is estimated to have installed ~3.9 GWh of BESS in 2023 across all segments  
 A lion's share of this capacity (~3.6 GWh) is estimated to be systems <20 kWh



A low-angle photograph of a worker on a roof installing solar panels. The worker is wearing a blue cap and a blue and red jacket, and is seen from behind, walking along a metal walkway. The roof is covered with rows of blue solar panels. The sky is clear blue with a bright sun in the upper right corner, creating a lens flare effect. A dark blue rounded rectangle is overlaid on the left side of the image, containing the text.

## PV InstallerMonitor 2022/2023 Italy



# Research design – Focus country

The EUPD Research Global PV Installer Monitor 2022/2023<sup>©</sup> is a comprehensive survey. The sample was drawn from EUPD Research's extensive address database of PV installers. This database is constantly refreshed and updated.

This year, all questions of the survey related to systems that were installed as rooftop (building-applied) or building-integrated solutions. Ground-mounted PV systems are not part of the survey.

EUPD Research reached a total number of 100 interviews in the Italian market.

The survey was conducted from October 2022 until February 2023.



n = number of installers surveyed

# PV InstallerMonitor© 2022/2023

## The Content

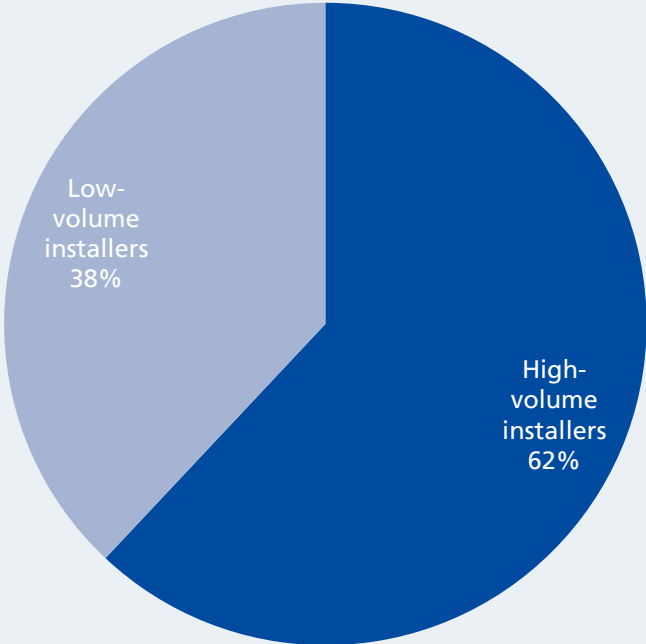
- **General Introduction**
- **Market Data:**  
PV market information for the country market
- **Sample Description:**  
Description of surveyed installers and head groups
- **Modules:**  
Procurement, brand awareness, avoided brands, market penetration, duration of brands in portfolio, Net Promoter Score, delivery times
- **Inverters:**  
Procurement, brand awareness, market penetration, Net Promoter Score
- **Mounting system manufacturers:**  
Procurement, brand awareness, market penetration, Net Promoter Score
- **Wholesalers:**  
Procurement channels for PV components, positioning of wholesalers, Net Promoter Score
- **Storage Solutions:**  
Procurement, brand awareness, avoided brands, market penetration, duration of brands in portfolio, Net Promoter Score, delivery times
- **HEMS:**  
Brand awareness, market penetration, Net Promoter Score



