

EndcustomerMonitor 11.0

The German PV market from the perspective of end customers: Survey among 2,000 PV owners and planners

Focus: E-Mobility and Energy Management



Multi Client | EUPD Research | October 2021

The core competence for a successful market positioning is the **end customers' perception of manufacturers**, their products and services. Simply put, it refers to what end customers associate a brand with and an understanding what drives or hinders a buying decision.

For the eleventh time in a row, EUPD Research surveyed German photovoltaic end customers in the product areas of **photovoltaics, storage, electric mobility and energy management**.

The classic topics of **brand awareness, brand choice and recommendation** are once again an integral part of the study. This year, the focus is also on electric mobility and energy management. More than **2,000 PV system owners and planners** have participated in the survey.

The study provides comprehensive insights into the German PV and storage market as well as into the charging landscape of electric vehicles. Based on the purchase process, the EndcustomerMonitor provides valuable support in adapting business strategies and in fine-tuning your individual product and service portfolio.

FOCUS: E-MOBILITY AND ENERGY MANAGEMENT

With this year's focus on electric mobility and energy management, the current study picks up on the strong trend towards home charging of inexpensive, locally generated green electricity. Moreover, energy management and the use behaviour of self-generated energy are highlighted.

Within the chapter on **electric mobility**, we examine both the potential of this industry and the buying process. One of this edition's most important topics is the charging infrastructure with a particular focus on purchase intentions for home charging stations.

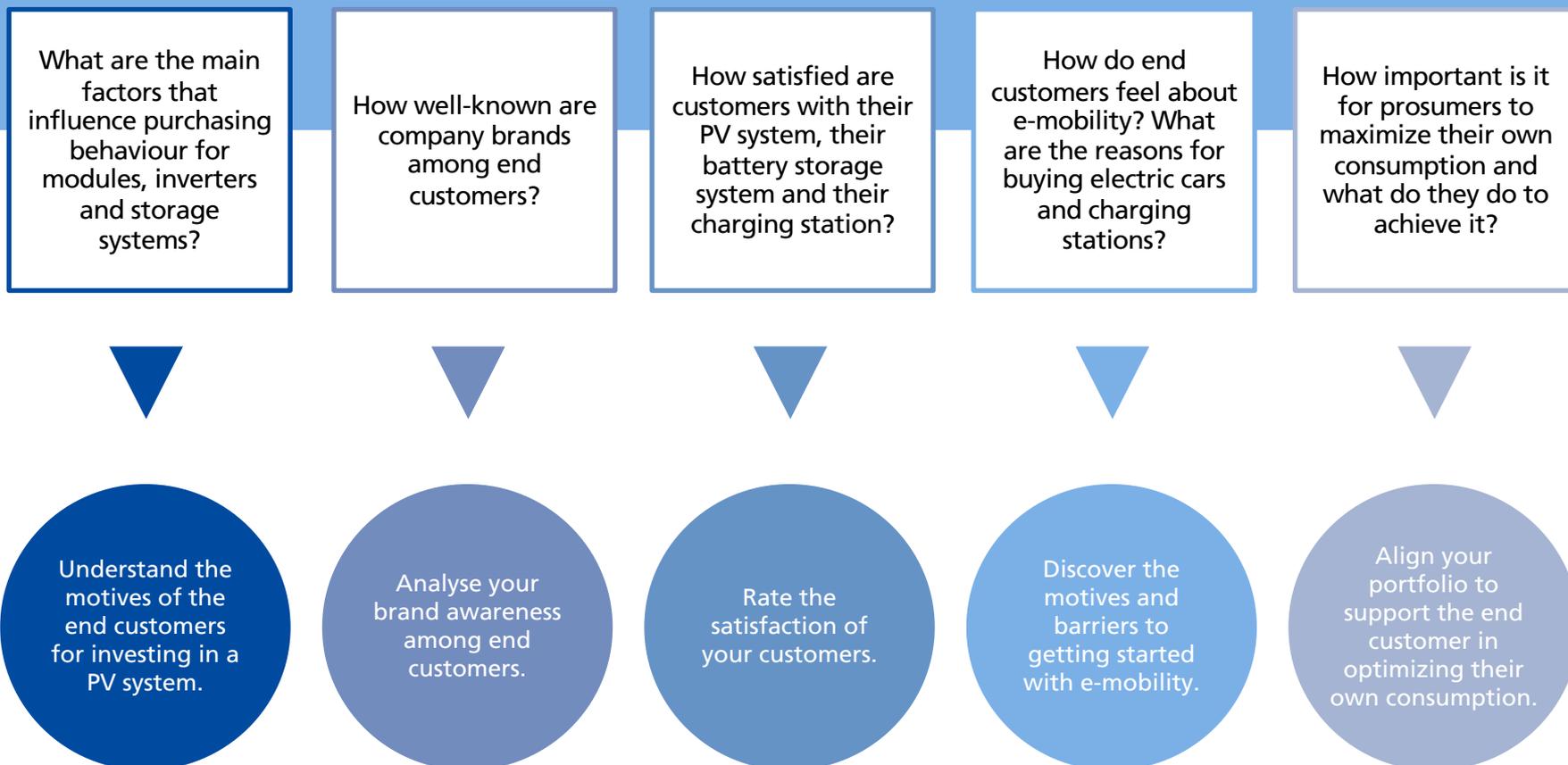
With regard to **energy management**, the purchasing process and use cases are also analysed. Additionally, requirements of German end customers for Home Energy Management Systems (HEMS) are assessed.

