

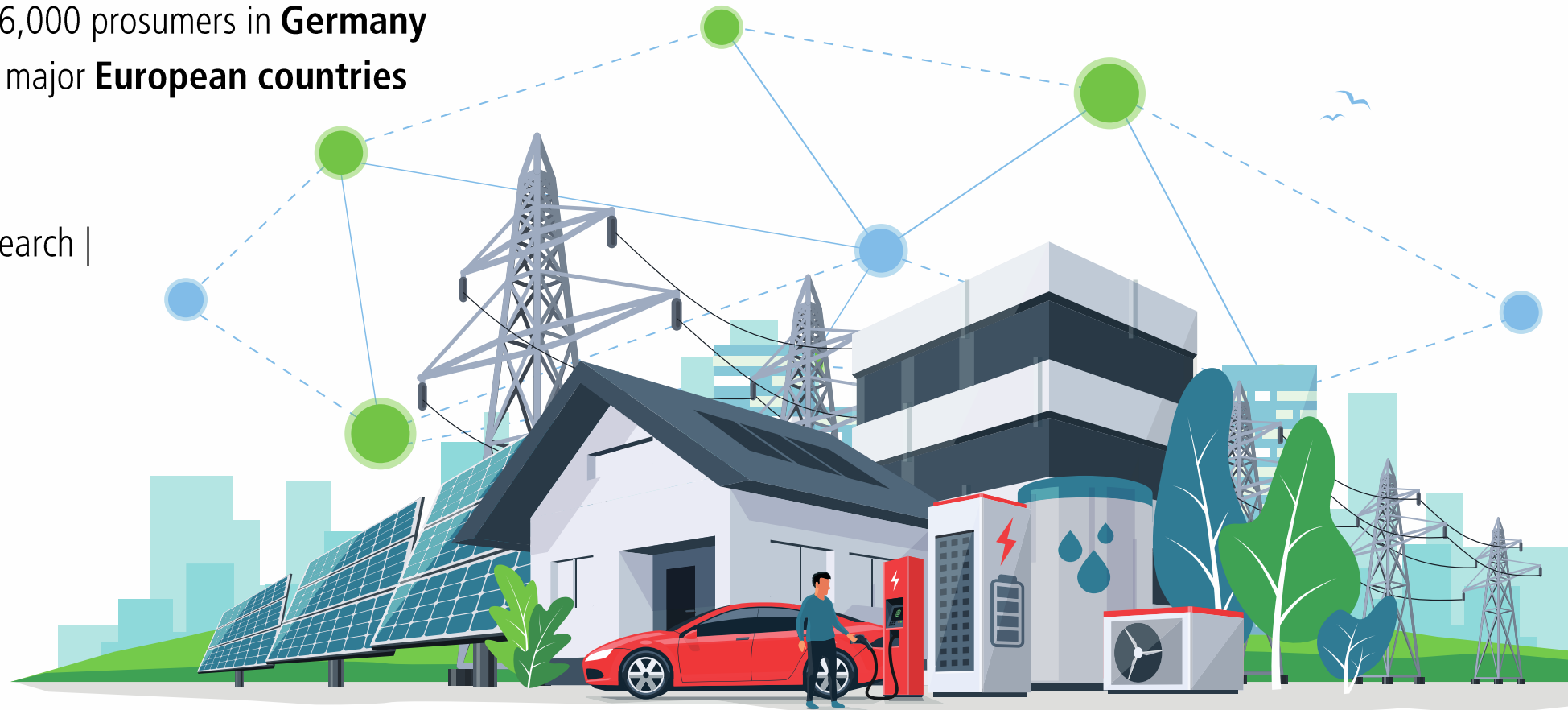
SolarProsumerMonitor[©] 2023/2024

Renewable home energy from the perspective of photovoltaic system owners and planners:

Survey results of about 6,000 prosumers in **Germany** and about 1,700 in ten major **European countries**

Multi Client | EUPD Research |
October 2023

22+
YEARS
EUPD Research



Background

Photovoltaic system owners, who produce their own solar electricity and use it for their self-consumption, are known as 'prosumers'. This customer group has a high affinity for any products and services related to energy transition.

Prosumers' perception of manufacturers, their products and services or simply the association with a brand are part of the core competence for a successful market positioning.

Overview

In 2023, EUPD Research surveyed prosumers in Germany as well as in ten major European markets about home energy solutions.

The classic topics of brand awareness, brand selection and recommendation are once again an integral part of both studies. About 6,000 PV system owners and planners in Germany and about 2,200 across ten European countries have participated in two surveys.

The studies provide comprehensive insights into the energy systems of prosumer households, the installed systems and investment intentions for PV and storage systems, electric cars and charging stations, heat pumps and home energy management systems.

The report and the data of the SolarProsumerMonitor[®] provide valuable support in adapting business strategies and in fine-tuning your individual product and service portfolio.

