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WHITE PAPER

INSIGHTS INTO THE PV MODULE AND INVERTER MARKET IN ITALY

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INSIGHTS INTO THE PV MODULE AND INVERTER MARKET IN ITALY

Introduction

Survey & Methodology

The PV InstallerMonitor© presents the results of a comprehensive empirical survey with a survey group of PV installation companies. All questions of the survey refer to systems that were installed as building-applied (rooftop) or building-integrated solutions.

EUPD Research reached a total number of 150 interviews in the Italian market. Wholesalers and brands are depicted if they were named at least n=5. As only a limited number of big project developers exist and they might not have participated in the survey, the residential segment is overrepresented and the large-scale segment is underrepresented in the sample.

The research methodology used consists of a mainly quantitative CATI survey, conducted through computer-assisted telephone interviews by an external service provider. Additionally, around seven percent of the sample participated through a non-assisted online survey. The questionnaire design includes both open and closed questions. This methodology offers several advantages: it ensures efficiency by enabling rapid data collection and minimizing interviewer influence, such as gestures or facial expressions. Furthermore, it allows for a standardized and consistent interview process.

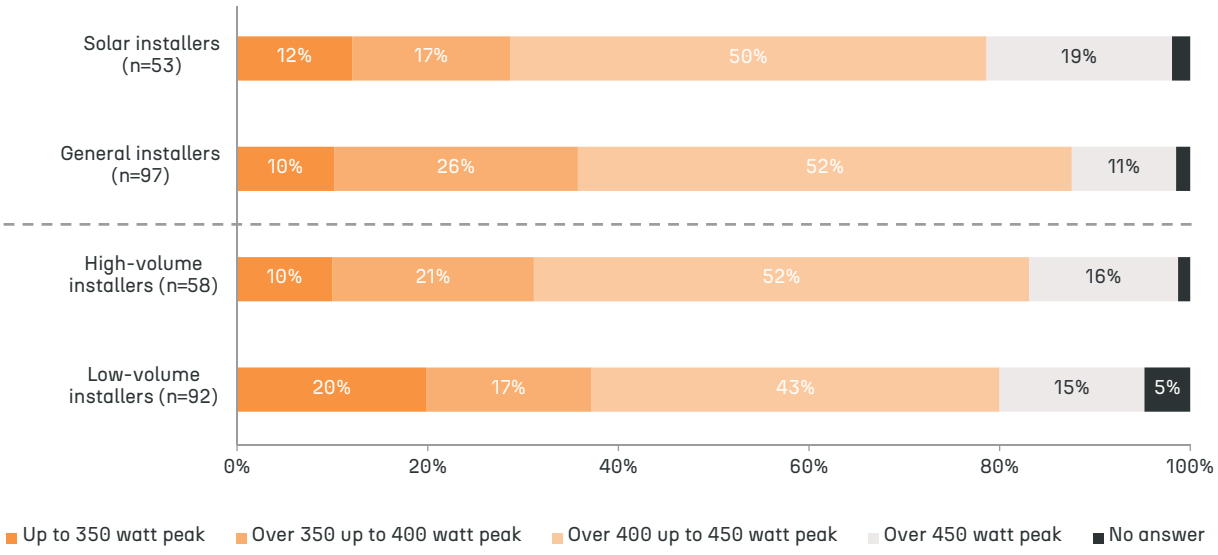
SAMPLE & COMPONENT FEATURES

Head Groups, Business Volumes & Turnover

Nearly two-thirds of surveyed installers are generalists operating in multiple fields, including solar installations. However, specialized solar companies account for more than half of the total installed PV capacity. Low-volume installers (500 kWp or less of total installed capacity) represent slightly over 60 percent of surveyed companies. Despite this, nearly 90 percent of the PV capacity in the sample comes from high-volume installers. In terms of revenue, 45 percent generate over 70 percent of their turnover from PV-related activities, while 17 percent rely on non-PV business for at least 80 percent, aligning with the high presence of general installers. Installation focus varies by company size and specialization. The largest installer in the sample, a high-volume, non-specialized company, installed 34 MWp in the rooftop segment. Rooftop and building-applied PV systems dominate, making up 83 percent of installations, while building-integrated solutions account for 14 percent.

Component & System Features: Modules & Inverters

System size distribution follows a clear pattern. PV systems up to 15 kWp represent more than half of installed capacity across all groups, particularly for low-volume installers, where they account for 76 percent. In contrast, solar and high-volume installers focus more on systems between 51 and 250 kWp. The preference for high-output PV modules has increased significantly. Among solar and high-volume installers, modules exceeding 400 watt peak now represent 58 to 69 percent of installations, more than doubling from the previous year, when the share ranged from 25 to 71 percent.