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TRACK RECORD COVERING THE ESSENTIAL TOPICS

<p>2011</p> <ul style="list-style-type: none"> ▪ Buying process ▪ Unused demand potential ▪ Brand awareness <p>n=641</p>	<p>2012</p> <ul style="list-style-type: none"> ▪ Importance of brands in the purchase decision ▪ Demand for specific storage solutions ▪ Knowledge of service offerings <p>n=1.607</p>	<p>2013</p> <ul style="list-style-type: none"> ▪ Battery storage: Awareness, demand, provider ▪ Services: Maintenance and insurance ▪ PV kits <p>n=3.000</p>
<p>2014</p> <ul style="list-style-type: none"> ▪ Smart Home: Manufacturer, use, settings ▪ Battery storage: Guarantee, security, retrofit ▪ PV technology: Modules and inverters <p>n=4.394</p>	<p>2015</p> <ul style="list-style-type: none"> ▪ Buying process: Information, motivation, buying factors ▪ Battery storage: Brands, barriers, diffusion ▪ PV technology: Modules and inverters <p>n=807</p>	<p>2016</p> <ul style="list-style-type: none"> ▪ Usage behaviour: Self-consumption, service, post-EEG ▪ Battery storage: System combination and retrofit ▪ PV technology: Modules and inverters <p>n=800</p>
<p>2017</p> <ul style="list-style-type: none"> ▪ Battery storage: Brand landscape and system services and electricity products ▪ PV technology: Modules and inverters ▪ Additional chapter time series <p>n=776</p>		
<p>2018</p> <ul style="list-style-type: none"> ▪ Battery storage: Brand landscape, financing, cloud solutions ▪ E-Mobility: Use, motives to buy, wall boxes ▪ Energy management systems <p>n=708</p>	<p>2019</p> <ul style="list-style-type: none"> ▪ Digitization: Potential and current trends ▪ Post-EEG: Retrofit, electric mobility, quality and warranty claims <p>n=1.785</p>	<p>2020</p> <ul style="list-style-type: none"> ▪ E-Mobility: Potential, purchasing process and buying intentions for wall boxes ▪ Storage Solutions: Purchasing process and use cases <p>n=3.000</p>

Successful operations require holistic reflection and precise analyses:



The central element of the study is a **primary data based survey** that was carried out in form of a quantitative online survey among PV planners and owners.



