

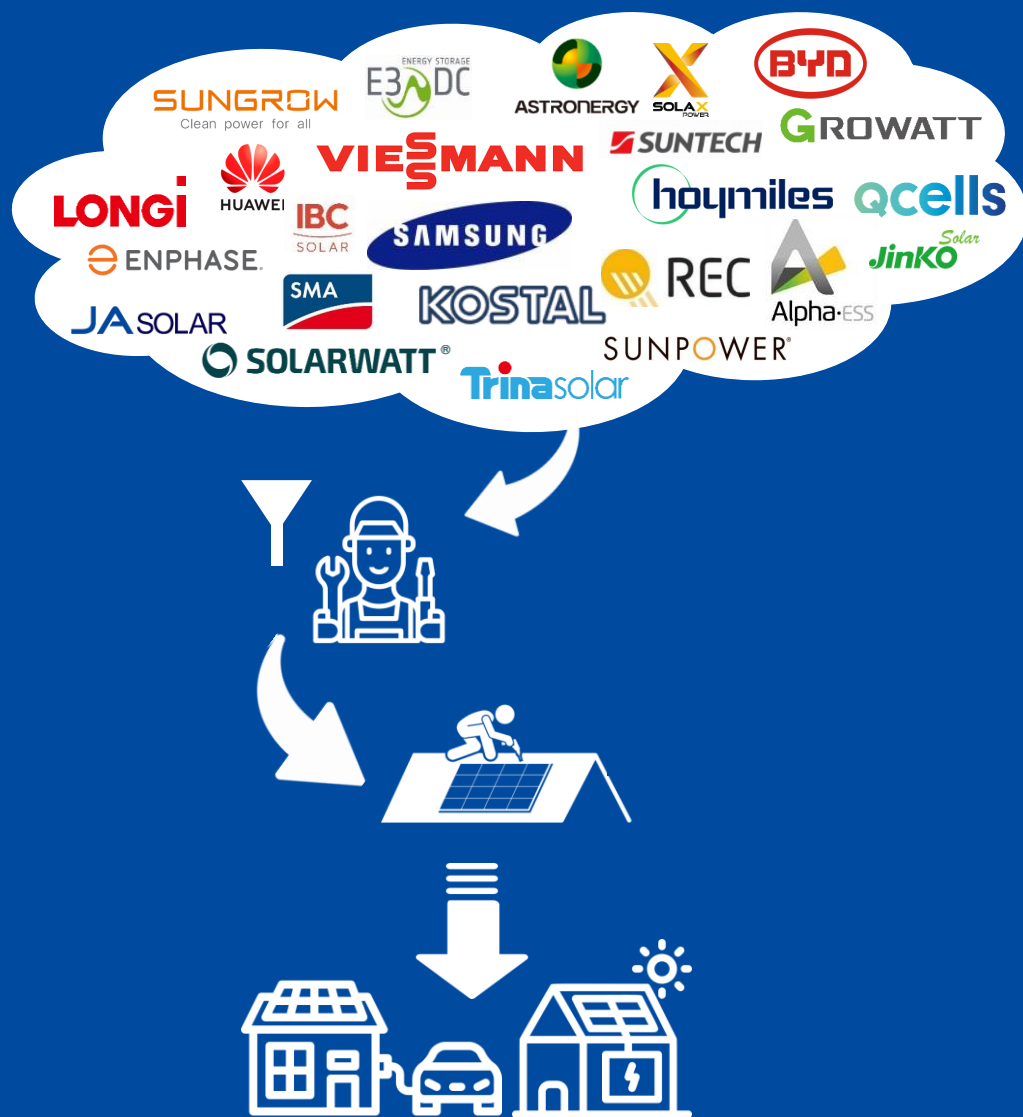
PV InstallerMonitor[©] 2023/2024

Understanding the installers' view of the PV rooftop market

Primary Survey of PV Installers in Australia, Austria & Switzerland,
Belgium, France, Germany, Italy, Netherlands, Poland, Spain &
Portugal, Sweden & Denmark, and UK



PV installers as key market intermediaries



Photovoltaic systems are the foundation of a sustainable and independent electricity supply in private households. They allow home owners to produce electricity that can be used for their own household needs such as charging an electric car or operating a heat pump.

A wide range of PV modules, inverters, mounting systems, energy storage and energy management systems are available in the global market. PV installers play a key role in selecting the best brands and products and managing their portfolio accordingly. Thanks to their technical expertise and up-to-date knowledge of the latest market trends and technological developments, they are able to advise their clients and offer them the most suitable solution. Simultaneously, they are able to feel the pulse of the solar market at all times.

By conducting extensive interviews with installation companies, the PV InstallerMonitor® helps companies operating in the solar industry understand country markets, analyze their own brand as well as their competitors and adapt the strategy, as well as the offer to the requirements of each.

Benefits of the PV InstallerMonitor© 2023/2024

The study provides exclusive information on:

- Market structures
- Market players
- Installer portfolios
- Procurement channels
- Products and brands

Utilize this report to...