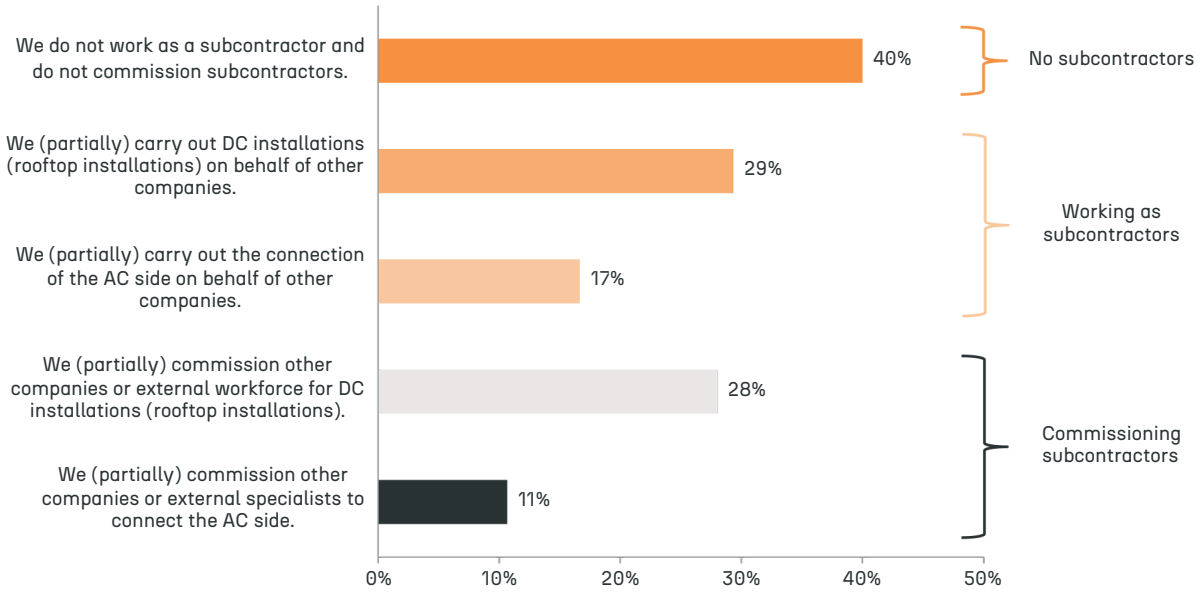


Module performance classes in watt peak | Grouped by size and trade | Source: EUPD Research 2024

Regarding inverters, 1-phase models remain the most frequently installed across all company types. However, solar and high-volume installers use more 3-phase inverters, at an average rate of 33 percent.

Outsourcing & Portfolio Management

Subcontracting practices vary. While 40 percent of installers neither work as subcontractors nor hire them, almost half carry out installations for third parties. Just under 40 percent outsource parts of their installation work to other companies. Beyond PV systems, installers increasingly offer additional green technologies. Electric mobility is the most common, with nine out of ten companies installing EV charging stations. Nearly half also provide Smart Home solutions. When expanding their product offerings, most installers source new brands through wholesalers or distributors, while some work directly with manufacturers. Nearly 80 percent are open to adding new brands, whereas 21 percent have no plans to expand within the next six months.



How does your company work in relation to subcontractors and/or as a subcontractor itself when installing PV systems? | Source: EUPD Research 2024