From components to solutions

- High quality and compatibility of intelligent renewable energy components is imperative
- The generation of solar energy is the first step. The clever feeding into different fields of application is the optimization of its usage
- Integration of all components into a home energy management system is a clear advantage
- Sector coupling is the way to go
- The ability to work and communicate in a holistic system is necessary
- There are typical time points of installation and/or integration of products and solutions



Those who benefit from the SolarProsumerMonitor[©]:

Target groups:

- Module, inverter, storage system, charging station and heat pump manufacturers
- Energy management solution providers
- Distributors
- Energy providers
- Installers
- Investors, financial institutions

Feedback from prosumers regarding the most important KPI's of manufacturers in their relevant set

Essential sketch of the buying decision making process of prosumers

In-depth evaluation of well perceived manufacturers as pre-qualification for partnerships

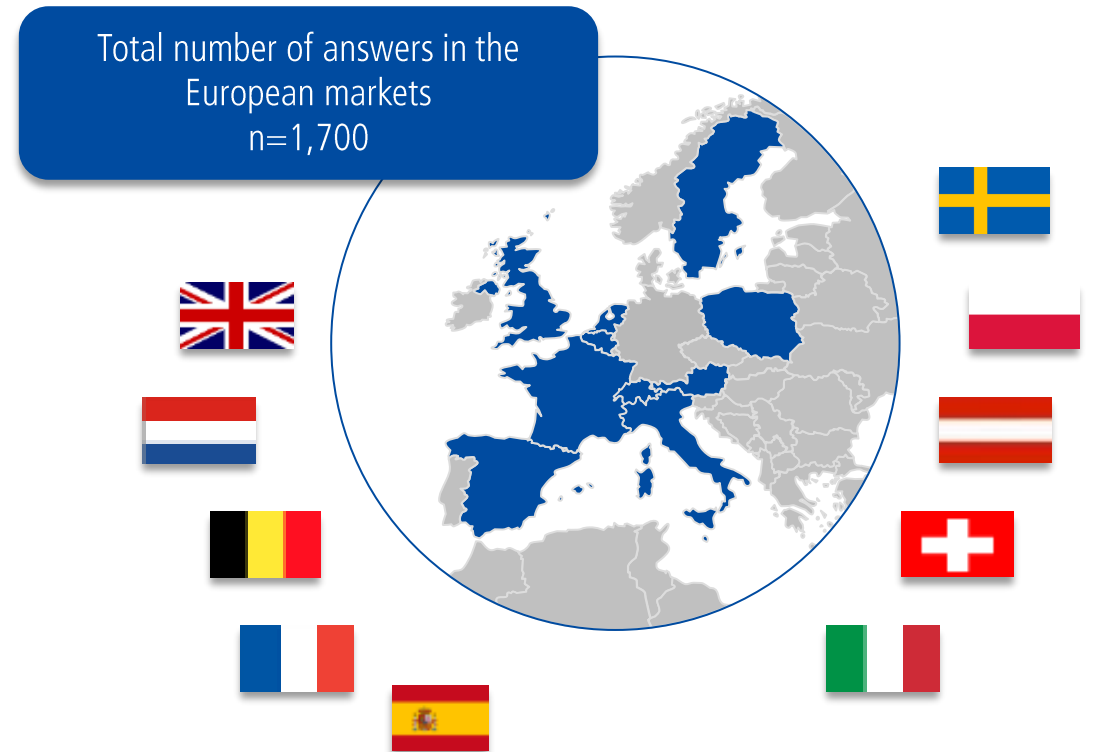
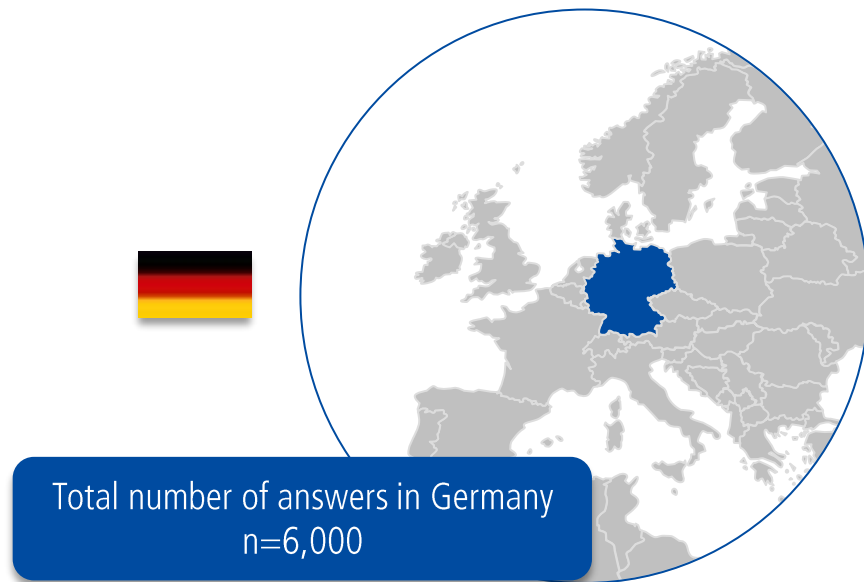
Benchmark information of manufacturers that are well accepted and very well demanded by prosumers

Information about Key Performance Prosumer Properties of each brand

Prosumer survey | Expansion to European markets

Since 2011 more than 24,000 German-speaking prosumers have been surveyed.