...optimize the allocation of your marketing budget

...improve your position amongst the competition

...implement a successful product development

...understand the needs and demands of the PV installers

...adapt your portfolio to the installers' requirements

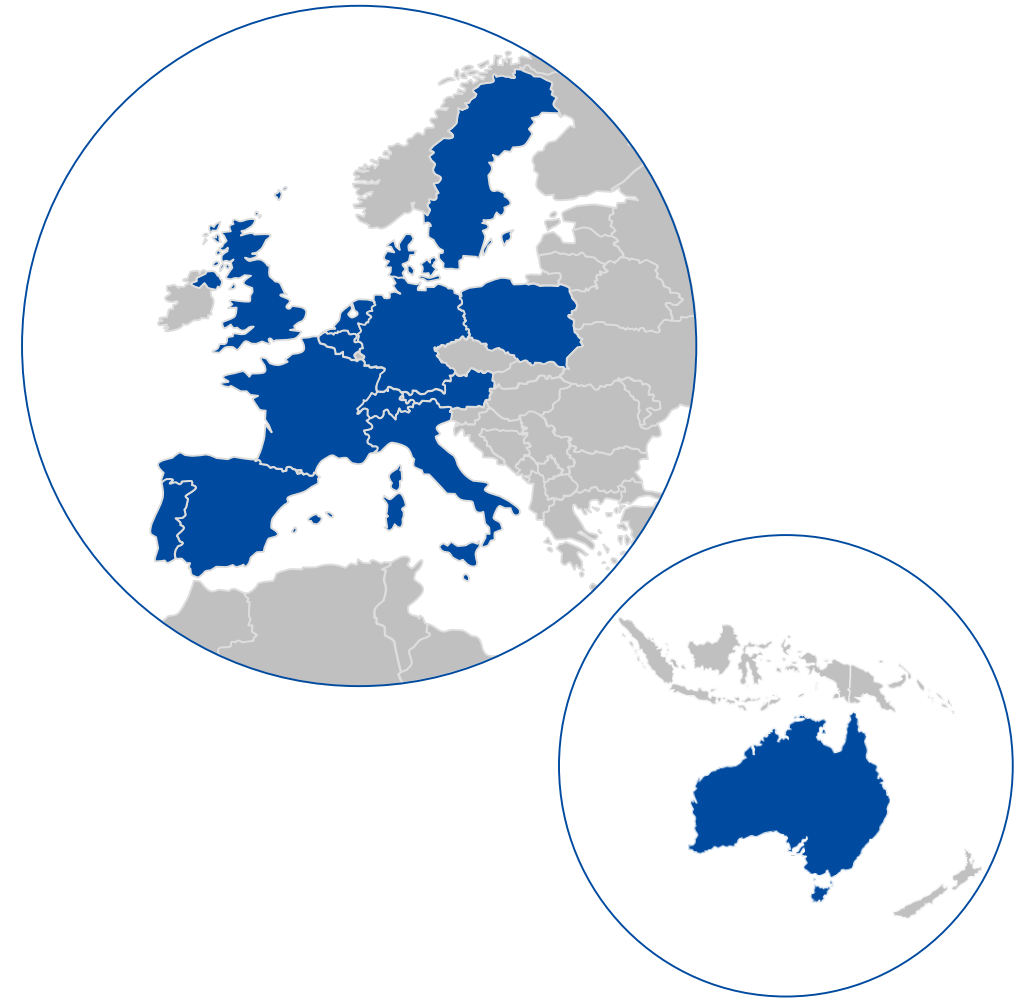
Markets covered by the PV InstallerMonitor© 2023/2024

Opportunities & Challenges

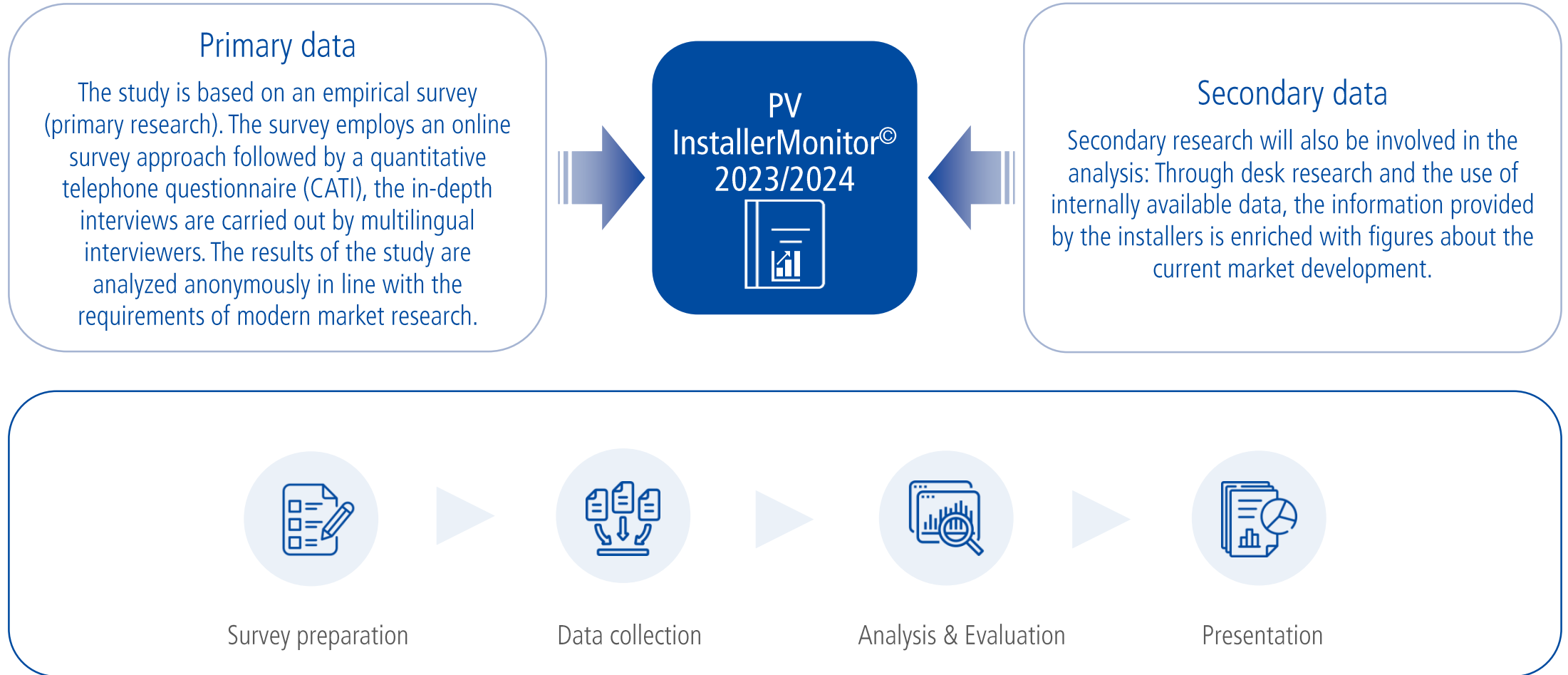
Markets with a large rooftop segment offer a steady investment environment and favorable margins. However, each market is structured differently. To be successful, you need to understand the PV installers as key intermediaries in the different markets.

Country market	No. of interviews*	Country market	No. of interviews*
Australia	n=250	Netherlands	n=150
Austria & Switzerland	n=150	Poland	n=130
Belgium	n=100	Spain & Portugal	n=150
France	n=100	Sweden & Denmark	n=100
Germany	n=300	UK	n=100
Italy	n=150		

* The target markets differ with regard to market maturity and installers' landscape and therefore the number of interviews cannot be guaranteed.