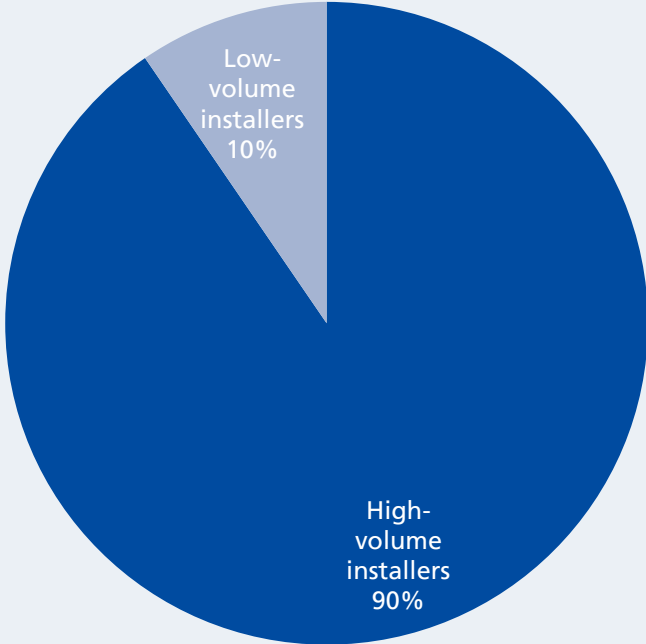
# Sample description

## Size

Number of companies



Installed capacity 2022



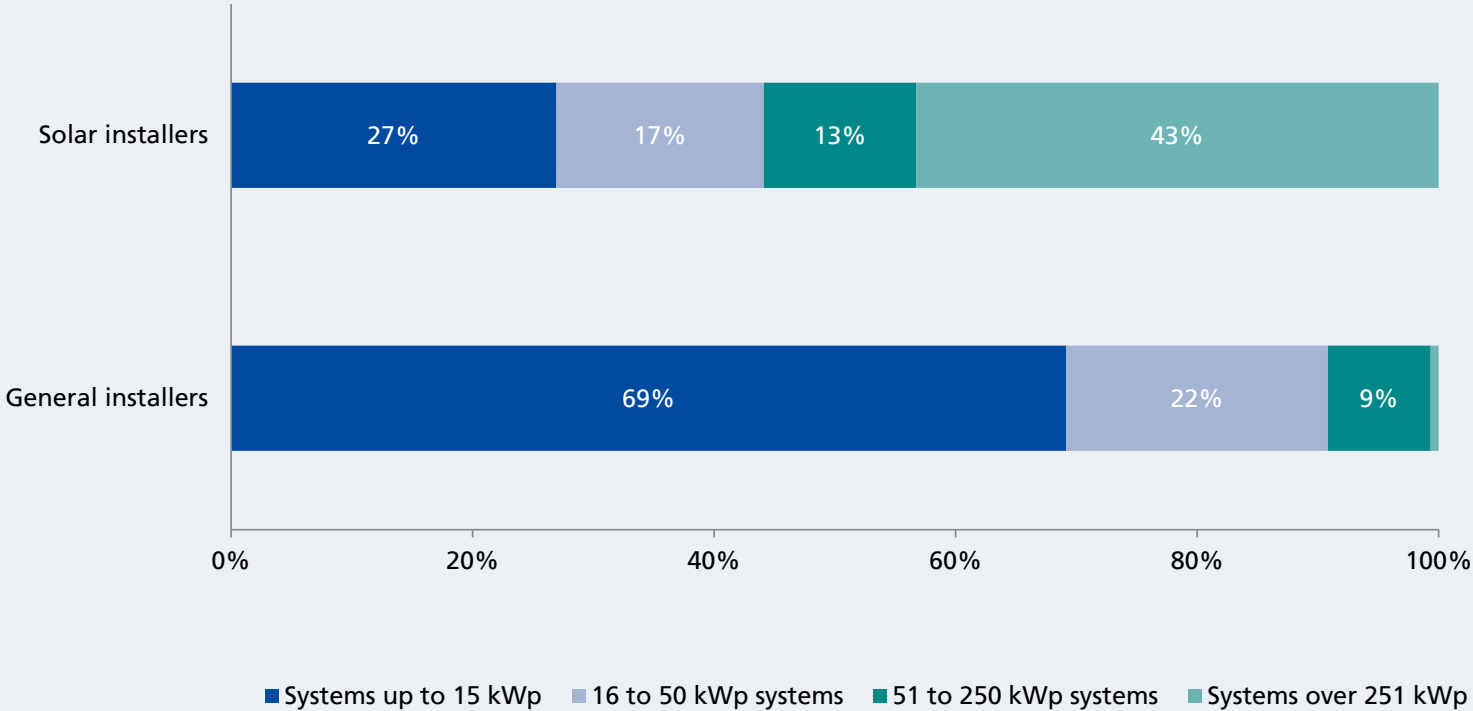
62 percent of respondents are high-volume installers who installed more than 500 kWp in 2022.

High-volume installers contributed 90 percent of the installed capacity captured in the survey.

n=100  
Source: EUPD Research 2023

# Sample description

Segmental focus | Grouped by trade



General installers focus on installations of residential systems up to 15 kWp.

It should be noted that this year, all questions of the survey referred to systems that were installed as rooftop or building-integrated solutions, and that the smallest system category was increased to 15 kWp as compared to 10 kWp in the previous reports.