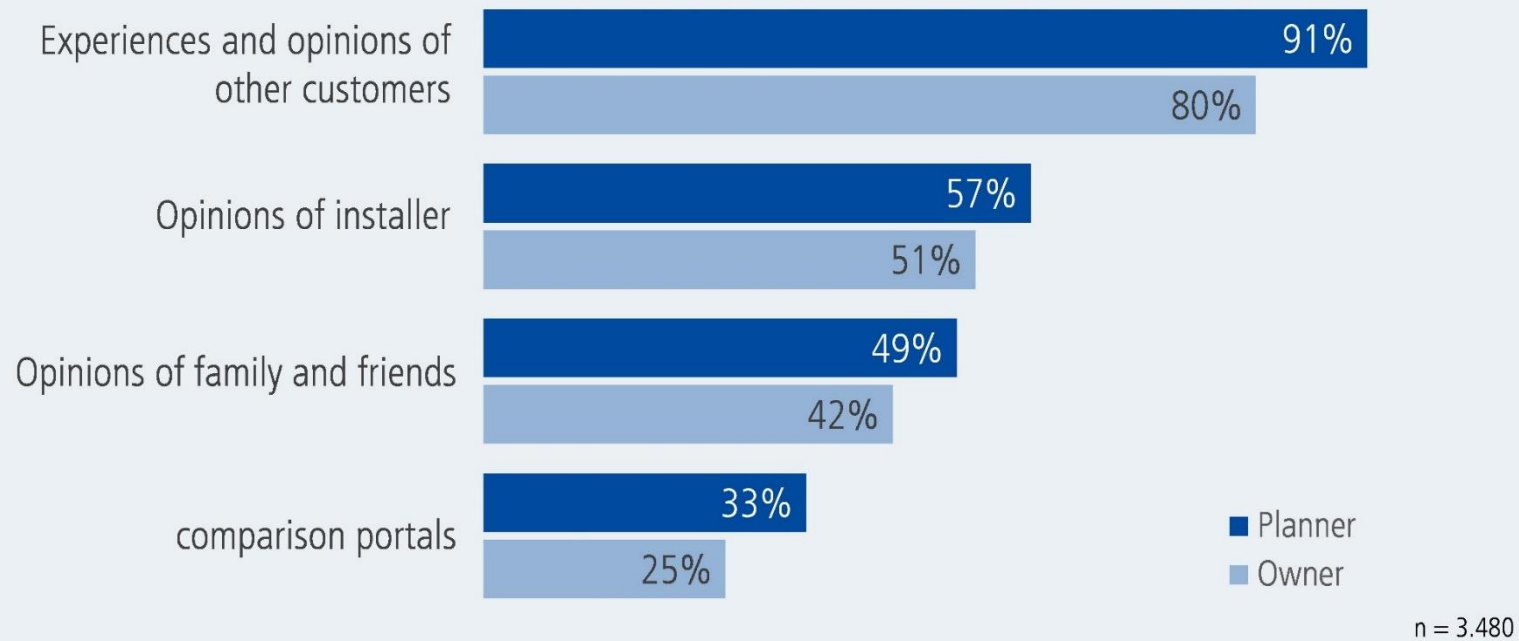
For the first time, prosumers in further ten major European markets are surveyed in 2023.



Importance experience of other prosumers

Source: SolarProsumerMonitor 2022/ 2023 by EUPD Research

How important are or were the following aspects to you when investing in photovoltaics and storage? - Share "important" and "very important" -



Content of the SolarProsumerMonitor© 2023/2024

Expert knowledge

Knowledge base

Since 2011 more than 24,000 German-speaking prosumers have been surveyed within 13 reports.
For the first time, prosumers in further ten major European markets were surveyed in 2023.

Topics

Topics include among others brand awareness and selection, purchase realization, and brand recommendation.

Technologies

Modules | Inverters | Storage systems

Home energy management systems

Heat pumps

Electric cars* | Charging stations

*Only in the SolarProsumerMonitor© Germany.

Target group

Why are prosumers such a significant target group?

Understanding

Prosumers have invested in sustainable, renewable photovoltaic systems and operate these systems already.