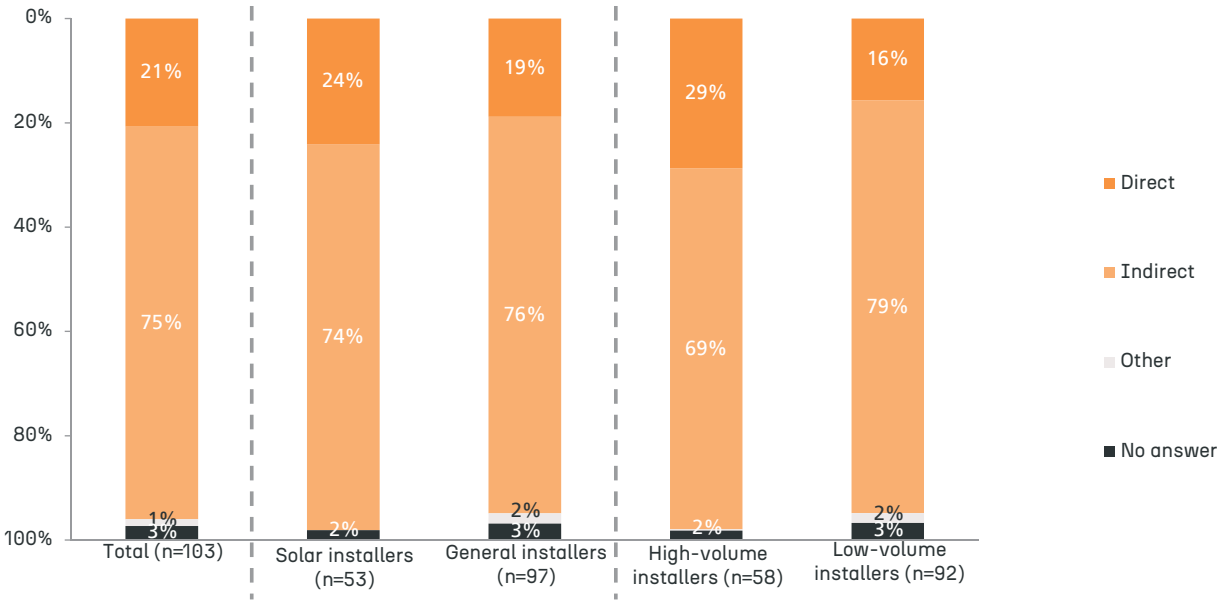
What the Installers Say

When asked to openly express their view regarding the future developments of the market and their needs, installers emphasize the need for more powerful inverters that integrate seamlessly with storage systems and offer improved long-term performance. They also call for smaller and more durable PV modules, making transportation and installation easier. The demand for bifacial and high-power modules is expected to rise, particularly for industrial and commercial installations. Faster material delivery, better customer service, and clearer technical documentation are also key concerns. Additionally, streamlined regulations are needed to fully unlock the potential of storage systems.

PROCUREMENT

PV Modules | Inventory Management & Procurement Channels

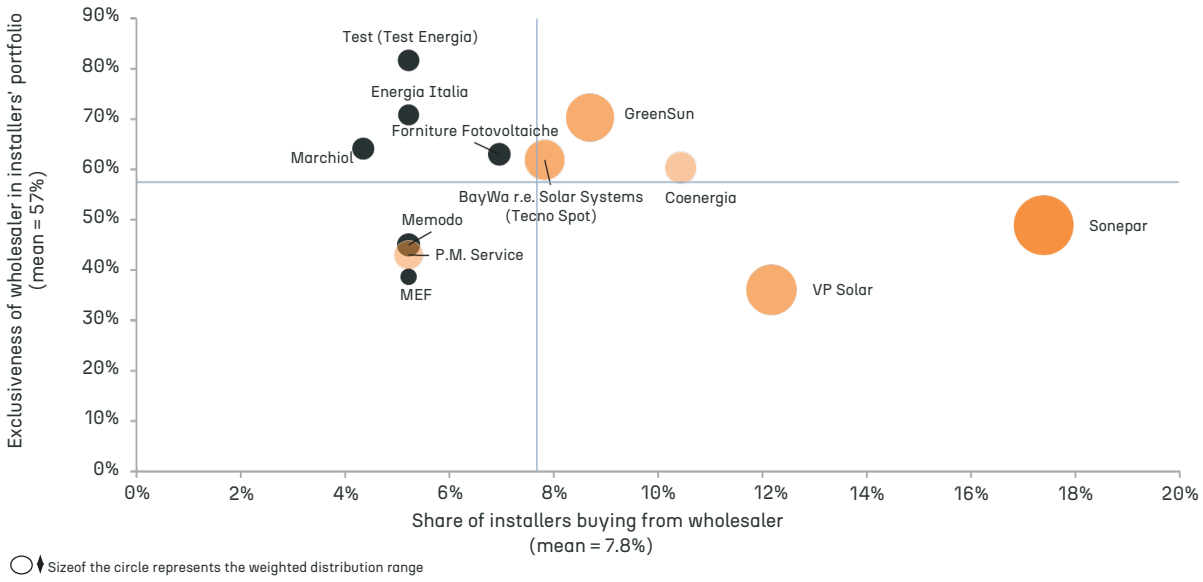
Installers purchase an average of 88 percent of their PV modules for direct use in installations, while only 11 percent are kept in stock. Companies with higher installa- tion volumes allocate a slightly larger share, around 16 percent, for stock needs. Ove- rall, there has been no significant trend toward high stock levels among installers. Procurement primarily occurs through wholesalers (75 percent), with 21 percent of PV modules sourced directly from manufacturers. Direct procurement has grown in importance, increasing by about ten percentage points compared to the previous sur- vey. This shift is more pronounced among solar and high-volume installers, while low-volume installers remain more reliant on wholesalers.