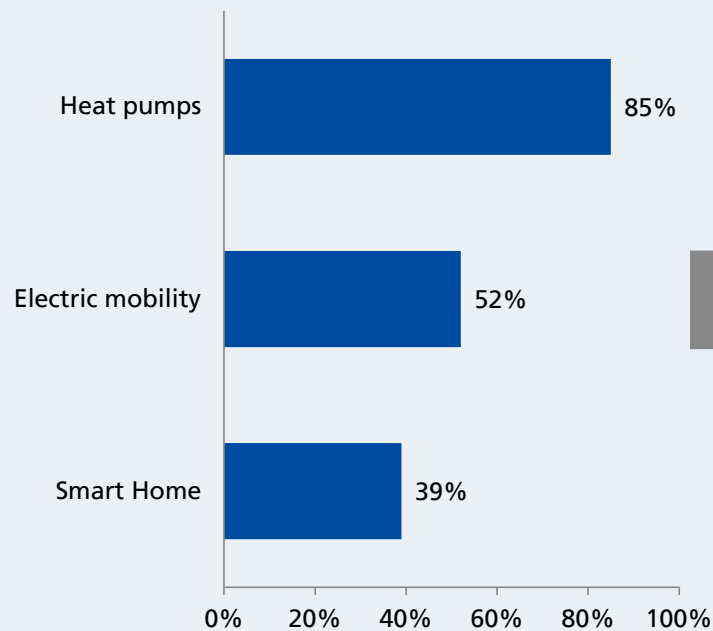
n=100

Source: EUPD Research 2023

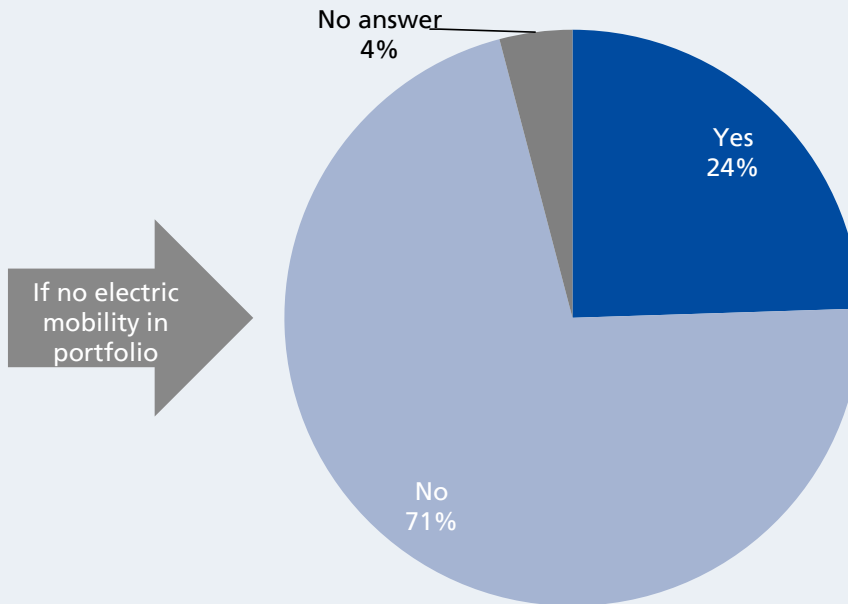
# Sample description

## Additional applications

In addition to photovoltaic, do you also install products in the following sectors? (multiple answers, n=100)



Do you plan to include electric mobility solutions in your portfolio by the end of 2023? (n=49)



85 percent of the respondents install heat pumps in addition to photovoltaics.

52 percent of Italian installers offer solutions for electric mobility. Of the installers that do not currently offer electric mobility solutions, 25 percent plan to add them to their portfolio by the end of 2023.

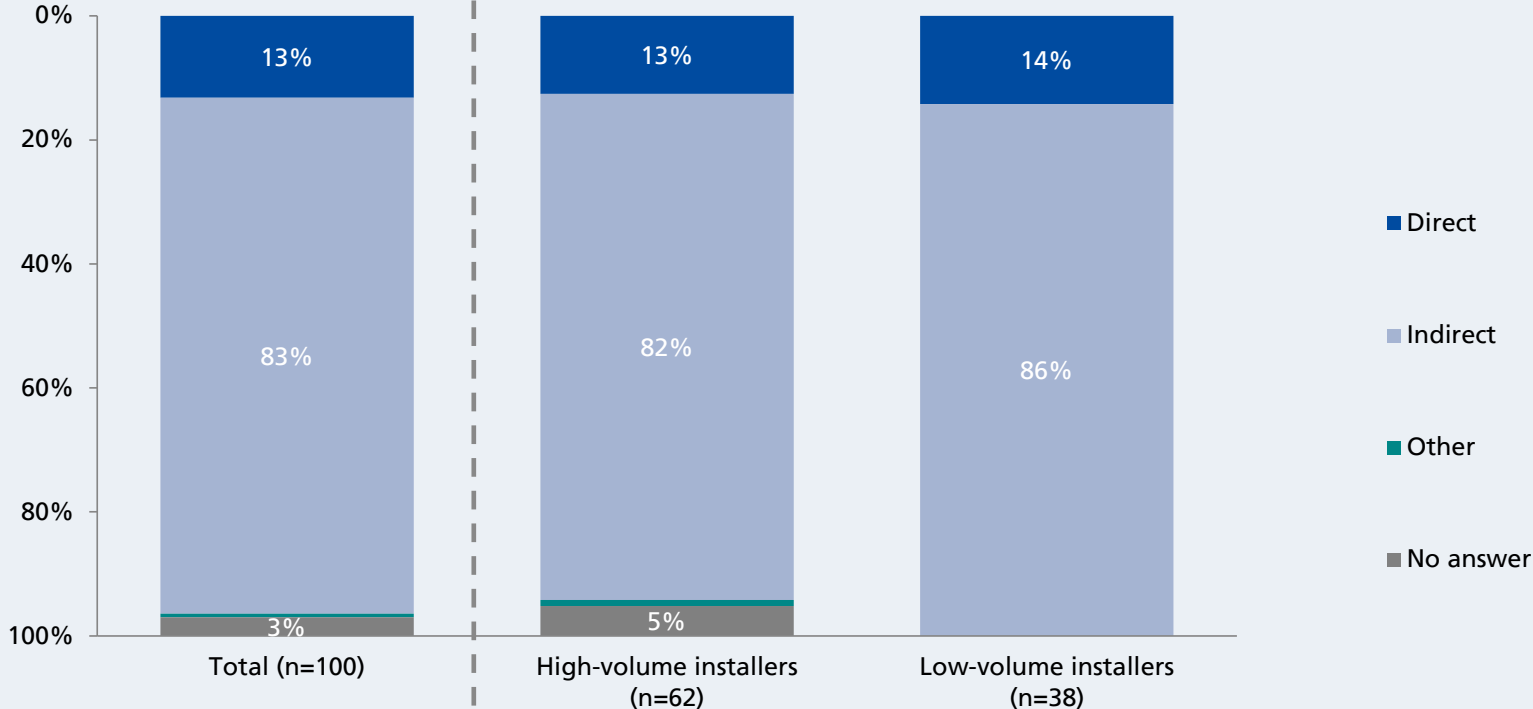
39 percent of the installers offer smart home solutions.