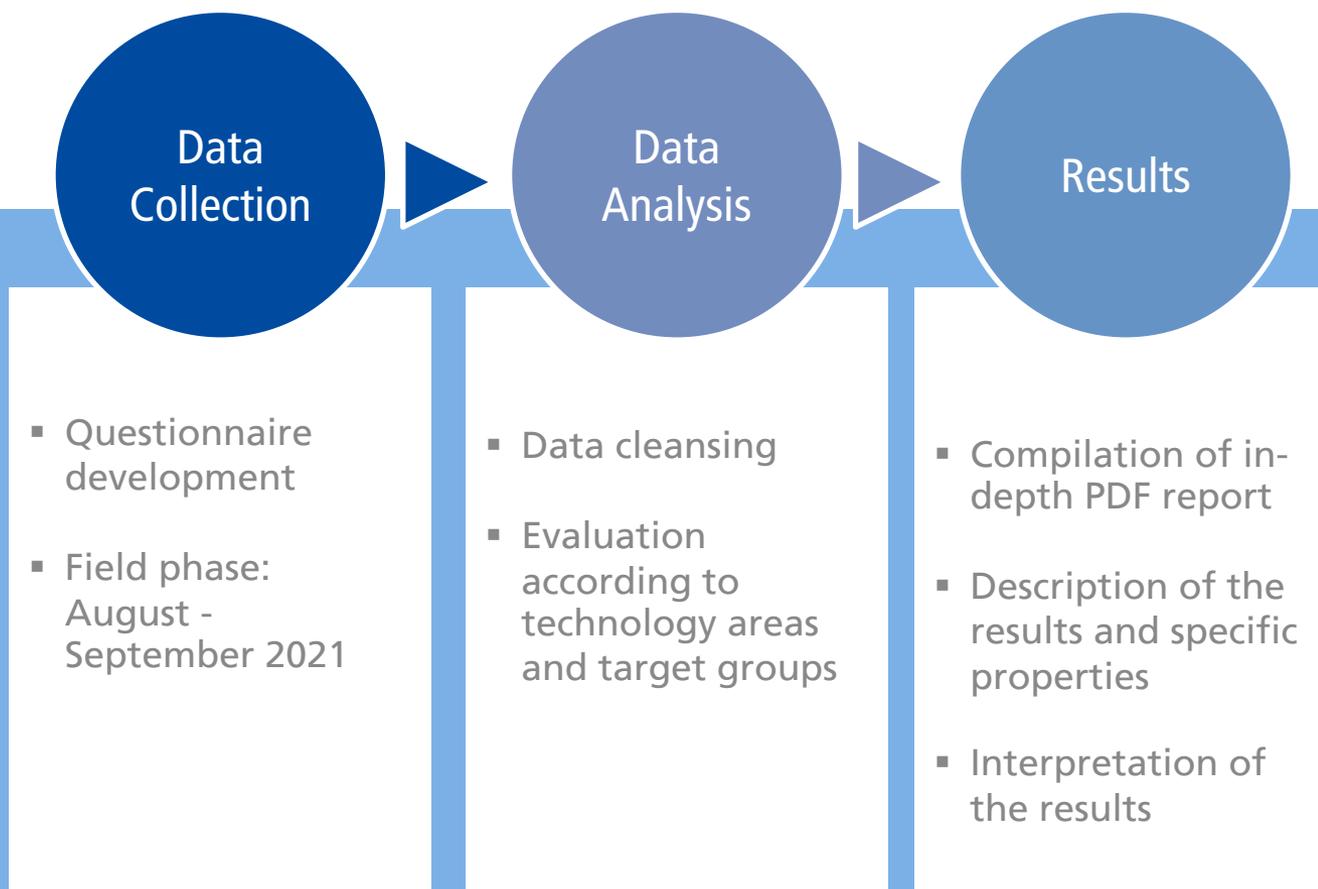
Data Collection

Survey: Approx. 2,000 PV owners and planners

PV planners and owners regularly report to us on their experiences with manufacturers, products and solutions. As part of the most recent survey, we again succeeded in receiving well-founded feedback from around 2,000 very well-informed end customers.

Our successfully proven approach ensures an objective, flexible and cost-efficient survey. The questionnaire is based on open and closed questions to generate a great wealth of data for in-depth analyses.