Methodology of the PV InstallerMonitor© 2023/2024



Topics of the PV InstallerMonitor© 2023/2024

Target group: Installers of PV systems

This group can include pure solar installers, HVAC companies, construction companies, electricians, roofers.

The selection of the sample is drawn from EUPD Research's extensive address database of PV installers. This database is constantly refreshed and updated. Only installers who have installed rooftop PV systems in 2023 in their domestic country market are considered for the survey.

Study content

Survey description & market background

1. General introduction
2. PV market data
3. Funding schemes
4. Sample description

Technologies & Topics

1. Modules
2. Inverters
3. Mounting systems
4. Storage systems
5. HEMS
6. Wholesalers

Analysis (details depending on topic)

1. Procurement channels
2. Brand awareness
3. Brands in portfolio
4. Share of brands
5. Net Promoter Score



Content of the PV InstallerMonitor© 2023/2024

- **Market Data:**
PV market information: installations and funding schemes
- **Sample Description:**
Description of surveyed installers and head groups (core business, technologies in portfolio, PV employees, PV installations, % PV turnover, BAPV/BIPV)
- **Business Situation:**
Catchment area, media usage, waiting time for installation, situation with finding skilled personnel, openness towards new brands
- **Procurement:**
Procurement channels for PV components, positioning of wholesalers, type of wholesalers, Net Promoter Score
- **Modules:**
Procurement, brand awareness, avoided brands, market penetration of brands, Net Promoter Score, motivation to put best rooftop product in portfolio, products on stock/for direct use
- **Inverters:**
Procurement, brand awareness, 1/3 phase, market penetration of brands, Net Promoter Score
- **Mounting system manufacturers:**
Procurement, market penetration of brands, Net Promoter Score
- **Storage Solutions:**
Procurement, storage installations (numbers, AC/DC, high/low voltage, 1/3 phase, new/retrofit installs), brand awareness, avoided brands, market penetration of brands, Net Promoter Score, motivation to put best residential product in portfolio
- **HEMS:**
Brands in portfolio or suggestion to use, Net Promoter Score

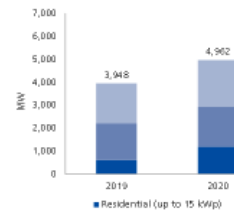
Example slides of the PV InstallerMonitor[©]



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Market overview – PV market information

Newly installed PV capacity* 2019-2022



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smart energy intelligence

PV developments

According to Federal Ministry for Economic Affairs and Climate Action (BMWK) during the next four years (2022 included) Germany is targeting annual installations of 7, 9, 13, and 18 GW and once the country reaches 22 GW of PV installations in 2026, a 22 GW of annual PV installations would be the plan until 2035.

Funding schemes – Explanation

Market overview

Funding schemes

Feed-in tariff (FIT)

Feed-in tariff – a government-fixed remuneration of electricity

The feed-in tariff serves to promote certain types of power generation. It is a kind of minimum price system that allows forms of electricity generation to be integrated into the grid that are not able to compete with other forms of generation on the basis of their market price alone. For an investor, planning security is created, since the price per kWh paid in a feed-in tariff exceeds the price of the grid electricity. FITs are based on long-term contracts and guarantees for this specific price, usually for 15 to 20 years.

Direct marketing – selling generated electricity directly on the electricity exchange

Within the framework of a feed-in tariff, a feed-in premium (FiP) indicates that electricity from renewables is usually sold on the electricity spot market. In doing so, RE producers receive a premium on the market price of their electricity production. The FiP can be either fixed (i.e. at a constant level independent of market prices) or changing (i.e. with variable levels depending on the development of market prices). In terms of a FiP, the period of on top payments is limited to a certain period of time (e.g., 15 years).

Net-metering – a billing mechanism that credits surplus electricity added to the grid

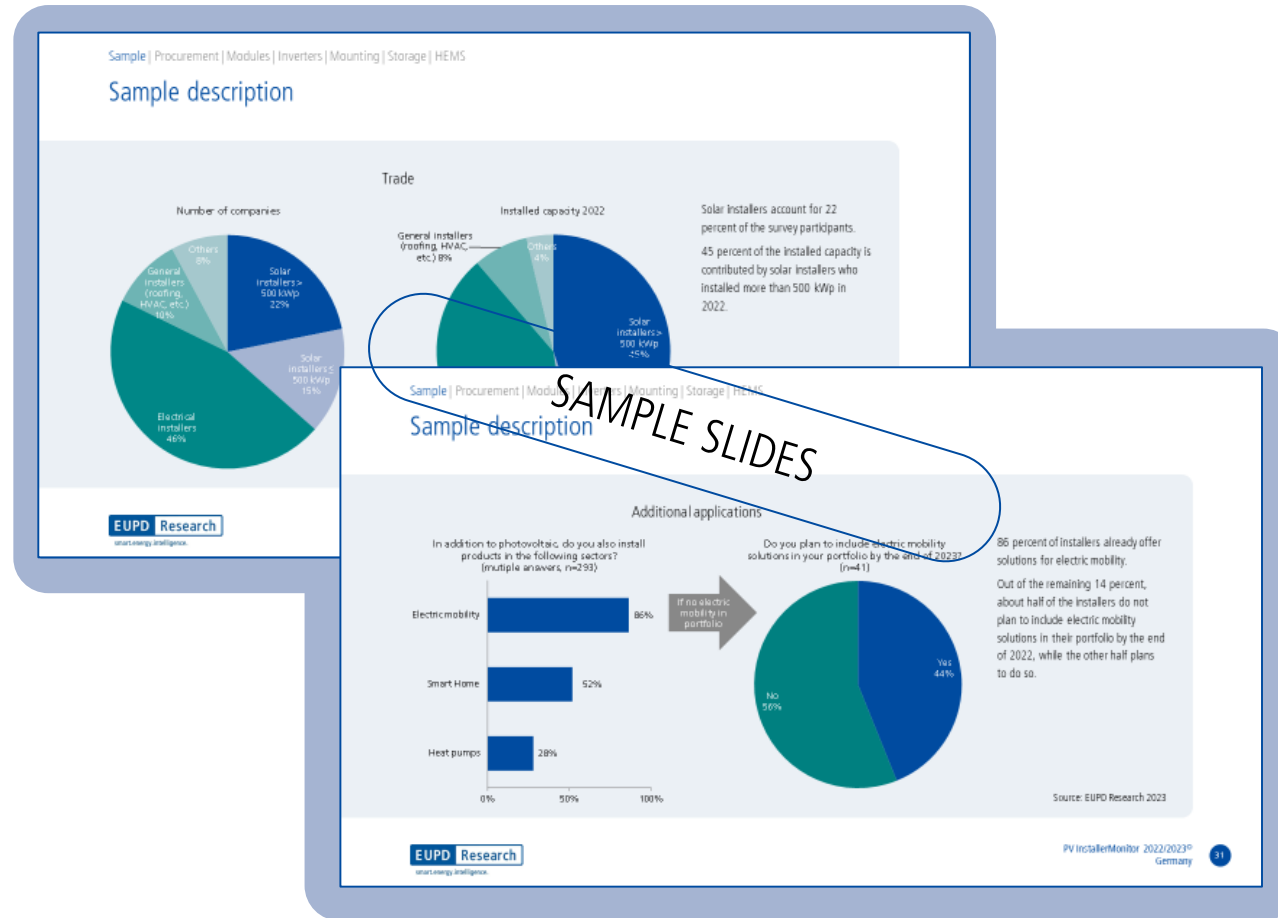
Net-metering measures the solar energy generated by a household so that excess electricity can be "transferred" to the customer's account for future consumption. In times of high grid supply, the "stored" energy is thus used for balancing in order to achieve a clean electricity balance. Another form is net billing, in which the household, which also generates electricity for its own use, sells excess energy to the utility company at a wholesale price or at a separately specified price while purchasing electricity at the retail price. Depending on the amount of excess energy, the electricity bill (per month) could be reduced to zero.