Source: EUPD Research 2023



# Sourcing of PV modules

Distribution channels | Not weighted by installed capacity



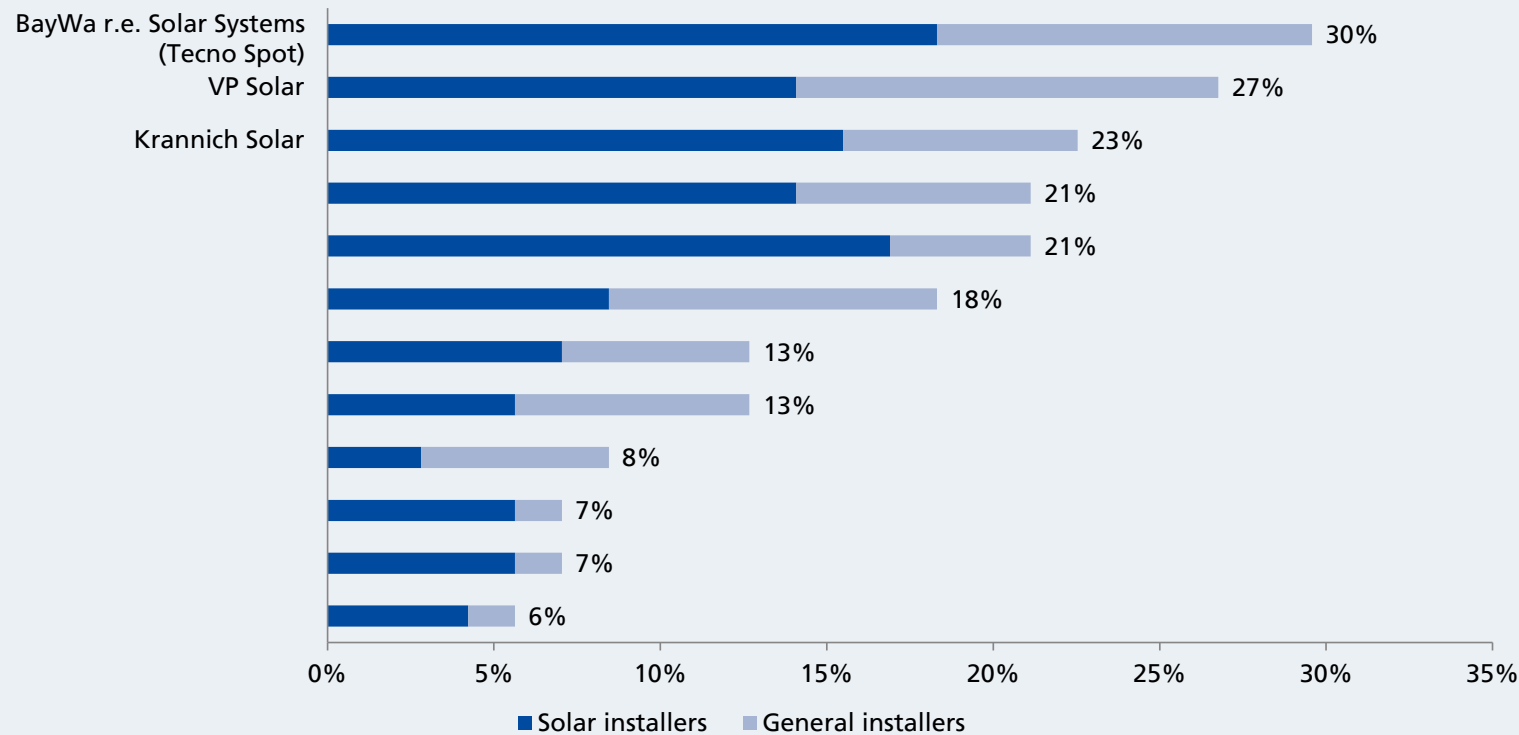
This graph shows the distribution of procurement channels not weighted by installed capacity.

On average, the survey participants procure 83 percent of their PV modules via wholesalers.

Source: EUPD Research 2023

# Distribution width of wholesalers – Storage systems

Surveyed installers purchase storage systems from... | Grouped by trade



BayWa r.e., VP Solar and Krannich Solar are the top three wholesalers for storage systems in Italy.