Distribution channels of PV modules | Not weighted by installed capacity | Source: EUPD Research 2024

Leading PV Module Wholesalers in Italy

In terms of distribution width (the share of installers naming a certain wholesaler as supplier of modules), Sonepar ranks first with 17 percent, followed by VP Solar and Coenergia, with 12 and 10 percent, respectively. GreenSun and BayWa r.e. Solar Systems (Tecno Spot) complete the top 5. High-volume installers show a preference for VP Solar and P.M. Service, while Me- modo and Test Energia are particularly favored by solar firms. Among wholesalers with the widest distribution, GreenSun stands out for its exclusivity (measured as the share of customers purchasing the component exclusively or almost exclusively from them), with an average depth of around 70 percent, alongside BayWa r.e. and Coenergia. When observed together with the weighted distribution range, the men- tioned metrics clearly point to Sonepar and VP Solar as the wholesalers with the best market positioning in Italy.

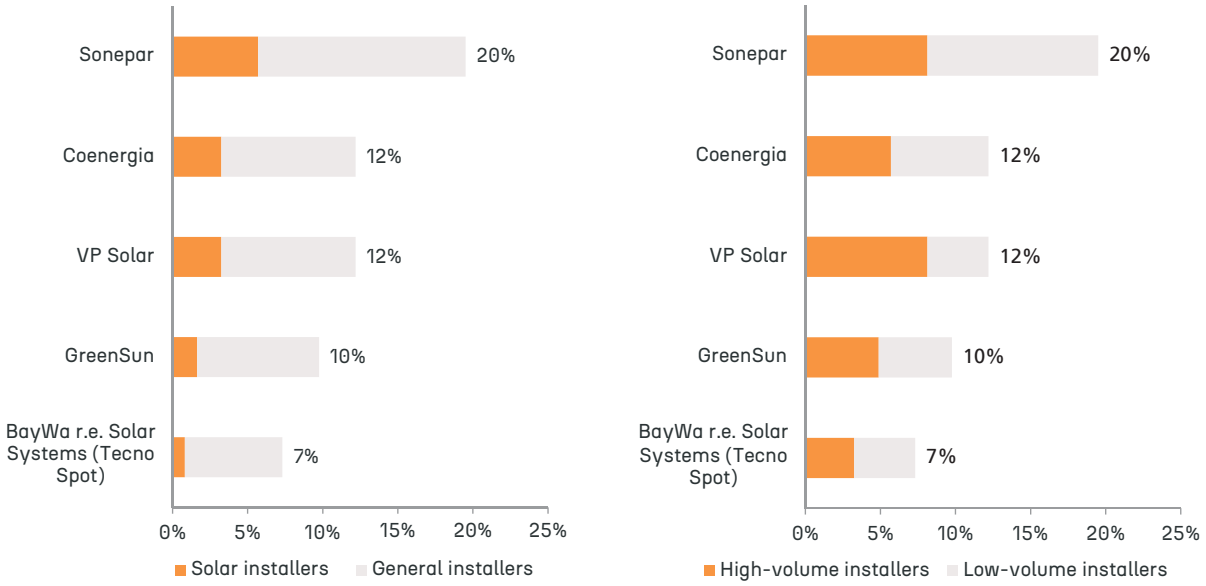


Market positioning of PV module wholesalers | Distribution range | Source: EUPD Research 2024

Inverters

Procurement Channels Installers purchase 87 percent of inverters from wholesalers, while only 10 percent are sourced directly from manufacturers. Compared to PV modules, inverters are procured indirectly more often. This trend is consistent across all installer groups, except for high-volume installers, who purchase 20 percent of their inverters di- rectly—twice as much as other groups. Even when weighted by installed capaci- ty, indirect procurement remains dominant for rooftop PV systems. Although direct procurement has increased slightly, it remains a minor share.

Leading Inverter Wholesalers in Italy Sonepar is the leading wholesaler for inverters, too, supplying inverters to around 20 percent of surveyed companies. Coenergia and VP Solar follow, with a similar customer distribution between solar and general installers. Some wholesalers spe- cialize in certain installer groups: BayWa r.e. and GreenSun cater mainly to general installers, while VP Solar focuses on high-volume installers, similarly to modules.