EUPD Research
smart energy intelligence

PV InstallerMonitor 2022/2023©
Germany

Gain a better understanding of the market:

- ✓ Get a comprehensive market overview
- ✓ Track the cumulated and yearly installed capacity in the relevant segments
- ✓ Understand the main funding schemes
- ✓ Utilize the key market data for your planning

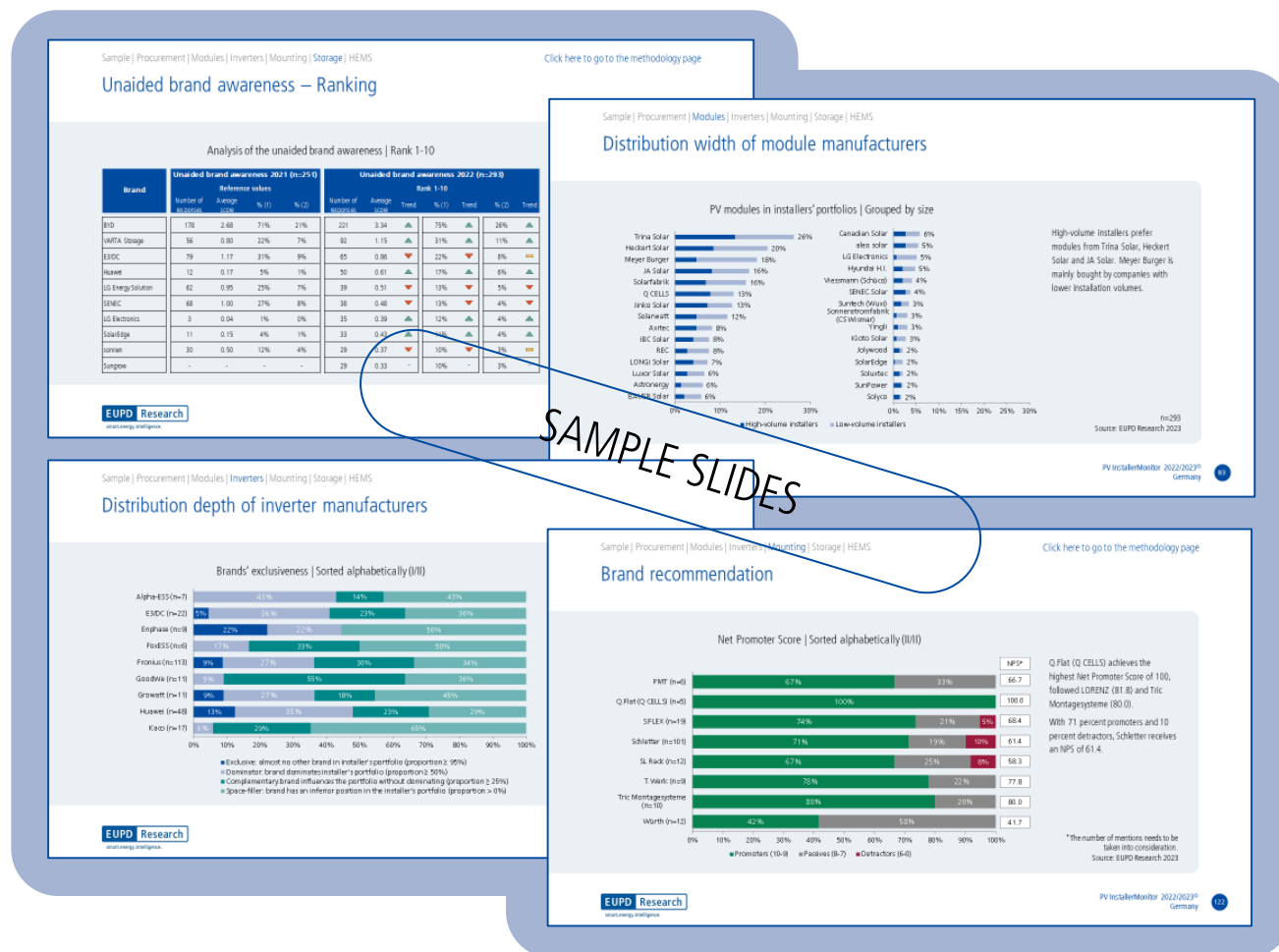


Expand into new installers' portfolios:

- ✓ Get to know the installers, how their businesses are characterized and in which sectors they operate in
- ✓ Find out in which markets installers are open to adding a new brand to their portfolio and in which country markets it is harder for new brands to be accepted