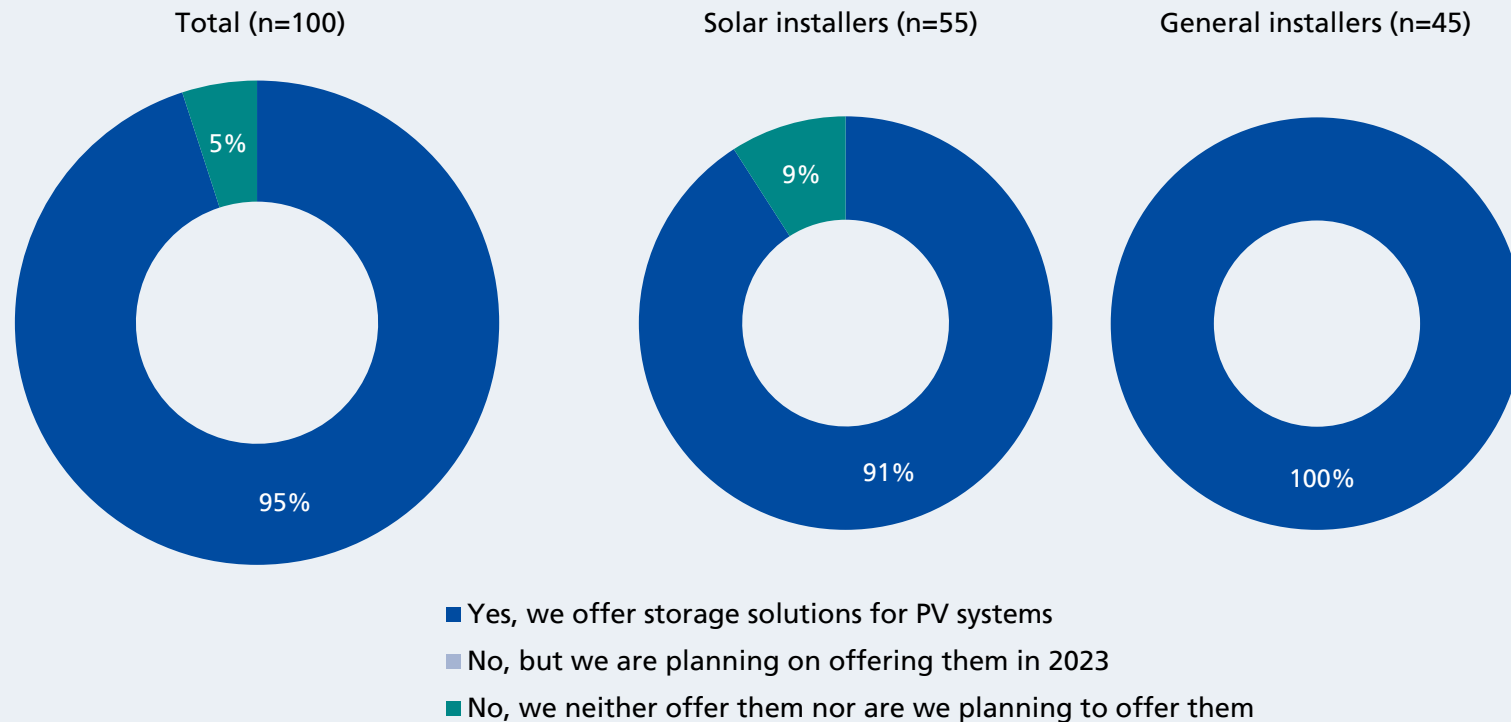
BayWa r.e. is the leading wholesaler among both solar and general installers.

n=71

Source: EUPD Research 2023

# Installers' portfolios 2022

Do you offer storage solutions? | Total & grouped by trade



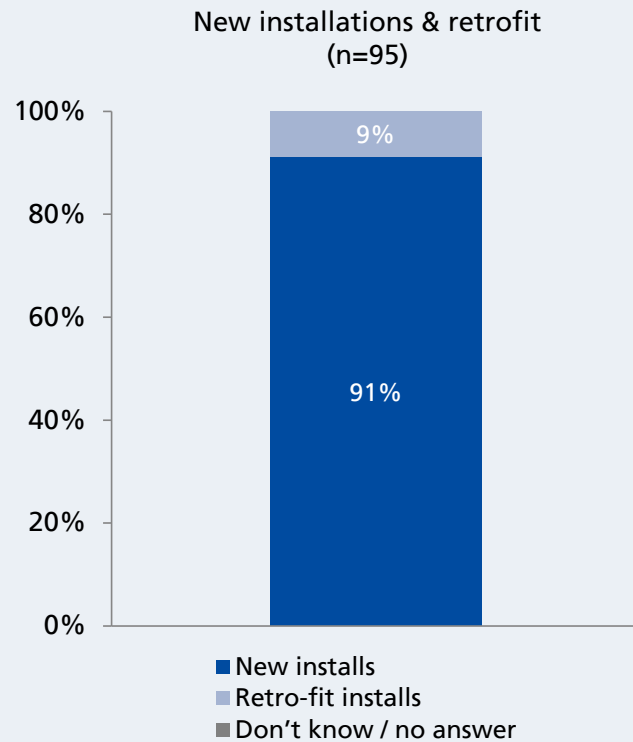
In 2022, 95 percent of the surveyed participants in Italy offer storage solutions.

All general installers interviewed in this survey report installing storage solutions for PV systems. The share of solar installers who offer storage systems shrunk slightly compared to last year. Nine percent of the solar installers say they are not planning to offer storage systems.