The study offers a comprehensive overview of the German PV market and provides forensic insights into the end customer's point of view.



The study offers exclusive information from an end customers' point of view regarding:

- PV modules
- PV inverters
- Energy storage
- Heating systems
- Wall box
- Home Energy Management Systems (HEMS)
- Cloud & community Solutions
- Intelligent measuring systems (smart meter)

Get answers on:

Competitive positioning

Fine-tuning of business strategies

Alignment of product portfolio

End customers' view points

Assessment of brand perception

The study reveals profound information on the end customers' decision making process:

- Characteristics:
Age, income, equipment of the house, PV system, consumption, living situation, ownership status
- Information channels:
Web pages, forums, social media, installers, articles in newspapers/ magazines, etc., utilities, portals, etc.
- Purchasing sources:
Direct, indirect, internet, installer, utility, retail, etc.
- Duration of information gathering and buying decision making process

Your added value:

Differentiate from competition

Re-design of communication strategies

Selection of most effective communication channels

Identification of effective intermediaries

Assessment of marketing and communication

A. Background

1. EndcustomerMonitor 11.0 – Subjects
2. Method & Description of Head Groups
3. Sample

B. Characterization of end customers

1. PV-System & Consumption
2. Living Situation
3. Heating System
4. E-Mobility

C. PV-Technics: Modules and Inverters

1. Brand Awareness
2. Buying Behaviour
3. Satisfaction

D. Energy Storage

1. Installation
2. Brand Awareness
3. Buying Behaviour
4. Satisfaction

E. E-Mobility

1. Mobility Behaviour
2. Buying process of an electric car
3. Charging at home

F. Trends of Home Energy

1. Energy Management
2. Smart Meter
3. Cloud- und Community Tariffs

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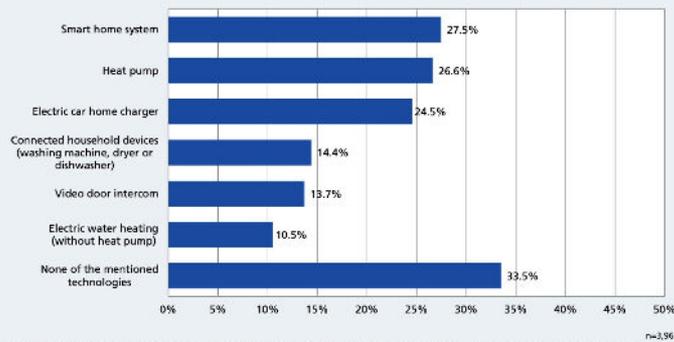
Background | Characterization | PV technology | Battery storage | Electric mobility

PV systems & consumption – Equipment of the house (1/3)

27,5% of the respondents state that they own a smart home system. Almost the same amount of respondents owns a heat pump. About one quarter of the PV system owners and planners state that they have a charging system for an electric car.

Source: EUPD Research 2020

How is your house technically equipped? (multiple responses)



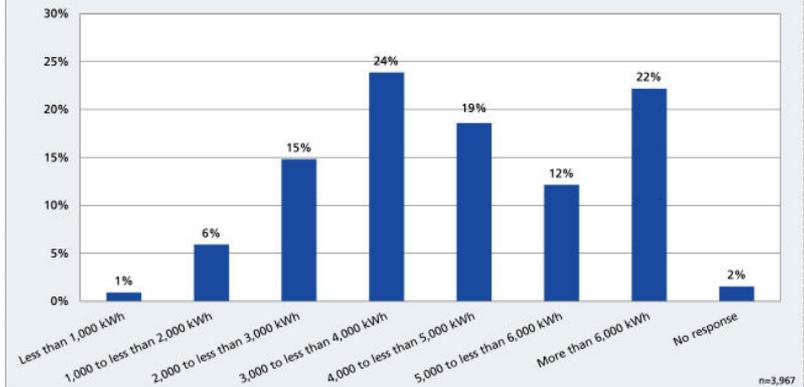
Background | Characterization | PV technology | Battery storage | Electric mobility

PV systems & consumption – Electricity consumption

With 58% of the surveyed PV system owners and planners, the majority consumes between 2,000 and 5,000 kWh of electricity annually.