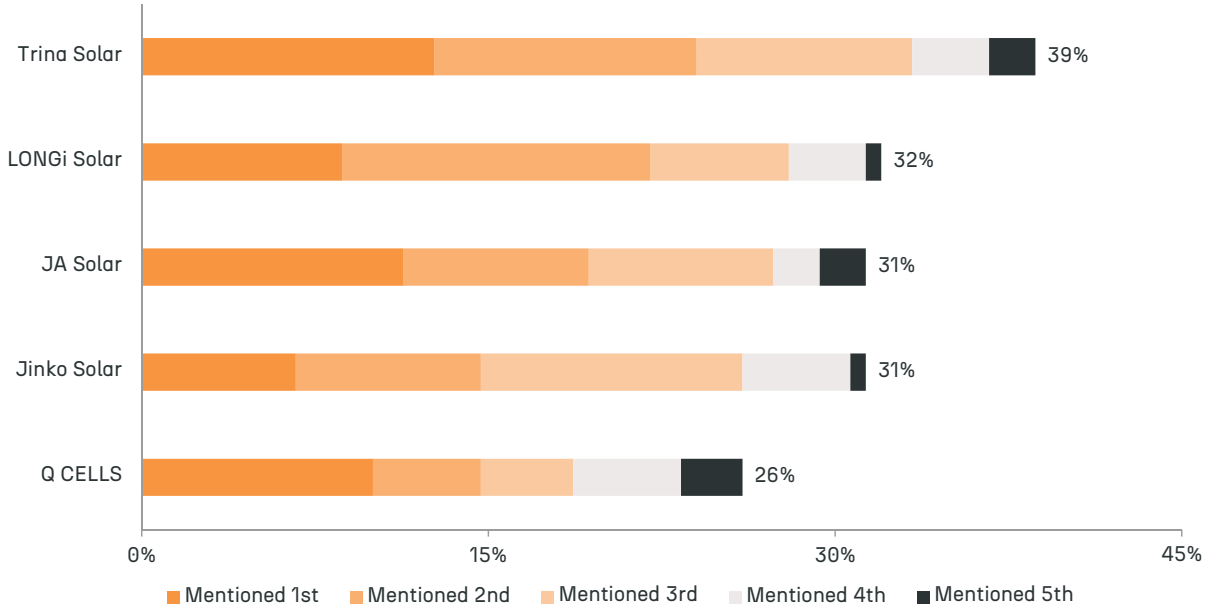


Surveyed installers purchase inverters from... | Top 5 inverter wholesalers grouped by trade and size | Source: EUPD Research 2024

MANUFACTURING

PV Modules

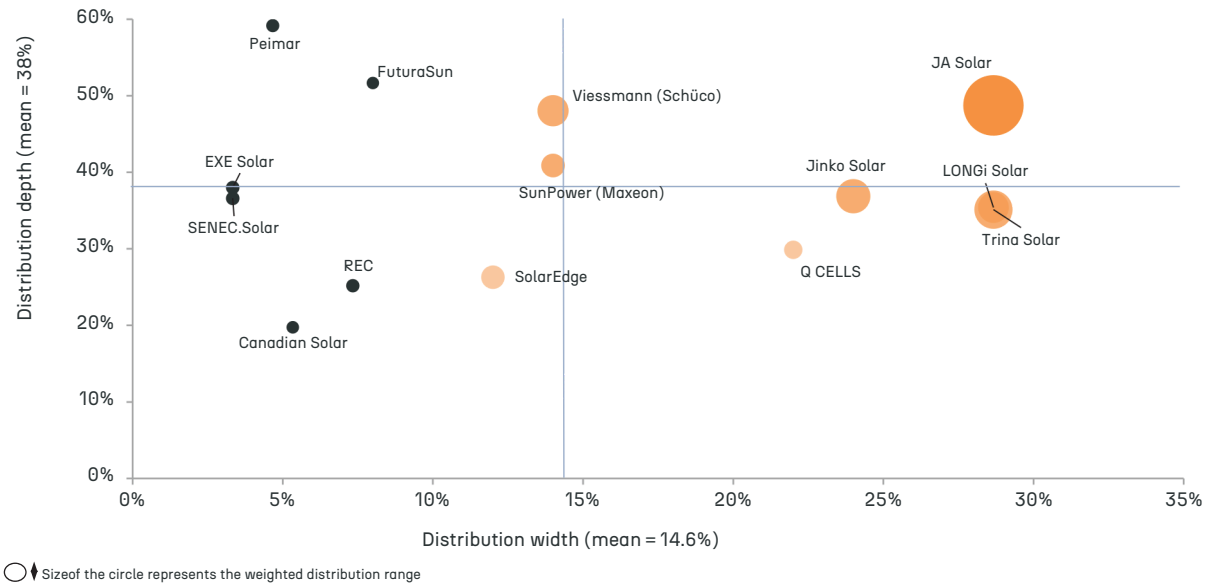
Brand Awareness & Distribution Width Trina Solar holds the leading position as PV module manufacturer in Italy: when asked which PV module brands are top of their thoughts, 39 percent of the survey- ed installers mention Trina Solar, followed by LONGI Solar with 32 percent, and JA Solar and Jinko Solar both at 31 percent. Q CELLS closes the top 5 with a share of 25 percent.