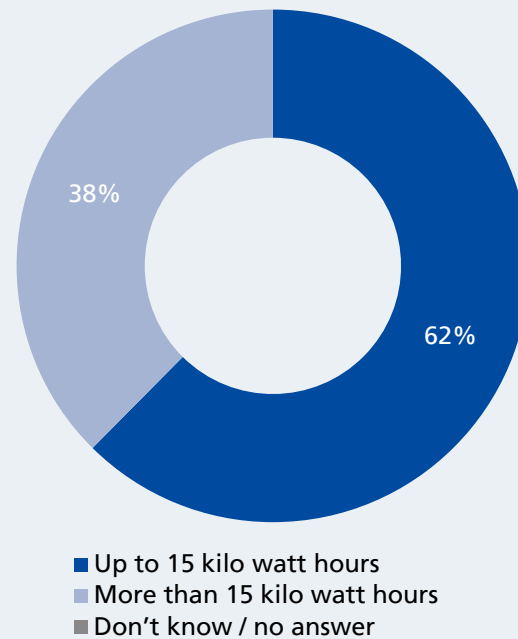
Source: EUPD Research 2023

# Installed storage systems

## Installation types & system sizes



What percentage of the storage solutions you installed in 2022 will be divided into the following size classes? (n=95)



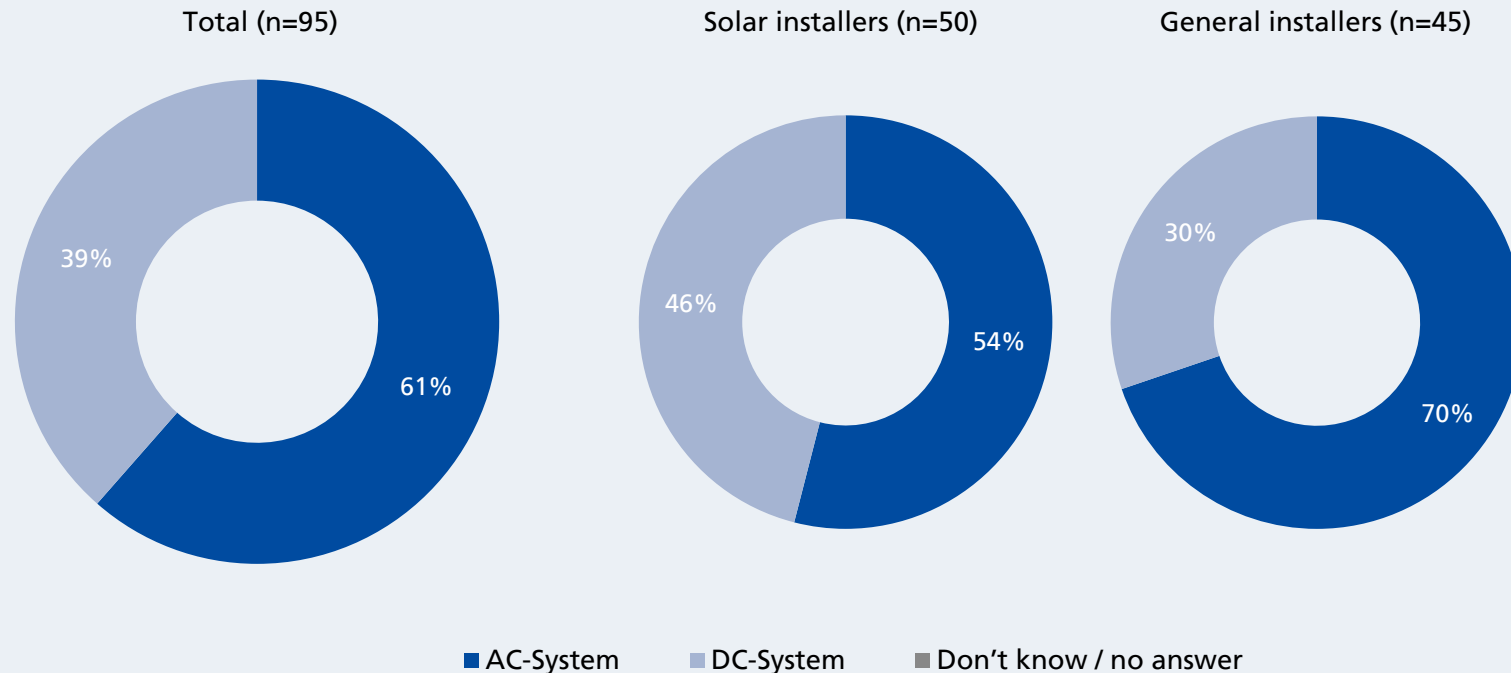
Installers report that, on average, 91 percent of storage systems are installed along with a new PV system, and nine percent are retrofit systems.

62 percent of the storage systems installed by the surveyed installers in 2022 have a capacity of up to 15 kWh.