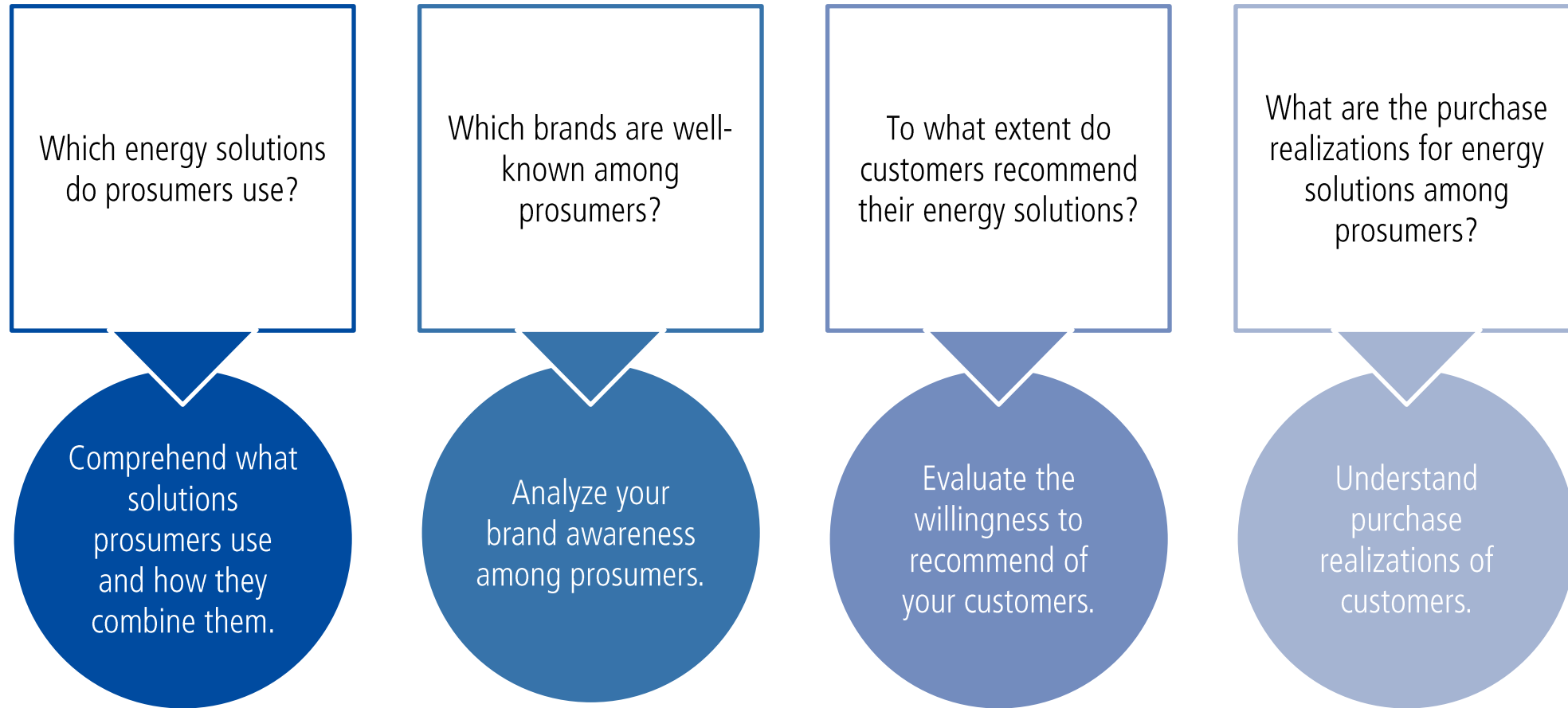
Motives

Prosumers are sustainably oriented, support the energy transition and aim for a high share of self-sufficiency. Complementary technologies such as energy storage systems, electric cars, charging stations, heat pumps, and Home energy management systems strengthen individual energy self-sufficiency.

Implementation

Prosumers are primarily homeowners with above-average incomes and the ability to invest in new energy solutions. In addition, investments in further technologies such as storage systems, electric cars, or heat pumps pay off even more if the homeowners' own solar energy can be used.

Range of questions



Methodology & project timeline

The studies offer a comprehensive overview of the German market and further European markets for energy solutions including PV systems, energy storage systems, electric cars*, charging stations, heat pumps, and home energy management systems from the point-of-view of prosumers.

July – September 2023

Data Collection

- Conception / design of the questionnaire
- Programming of the questionnaire
- Preparation, implementation, and monitoring of the field phase

October – November 2023

Data Analysis

- Data cleansing and analysis
- Evaluation according to technology areas and target groups

December 2023

Results

- Compilation of in-depth PDF report
- Description of the results through graphs and explanatory texts

*Only in the SolarProsumerMonitor® Germany.