Source: EUPD Research 2020

What is your average annual electricity consumption?



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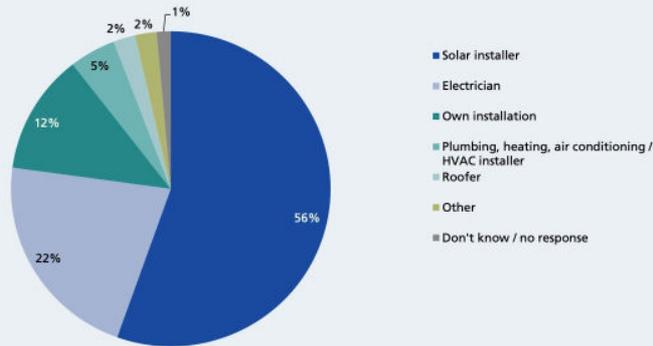
Background | Characterization | PV technology | Battery storage | Electric mobility

Photovoltaics – Installer

56% of the interviewees had their PV system installed by a solar installer. Another 22% of the PV end customers commissioned an electrician. 12% of the respondents installed the PV system themselves.

Source: EUPD Research 2020

Which trade is the craftsman or craftswoman associated with that installed your PV system?



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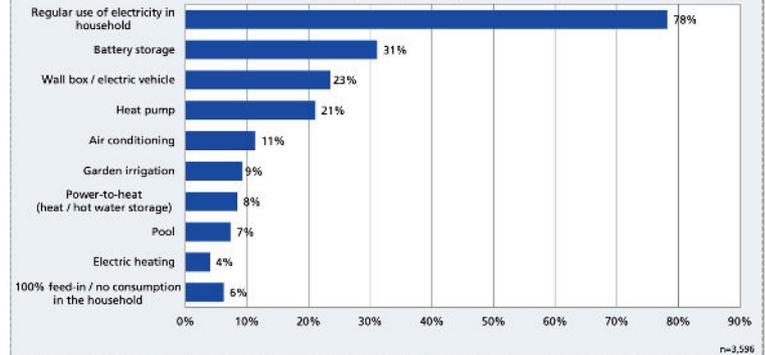
Background | Characterization | PV technology | Battery storage | Electric mobility

Photovoltaics – Self-consumption (1/3)

78% of the surveyed end customers regularly use the self-generated PV electricity in their homes, whereas 31% of the households use a battery storage to capture the self-generated electricity.

Source: EUPD Research 2020

Where do you or are you planning to use the produced PV electricity in your household? (multiple responses)



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We hereby order (please tick):

Study	Price
EndcustomerMonitor 11.0© Focus: E-Mobility and Energy Management	<input type="checkbox"/> 4,900 €
Online presentation of the study results	<input type="checkbox"/> 800 €
Please notice: Payment terms: 100% after receipt of order. All prices plus VAT and travel expenses.	

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By email

l.ganz@eupd-research.com

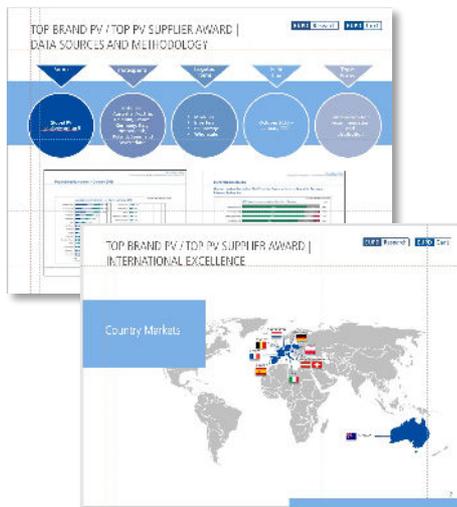
to Leo Ganz | Partner

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- Competition Analyses
- Product Analyses
- Price Analyses



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- Energy Transition Award



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