Source: EUPD Research 2023

# Installed storage systems

Shares of installed AC-systems and DC-systems | Total & grouped by trade

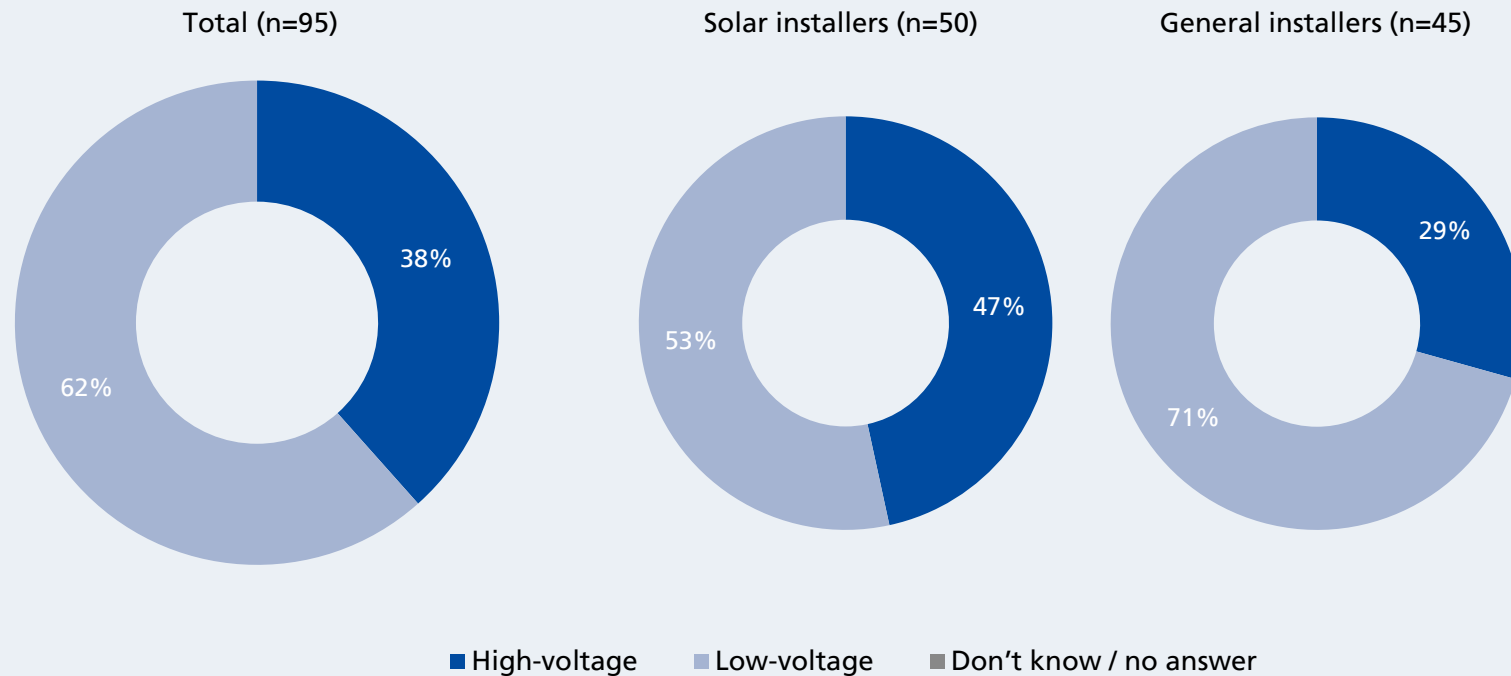


For 2022, the surveyed installers indicate that AC-systems accounted for an average of 61 percent of installations, while 39 percent were DC-systems. The share of AC-systems in all installed storage systems is higher in the group of general installers.

Source: EUPD Research 2023

# Installed storage systems

Shares of high-voltage and low-voltage systems | Total & grouped by trade



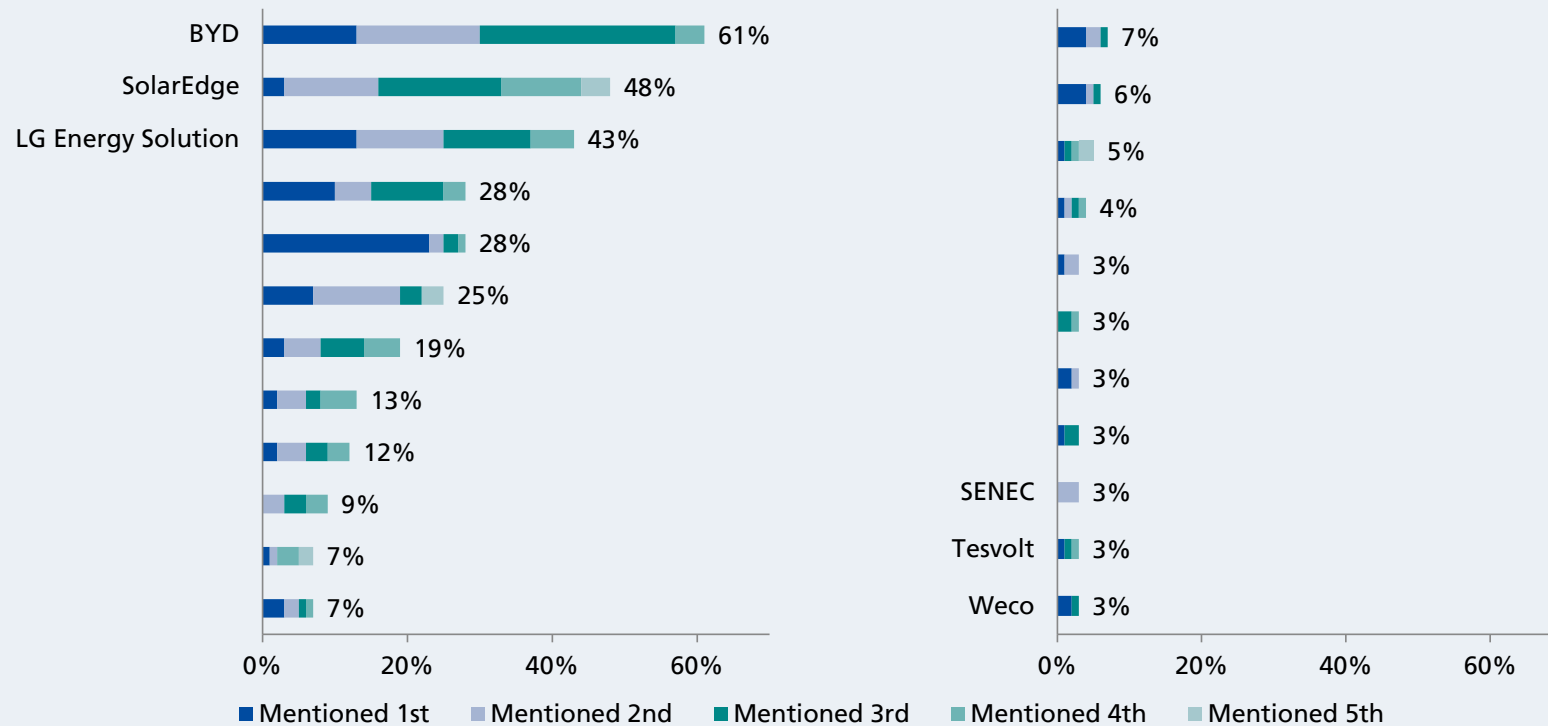
On average, 62 percent of storage systems installed in 2022 are low-voltage systems. Both solar and general installers indicated that the majority of storage systems they installed in 2022 were low-voltage systems.