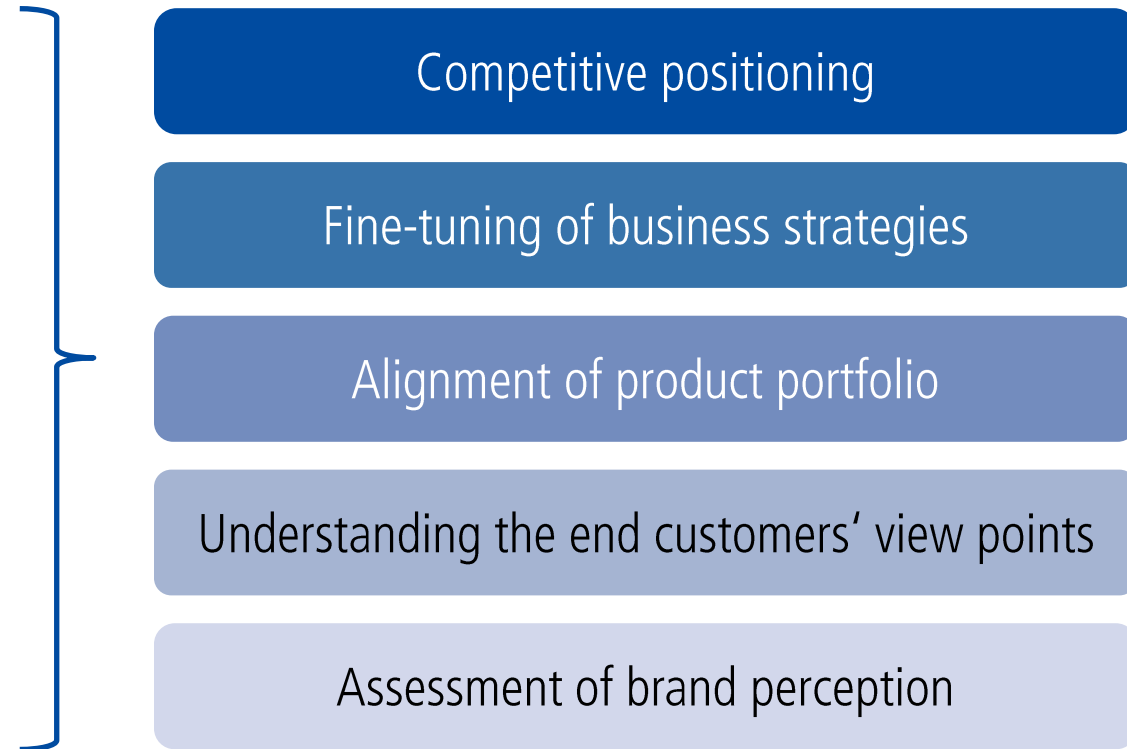
Knowledge & insights

Buying decisions regarding the following components:

- Modules
- Inverters
- Energy storage systems
- Heat pumps
- Electric cars*
- Charging stations
- Home energy management systems

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Added value & benefits



Chapters of the SolarProsumerMonitor© 2023/2024

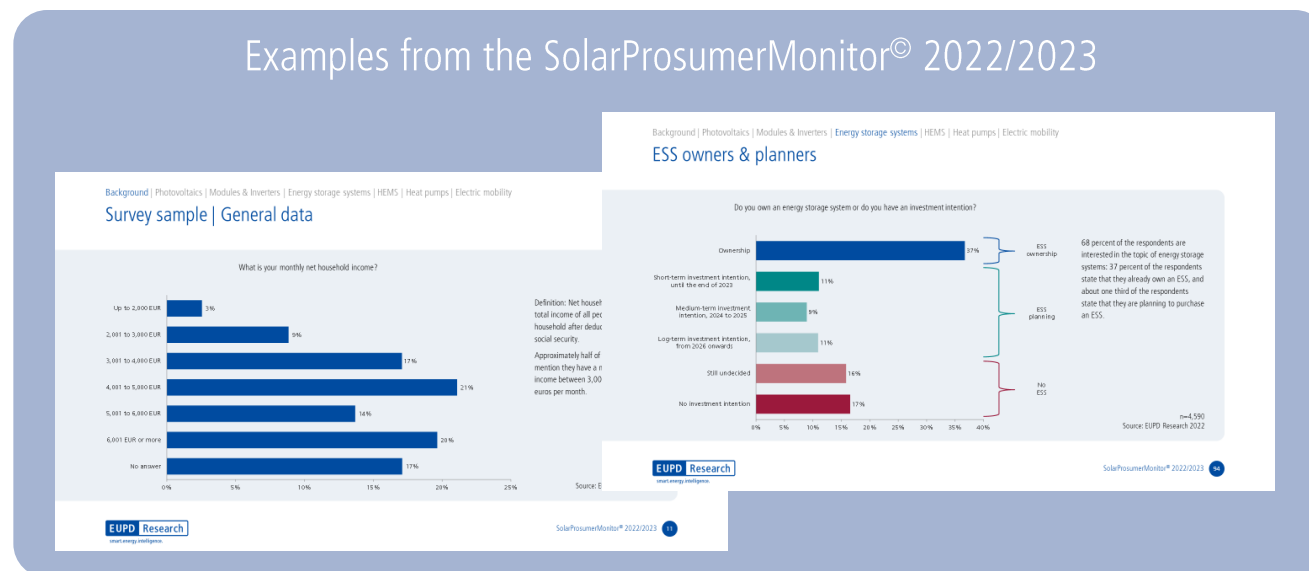
Sample Description

The sample description is an important part of the analysis and plays a crucial role in guaranteeing the accuracy and validity of the survey results. In this section we will describe the sample size and the demographic characteristics of the surveyed installers.

Understanding the prosumers

- ✓ Get to know prosumers and learn how their household is characterized

Examples from the SolarProsumerMonitor© 2022/2023



Ownership of technologies

In addition, for each technology, the report presents how many prosumers in the sample have already installed or plan to acquire a respective technology.