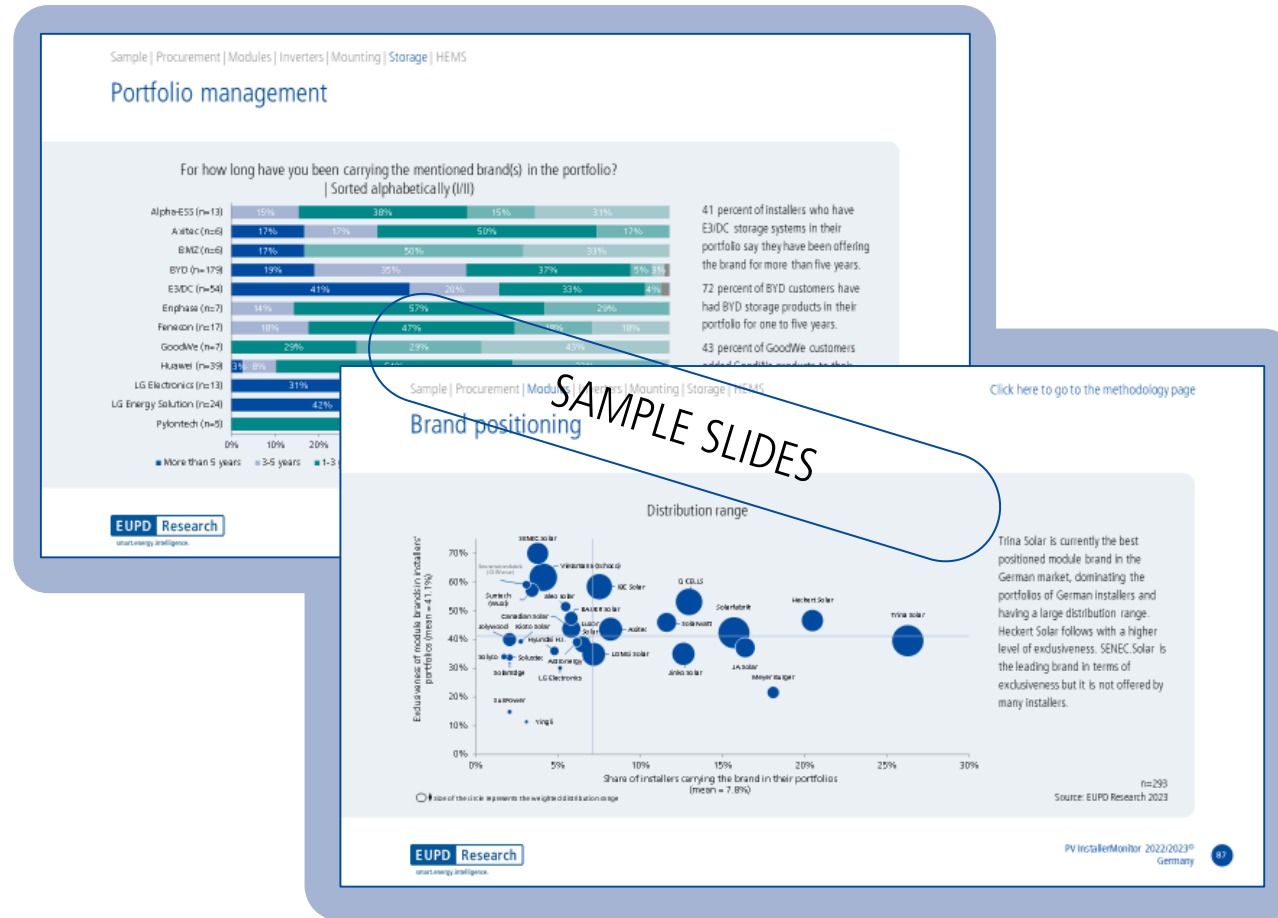
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KPI's



Assess brand performance in the market:

- ✓ Monitor the perception of your brand via the measured unaided brand awareness
- ✓ Check the distribution width and depth of your brand
- ✓ Assess the willingness of installers to recommend your brand to others