Unaided brand awareness | Top 5 PV module manufacturers | Source: EUPD Research 2024

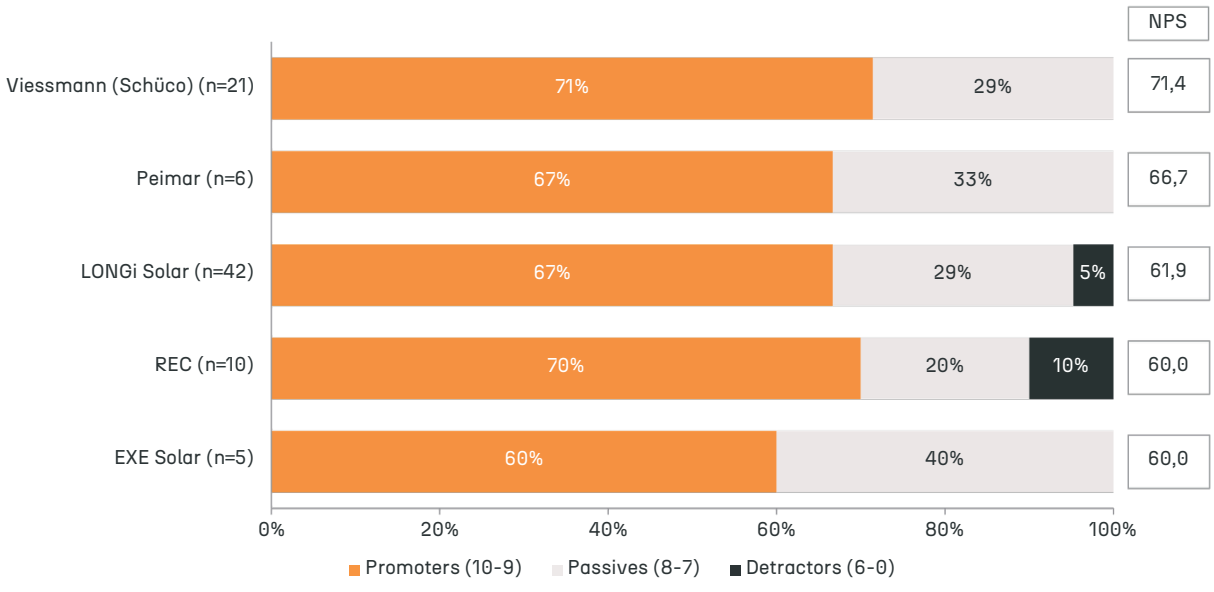
JA Solar, LONGi Solar, and Trina Solar also dominate installers‘ portfolios, each with the same share of mentions (29 percent). Jinko Solar and Q CELLS obtain the second and third highest distribution width, respectively, followed by SunPower (Maxeon) and Viessmann (Schüco) with 14 percent.

Exclusiveness & Overall Brand Positioning More than half of Peimar customers carry the brand exclusively or predominantly, while 22 percent of FuturaSun and 17 percent of SunPower (Maxeon) customers do the same. However, overall distribution depth remains fairly low: apart from Peimar and FuturaSun, JA Solar and Viessmann (Schüco) achieve the highest mean, just below 50 percent; Hyundai Energy Solutions and Trina Solar have a strong exclusive presence, but most brands—except LONGi Solar and Trina—are often used as back- up options. Considering also the weighted distribution range, JA Solar is the most dominant brand in Italian installers‘ portfolios, followed by Trina Solar, Jinko Solar, and LONGi Solar, though with a lower exclusiveness level.



Brand positioning of PV module manufacturers | Distribution range | Source: EUPD Research 2024

Brand Satisfaction & Loyalty In terms of Net Promoter Score (NPS), which reflects installer satisfaction and loy- alty, Viessmann (Schüco) leads with 71.4, followed by Peimer (66.7), and LONGi Solar (61.9). Among module brands with the widest distribution, JA Solar achieves a score of 44.2, followed by Q CELLS (42.4), Trina Solar (37.2), and Jinko Solar (25.0). The score is calculated as the difference between the share of brand promoters (recom- mending the brand with a likelihood of 9 or 10 out of 10) and the share of detractors (recommending the brand with 6 or less). While the NPS provides an indication of brand satisfaction, the total number of mentions received by a brand should always be taken into account.