Overview – Photovoltaics

- PV owners & planners*
- PV installation
- Sourcing of information & customer opinions
- Financing
- PV self-consumption*
- Post-EEG*

Understanding the prosumers

- ✓ Measure the percentage of prosumers who buy your products and solutions

*Only in the SolarProsumerMonitor® Germany.

Perception of technologies



Overview – Modules

- Brand awareness
- Brand selection
- Brand purchase
- Purchase realization
- Recommendation



Overview – Inverters

- Brand awareness
- Type of inverter
- Brand purchase
- Recommendation

Understanding the portfolios

- ✓ Analyze how exclusively your brand is positioned

*Only in the SolarProsumerMonitor® Germany.

Perception of technologies

Overview – Energy storage systems

- ESS owners & planners*
- Brand awareness
- Brand selection
- Brand purchase
- Purchase realization
- Recommendation

Overview – HEMS

- HEMS owners & planners*
- Brand awareness
- Brand purchase
- Recommendation

*Only in the SolarProsumerMonitor® Germany.

Understanding the portfolios

- ✓ Follow the path and development from a rarely bought niche product to a frequently-demanded brand

Perception of technologies



Overview – Heat pumps

- Heat pump owners & planners*
- Sourcing of information & customer opinions
- Brand awareness
- Brand selection
- Brand purchase
- Recommendation

Understanding the portfolios

- ✓ Optimize brand communication and positioning

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Perception of technologies



Overview – BEV

- BEV owners* & planners*
- Brand awareness*
- Brand selection*
- Brand purchase*
- Recommendation*



Overview – Charging stations

- Charging station owners & planners*
- Brand awareness
- Brand selection
- Brand purchase
- Recommendation

Understanding the portfolios

- ✓ Analyze how many prosumers combine their PV system with electric mobility

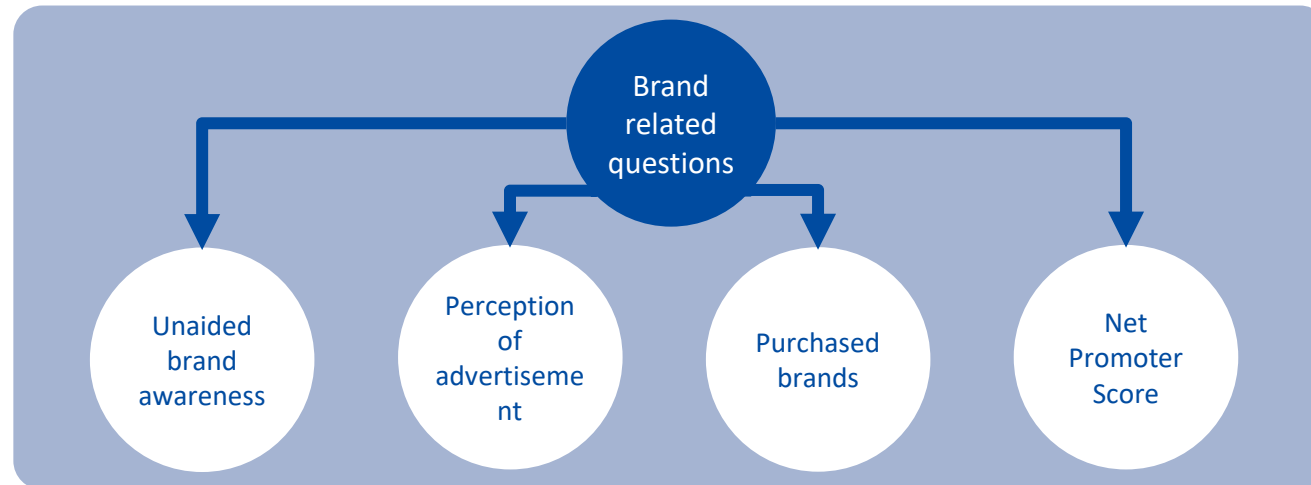
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Brands of the different technologies

The topic "brands" is considered for all surveyed technologies and provides valuable information from the prosumer's perspective.

Content will include:

- Unaided brand awareness
- Perception of advertisements of the brands
- Purchased brands
- Recommendation of brands (Net Promoter Score)