Source: EUPD Research 2023



# Unaided brand awareness

Unaided brand awareness



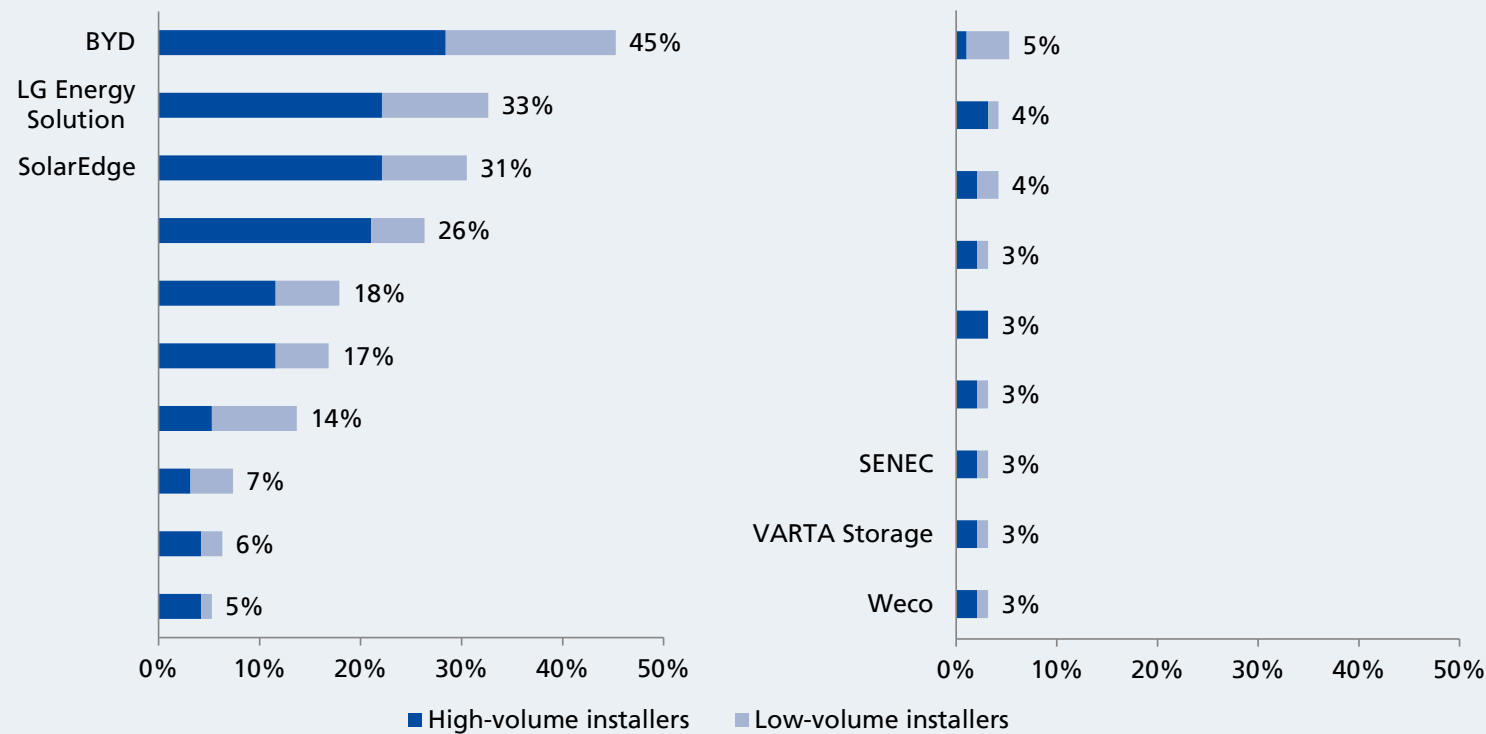
In 2022, BYD remains the best-known storage manufacturer among the PV installers in Italy. BYD increased its brand awareness by four percentage points compared to last year. SolarEdge and LG Energy Solution follow in second and third place.

\* This manufacturer does not offer its own storage system.

n=100  
Source: EUPD Research 2023

# Distribution width of storage systems

Storage systems in installers' portfolios | Grouped by size



BYD is the leading storage brand among both high-volume and low-volume installers.

n=95

Source: EUPD Research 2023

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