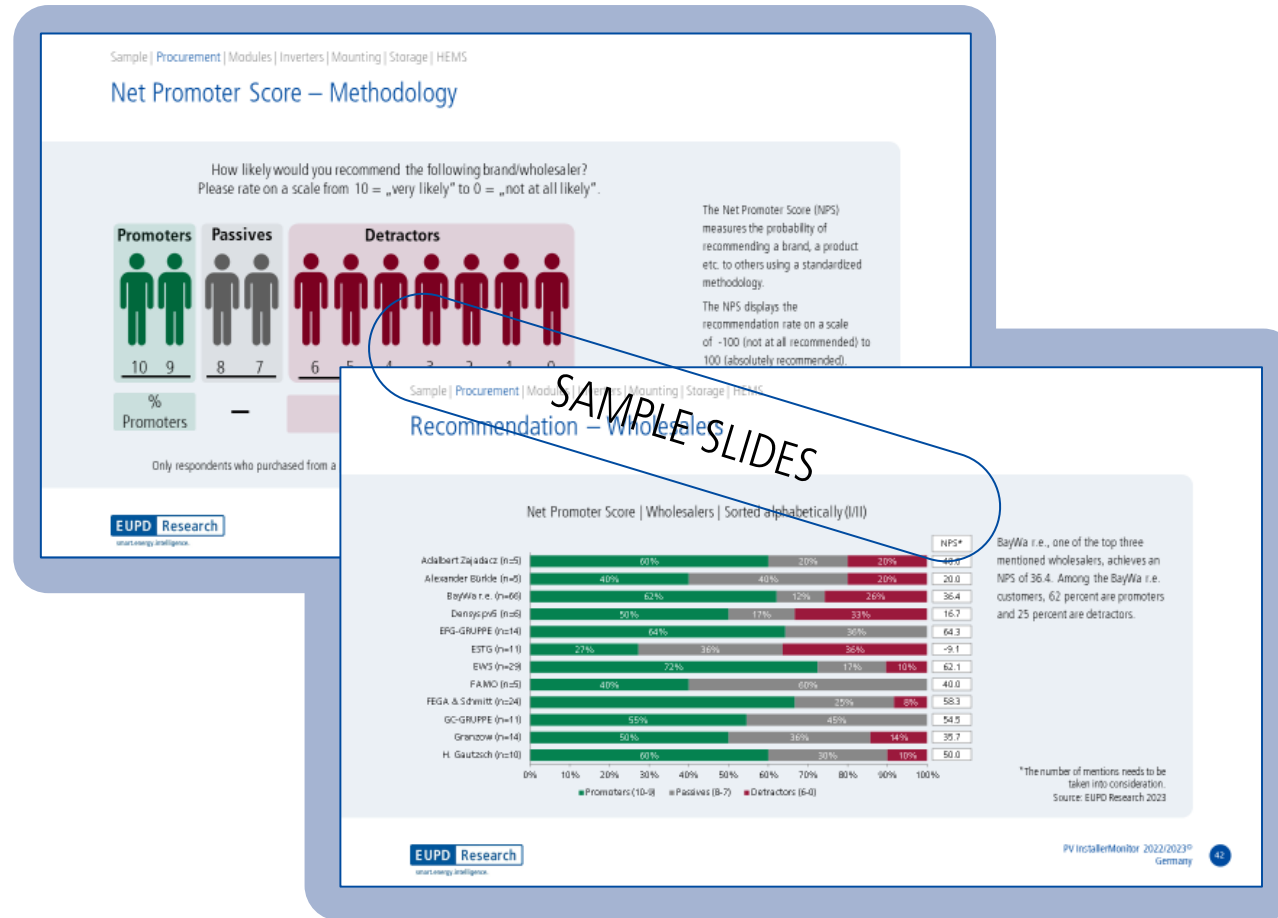


The positioning in the installers' portfolios is crucial:

- ✓ Measure the percentage of installers who buy your products and solutions
- ✓ Analyze how exclusively your brand is positioned in the installers' portfolios
- ✓ Clarify if you are a first choice or a replaceable space filler
- ✓ Track the journey and evolution from a rarely purchased niche product to a frequently requested exclusive star

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Net
Promoter
Score



Recommendation is key:

- ✓ Benchmark your company against your main competitors
- ✓ Identify potential for improvement
- ✓ Communicate your success based on valid statistics and figures
- ✓ Count your promoters and subtract the customers who are critical of your product

Receive your issue of the
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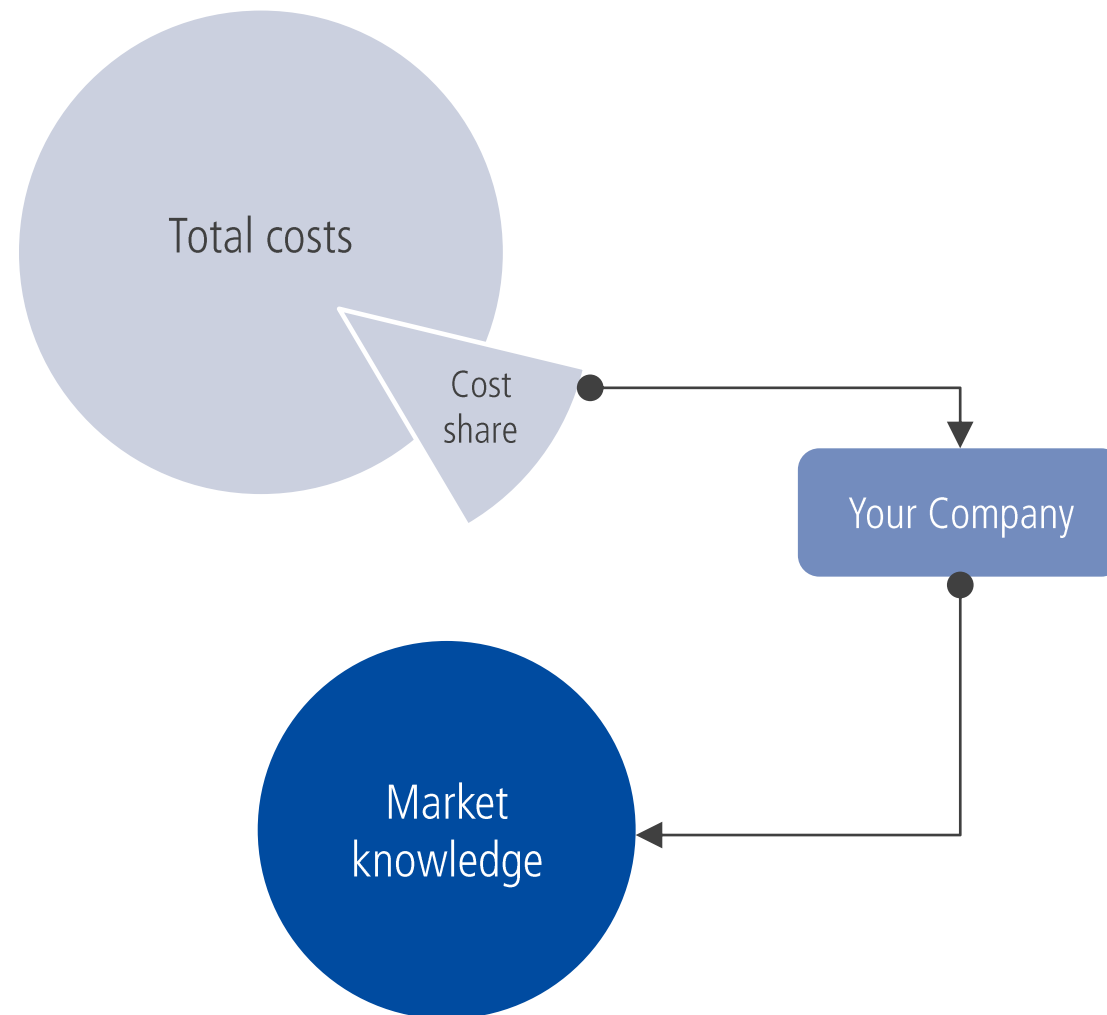


Shared Costs and Comprehensive Results

Invest and benefit together!

Conducting the **PV InstallerMonitor**® requires a significant investment in study design, questionnaire, installer survey, secondary research, analysis, and study implementation.

By investing in the reports, you will gain valuable market insight through primary and secondary research.



Order form PV InstallerMonitor© 2023/2024

COUNTRY MARKET PDF-REPORTS *

	Interviews**	Price
<input type="checkbox"/> Australia	n=250	7,350 €
<input type="checkbox"/> Austria & Switzerland	n=150	6,250 €
<input type="checkbox"/> Belgium	n=100	5,600 €
<input type="checkbox"/> France	n=100	5,600 €
<input type="checkbox"/> Germany	n=300	7,750 €
<input type="checkbox"/> Italy	n=150	6,250 €
<input type="checkbox"/> Netherlands	n=150	6,250 €
<input type="checkbox"/> Poland	n=130	5,950 €
<input type="checkbox"/> Spain & Portugal	n=150	6,250 €
<input type="checkbox"/> Sweden & Denmark	n=100	5,600 €
<input type="checkbox"/> UK	n=100	5,600 €

* Please note: All prices excluding VAT. Payment conditions: 100% upon order.