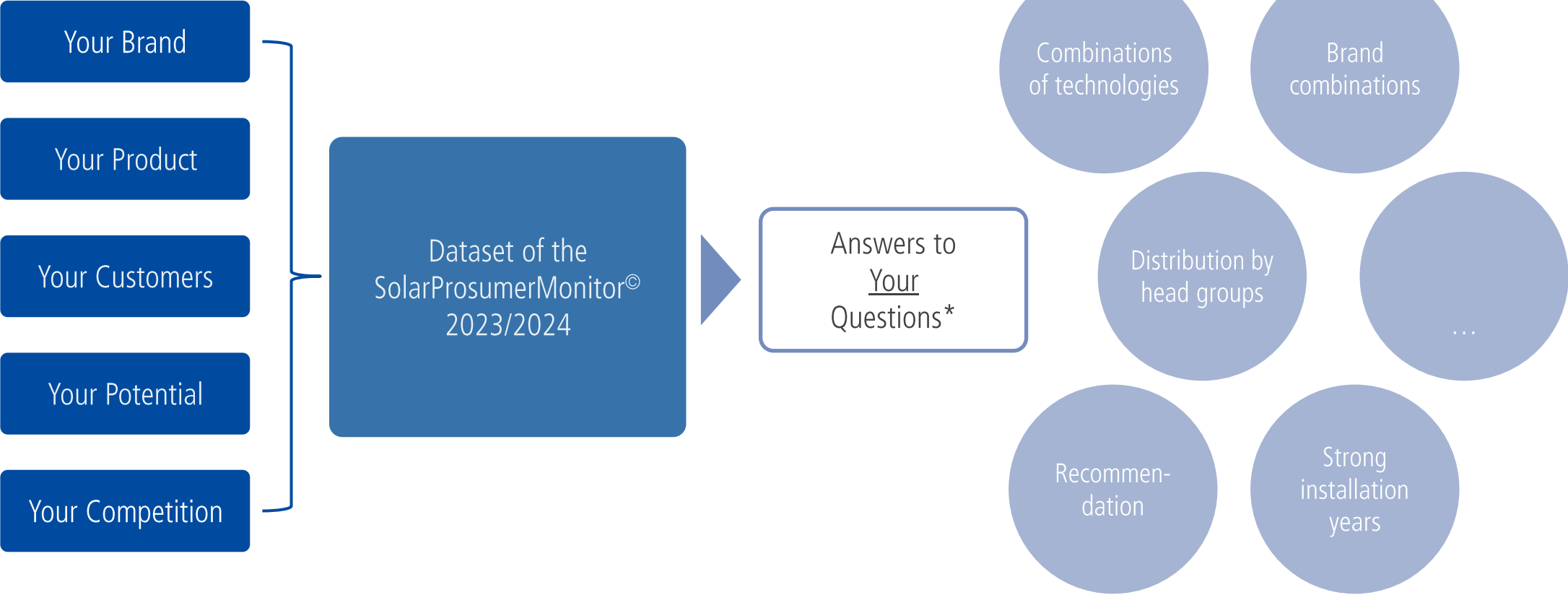


Understanding the customer's choice of brand

- ✓ Measure the percentage of prosumers who buy your products
- ✓ Analyze whether prosumers perceive advertising from your brand
- ✓ Clarify if prosumers have chosen your brand or if your brand was just a considered brand at the beginning of the purchase process

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Company-specific analysis | Dataset with further potential

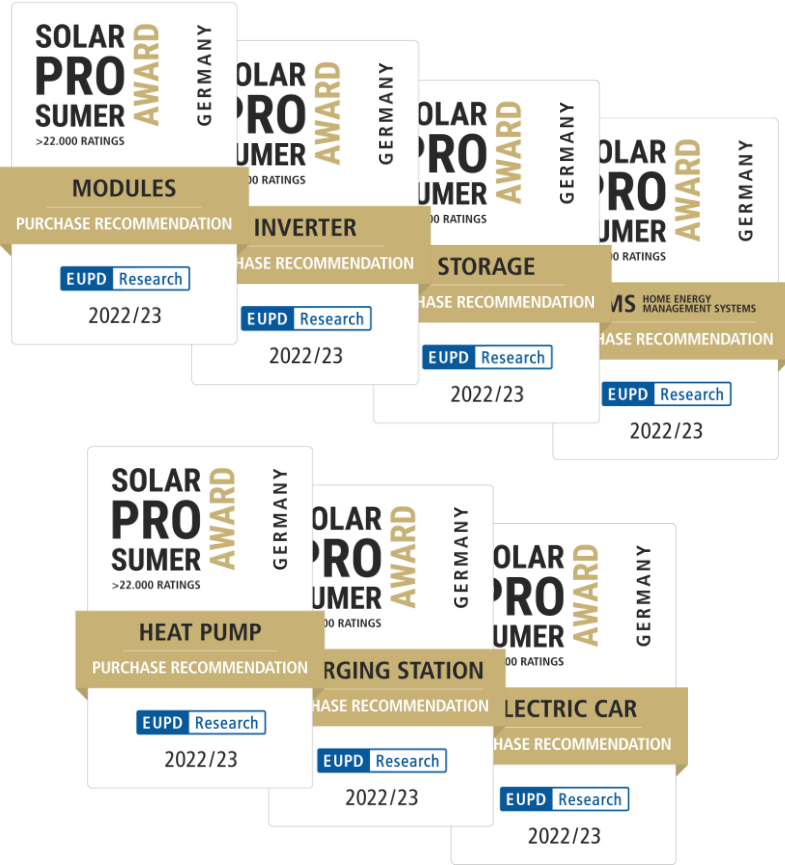


*Example questions | depending on the number of customers/interested parties.