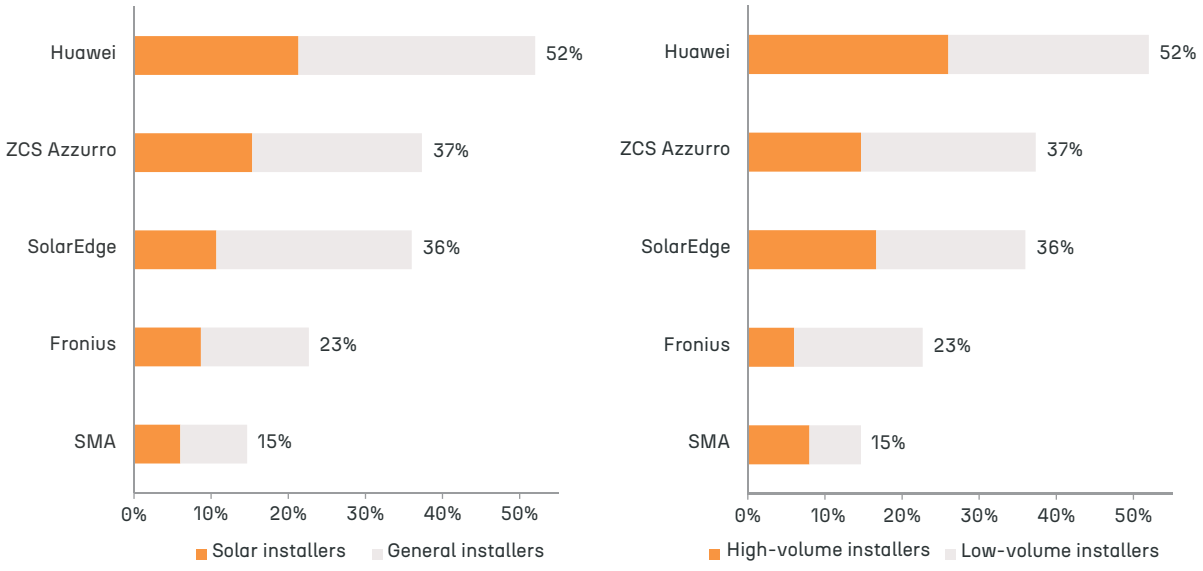


Brand recommendation | Top 5 PV module manufacturers by NPS | Distribution range | Source: EUPD Research 2024

When it comes to factors influencing brand preference, more than half of installers cite product quality as the most important aspect, followed by service and reliability (37 percent). The price-performance ratio is also a key factor, making it the third most frequently mentioned consideration. This suggests that while cost remains important, installers prioritize long-term reliability and manufacturer support when selecting PV module brands.

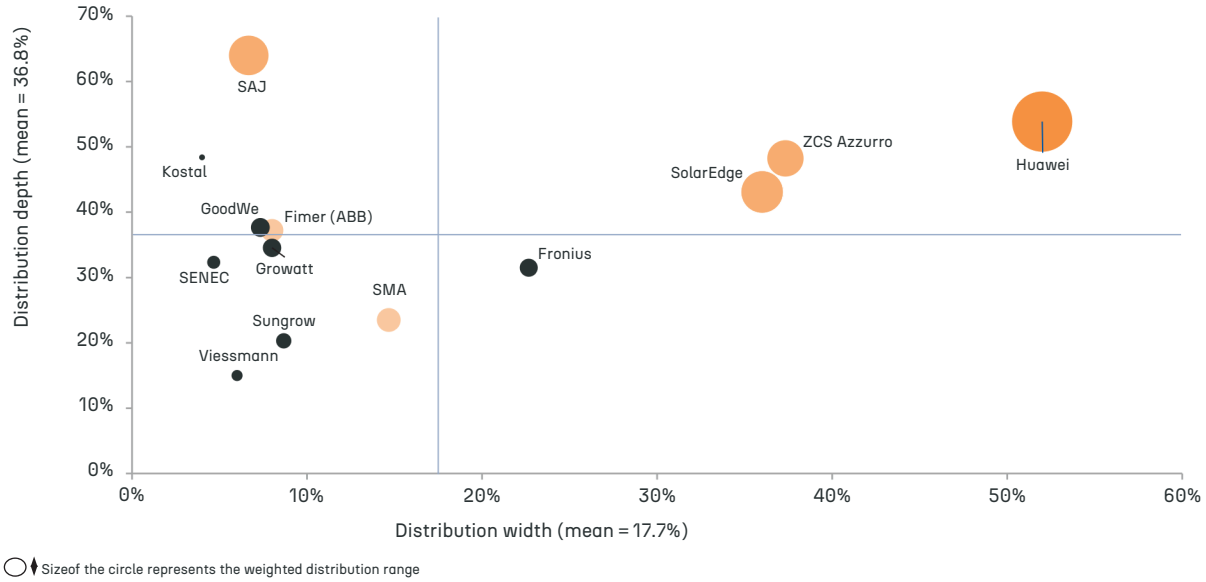
Inverters

Brand Awareness & Distribution Width Huawei represents the leading inverter manufacturer in terms of brand awareness among the surveyed installation companies with an impressive 71 percent. Froni- us holds the second spot with 51 percent, followed by ZCS Azzurro follows, with a 48-percent share and a significant growth compared to the past surveys. SolarEdge and SMA rank fourth and fifth, with 42 and 33 percent, respectively. Huawei takes the first spot as the most carried inverter brand in the respondents' portfolio, too, followed by ZCS Azzurro and SolarEdge. Similarly for brand awareness and portfolio presence, both Huawei and ZCS Azzurro have grown significantly over time at the expense of the other leading inverter manufacturers, especially Fronius and SMA, which nonetheless rank fourth and fifth for distribution width.