** The target markets differ with regard to market maturity and installer's landscape and therefore the number of interviews cannot be guaranteed.

Company: _____

Name: _____

Street: _____

City / zip Code: _____

Phone: _____

E-Mail: _____

Sales Tax ID: _____

☐ I accept the terms and conditions of business
(p. 23-24)

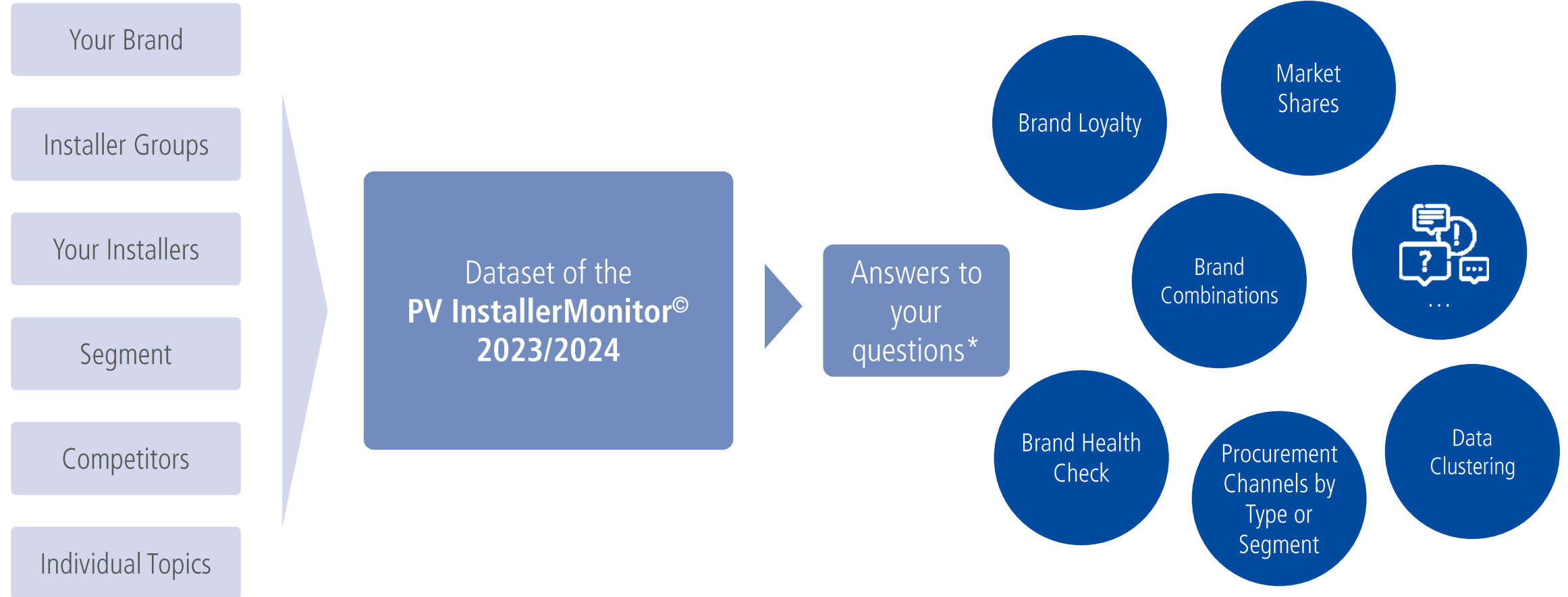
Date: _____

Signature: _____

E-Mail to the attention of
Saif Islam | Senior Consultant
s.islam@eupd-research.com

Dataset with further potential

Optional: Company-specific analysis | More information upon request



Additional Products and Services

Brand Health Check



Our datasets allow in-depth analysis to help you answer questions specific to your business.

In addition to the regular results of our reports, different questions can be evaluated according to your individual needs (e.g. a specific focus on the installers who carry your products in their portfolio).

Customer Satisfaction

To ensure the sustainability of your customers' satisfaction, it is important to have an overview of the current status of the brand in the perception of the most important target group – the installers.

In consultation with you, a questionnaire is developed to review the customer journey: communication and marketing, sales, product policy, price, order processing, distribution and service.

A 'Voice of Customer Survey' documents the areas of success and highlights the potential for improvement in those with the greatest impact in the relevant countries.

Top Brand PV Seals 2024



Since 2011, EUPD Research has been awarding the Top Brand seals to manufacturers and wholesalers who have demonstrated successful brand management.

The seal is awarded in the categories modules, inverters, wholesalers, storage systems, mounting systems and HEMS. The data for the evaluation is derived from the PV InstallerMonitor© 2023/2024.

About EUPD Research

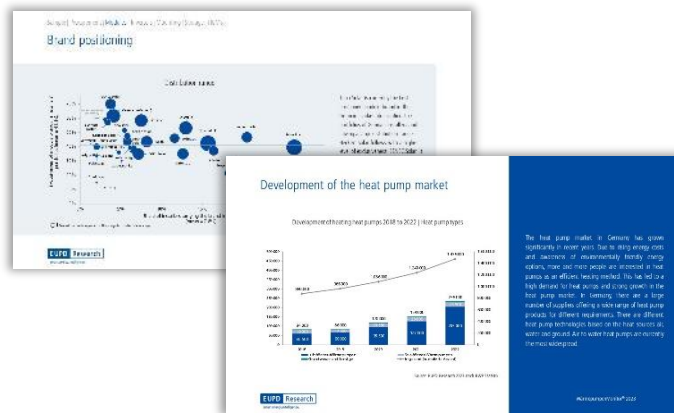


EUPD Research | Portfolio

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)



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Sources

Icons: Flaticon.com (All icons in this report volume were created using resources from Flaticon.com.)

EUPD Research | General Terms and Conditions of Business I

1. Scope

1.1 All contracts between EUPD Research Sustainable Management GmbH (hereafter EUPD GmbH) - and the customer shall be subject to the following terms and conditions only. The customer's terms and conditions of business shall not be applicable and shall not put EUPD GmbH under any obligation to comply unless EUPD GmbH explicitly gives written acknowledgment and acceptance of such conditions.