Additional products | SolarProsumerAward[©]

- Modules
- Inverters
- Energy storage systems
- HEMS
- Heat pumps
- Charging stations
- Electrical cars*

Award based on product evaluations and recommendations from the survey of the SolarProsumerMonitor[©]



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Hereby we order (please tick):

| Study | Price |
|--|----------------|
| <input type="checkbox"/> SolarProsumerMonitor[©] 2023/2024 EUROPE (around 200 slides with graphics in English) | 8,900 € |
| <input type="checkbox"/> SolarProsumerMonitor[©] 2023/2024 GERMANY (around 200 slides with graphics in English) | 7,900 € |
| <input type="checkbox"/> Online Presentation of the results | 900 € |
| <input type="checkbox"/> Personal Presentation of the results at the customer site (+ travel costs) | 1,900 € |
| Please notice: Payment terms: 100% upon order. All prices plus VAT and travel expenses. | |

Please scan and e-mail to: l.ganz@eupd-research.com

Name: _____

Company: _____

Street: _____

ZIP-Code & City: _____

Phone: _____

E-Mail: _____

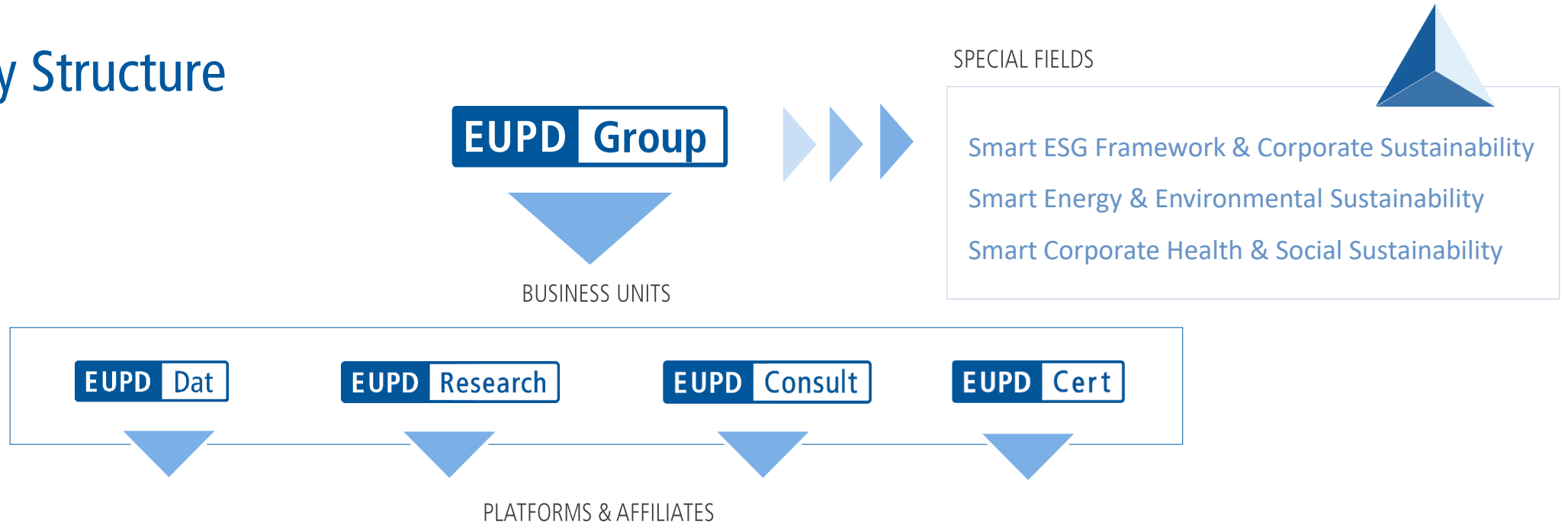
Tax-ID: _____

We accept the general terms and conditions (pages 29 and 30)

Signature: _____

About EUPD Research

Company Structure



EUPD Energy Portfolio

EUPD Research

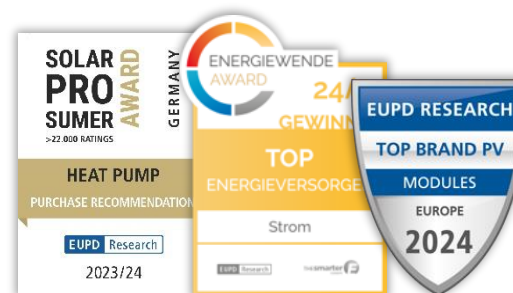
Reports

- [Global Energy Transition GET-MATRIX[©]](#)
- [Electrical Energy Storage Report Europe[©]](#)
- [PV InstallerMonitor[©] | EES InstallerMonitor[©]](#)
- [EV Charging Stations InstallerMonitor[©]](#)
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Certification

- [Top Brand PV](#)
- [Top Brand PV - EPC & Project Developers](#)
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- [Top Innovation Award](#)
- [Customer Satisfaction Seal](#)
- [Energy Transition Award](#)
- [SolarProsumerAward](#)



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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Imprint

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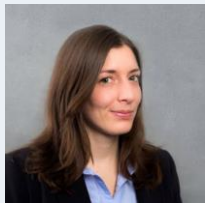
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General terms and conditions of business 1/2

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 Research 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.

General terms and conditions of business 2/2

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.

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 Research 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 Research 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.