Inverters in installers' portfolios | Top 5 inverter manufacturers grouped by trade and size | Source: EUPD Research 2024, GET Matrix©

Exclusiveness & Overall Brand Positioning SAJ achieves the highest average distribution depth among inverter brands, as it dominates the portfolios of more than half of its customers. Around one-fifth of Hua- wei's customers purchase exclusively its inverters. The share of exclusive custo- mers is 17 percent for both ZCS Azzurro and SolarEdge. As a result of the examined metrics, Huawei currently dominates the Italian mar- ket for inverters, showcasing the highest width and a significant degree of exclu- siveness, as well as the largest distribution range. Among the other brands with a sizeable range, only SAJ has a higher distribution depth, but it is offered by fewer installers. Together with Huawei, SolarEdge and ZCS Azzurro are among the best- positioned brands.



Brand positioning of PV inverter manufacturers | Distribution range | Source: EUPD Research 2024

Brand Satisfaction & Loyalty SolarEdge achieves the highest NPS among the inverter brands in Italy, as 76 per- cent of its customers promote the brand. Fronius is recommended by the same share of clients, but also has nine percent of detractors. ZCS Azzurro, one of the top brands in brand awareness and market width, counts relatively many detractors among its customers (24 percent). SAJ, the brand with the highest level of exclusiveness, has also a quite high share of detractors among its installers, 30 percent.

CONCLUSION

The PV InstallerMonitor© reveals several crucial insights into the current dynamics and emerging trends of the rooftop photovoltaic market, with a particular focus on PV modules and inverters. For stakeholders including manufacturers, wholesalers, and investors engaged in both international and Italian markets, these findings pro- vide valuable indicators for strategic planning and market positioning. A notable observation from the survey is the dual nature of the installer landsca- pe, where nearly two-thirds of companies operate as generalists while specialized solar companies contribute over half of the total installed PV capacity. This divide indicates that while market entry might be feasible for generalists, specialization is key to achieving higher installed capacities. For manufacturers of PV modules and inverters, tailoring products to meet the distinct needs of these two installer types could unlock significant market opportunities. The preference for high-output PV modules (exceeding 400 watt peak) among solar and high-volume installers has more than doubled, signaling a growing demand for powerful, efficient modules. This shift towards higher wattage is likely driven by the increased focus on larger systems (51-250 kWp), particularly in the commercial segment. Manufacturers focusing on innovative, high-efficiency module technology stand to gain a competitive edge, especially if these modules also address installer demands for durable and easier-to-install products. Inverter trends also offer actionable insights. Despite the prevalence of 1-phase mo- dels across the board, 3-phase inverters are gaining traction among high-volume installers. This suggests an opportunity for inverter manufacturers to enhance their product offerings with versatile, high-performance models that integrate well with storage systems—a growing area of interest as identified by installers. Notably, Huawei‘s dominant position in brand awareness and portfolio presence, along with SolarEdge‘s leading Net Promoter Score, highlight the competitive advantage of in- vesting in brand reputation and customer satisfaction. The procurement patterns outlined in the survey indicate a reliance on wholesalers, with a growing trend toward direct procurement from manufacturers, particularly among high-volume installers. For wholesalers, this underscores the importance of maintaining robust relationships with top-tier brands and optimizing supply chains to support faster material delivery—a critical need expressed by installers. For ma- nufacturers, direct engagement with high-volume installers could prove advanta- geous, especially as this group demonstrates a higher propensity for direct procu- rement.

The survey also highlights the strategic importance of diversification among installers, who are increasingly branching into complementary technologies like EV charging stations and Smart Home solutions. This trend could serve as a gateway for PV module and inverter manufacturers to cross-promote integrated energy solu- tions, thereby capturing a broader share of the expanding renewable energy market. Overall, the Italian rooftop PV market presents a dynamic landscape with distinct opportunities for those agile enough to align with installer preferences and evolving market demands. Manufacturers and wholesalers that prioritize product innovation, streamline distribution processes, and foster strong brand reputations will be well- positioned to thrive in this competitive environment. For more information on the GET Matrix© or EES InstallerMonitor©, visit our website at www.eupd-research.com

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