1.2 Offers are aimed exclusively at commercial clients, that is, companies according to Article 14 BGB (German Civil Code). Private customers, that is, customers according to Article 13 BGB, are not permitted to place legally binding orders based on the aforementioned. Interested private customers should contact EUPD GmbH by telephone for information on how to place a non-commercial order. Furthermore, the legal right to return items as stated in consumer protection law does not apply to orders placed by commercial clients but does apply to orders placed by private customers.

2. Offer and Ordering Process

2.1 The presentation of the products together with the order form does not constitute a legally binding offer. Offers are subject to the written confirmation of EUPD GmbH. They are designated for the internal use of the customer only.

2.2 The purchaser places a binding offer for the product of choice when all relevant purchase details have been given and the general terms and conditions of business accepted. This will be confirmed immediately by email or fax sent to the address given by the customer. The contract to purchase between the purchaser and EUPD GmbH is valid from when the order is confirmed, or, the products are delivered either by mail or download.

3. Scope of Services, Remuneration and Prices

3.1 Services offered include but are not limited to the following:

a. Multi-Client-Services: client-independent studies for an indefinite number of customers.

b. Shared-Services: commissioned study on behalf of a limited number of customers for the exclusive purchase of those customers.

c. Exclusive-Services: assignments carried out on behalf of a single customer who will have the exclusive license to use the product but only for an individually negotiated period of time. This exclusive license will be for a period no longer than 12 months. After a period of no longer than 12 months it will become a non-exclusive license.

3.2 The prices are net prices in Euros. They do not include sales tax/VAT or delivery costs. Sales tax/VAT will be added to the net costs according to the legally defined percentage. The prices valid at the time of ordering are binding.

3.3 Travel expenses incurred for EUPD GmbH workshops either provided in combination with studies or booked separately are not included in the scope of the offer. Prices have to be paid separately by the customer. This does not apply if it is explicitly agreed that the workshop or the resulting travel expenses for the workshop are part of the negotiated contract and thus do not have to be paid separately.

3.4 Should circumstances arise beyond the control of EUPD GmbH which impose a temporary hindrance on the provision of services, then services and delivery appointments agreed on will be extended. Customers will be informed of any such event or other delay immediately.

4. Terms of Payment and Delivery

4.1 Payment is to be made to the amount and method stated in the contract. Any addition and/ or aberration require the written confirmation of EUPD GmbH in order to be effective.

4.2 Payment is generally to be made upon receipt of invoice. The products will be shipped as soon as full payment has been made to the account of EUPD GmbH.

The terms and conditions for payment and delivery of Shared- Services and Exclusive-Services are stipulated in the binding offer.

4.3 Delivery costs depend on the quantity of products ordered, their destination as well as type of delivery. There are no delivery costs for products which can be downloaded. The customer accepts that any fees or charges owed for customs or non-EU addresses will not be paid by EUPD GmbH nor is EUPD GmbH liable for them.

4.4 The method of delivery, route and company employed to deliver will be chosen by EUPD GmbH at their sole discretion. Once the purchaser has taken delivery of the item from the delivery service, the purchaser is responsible for the item. The company responsible for delivery is to be made aware of any damage sustained in transit immediately. These damages are also to be reported to EUPD GmbH immediately. Part deliveries are permissible where appropriate.

EUPD Research | General Terms and Conditions of Business II

4.5 EUPD GmbH retains ownership of all goods and all licensing rights pertaining to the usage of data files as well as intellectual property until payment of invoice has been made in full. Intellectual property rights are lawfully retained by the author.

4.6 The purchaser is only able to offset counter claims if they are acknowledged by law, uncontested, or prior written consent has been granted by EUPD GmbH. Customers are only have the right of retention if counterclaims are based on the same contractual relationship. The customer is prohibited from transferring any claims of payment against EUPD GmbH to a third party.

4.7 The estimated costs for the services provided by EUPD GmbH are based on project calculations and experience. Estimations are optimized and customer-oriented so that lower deviations may not be assumed.

However, it cannot be fully excluded that additional effort maybe required in the completion phase of the project. Should the suggested amount be exceeded, EUPD GmbH will inform the client promptly. Such additional efforts will be calculated on the basis of man-day costs and these may vary according to the qualification of the staff involved.

Upon notification of these additional costs the client may choose whether the project shall continue in accordance with the original cost estimation as stated in the proposal although full completion of the project may no longer be possible or agree to the revised cost estimation thus enabling full completion of the project. Should the client agree to the latter, this shall be subject to a separate written agreement.

5. Copyright and Licenses

5.1 The products and their intellectual property are protected by copyright. It is only possible to purchase a license to use the product and not the product itself or its content. The author/ creator remains the owner of intellectual property.

5.2 The customer is granted a non-transferable and non-exclusive license to use the product and the results and content in the product (with the exception of Exclusive-Services) for personal use only. As far as the customer (for example an agency) exclusively acts as the purchaser for a user mentioned by name within the order, then the right of use applies solely for said user.

5.3 Permission to use the licensed product in the national and international affiliates of the company is subject to the written approval of EUPD GmbH.

5.4 Any use of the product not explicitly permitted under copyright law is prohibited without the prior written consent of EUPD GmbH as the licensor and/or the written consent of the author. This includes but is not limited to copying, distributing, publishing, translating, saving, processing and reproducing the work in databases. Non-compliance will be prosecuted

6. Liability

6.1 The products were prepared with the utmost care, using professional methodologies and taking relevant legislation into account with the aim of assuring the best possible accuracy of the studies and their results. The data contained in this product is based on surveys of sample populations, conducted using standard statistical methods to the best of our knowledge. As such the study is subject to a certain statistical error rate and is based exclusively on the facts which were available at the time of the survey. Due to the aforementioned, no guarantee can be given for the accuracy and completeness of the studies and the data made available in them.

6.2 The studies contain specific information, but explicitly do not contain any definite recommendations on investments or actions to be taken. Should the user, having taken the above mentioned into consideration, choose to use the studies to support their decision making process, EUPD GmbH shall not assume liability for the economic success of such investments or actions.

7. Jurisdiction

The court of jurisdiction is Bonn. German law will be applied in all legal proceedings.

8. Severability Clause

Should any of these terms and conditions, either in full or in part, be invalid or incomplete, it shall not affect the validity of the other terms and conditions. In that case, the terms and conditions, as stated in German law come into effect.

As of October 2022