

Market Monitor Charging Stations for Electric Vehicles in Germany 2021

Shared Service | EUPD Research | October 2021



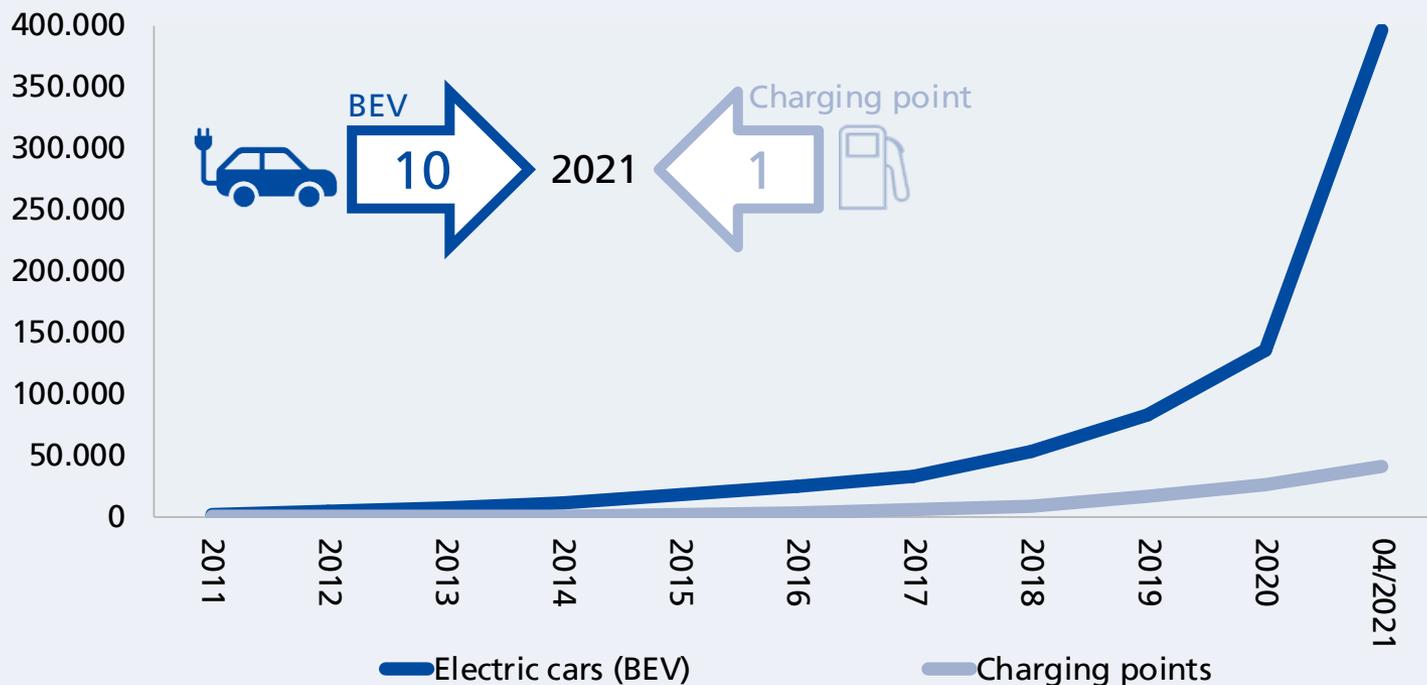
On the one hand, the number of EV registrations is booming...



... on the other hand, the offer of public charging stations remains low...

Source: EUPD Research (2021) based on Kraftfahrtbundesamt (2021) and Bundesnetzagentur (2021)

Comparison of the development of the number of registered electric cars against that of charging points



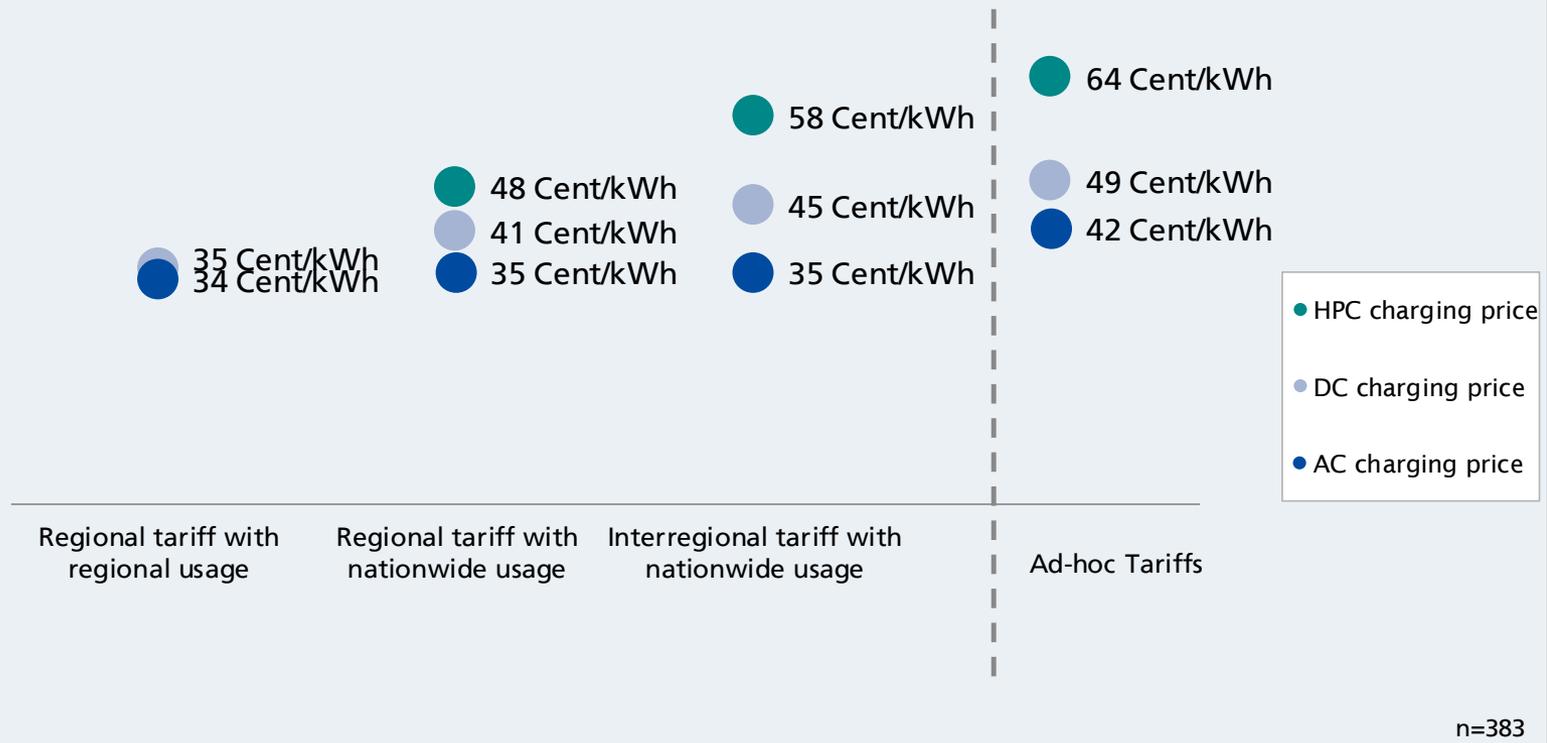
The development of a public charging infrastructure requires high investment costs...



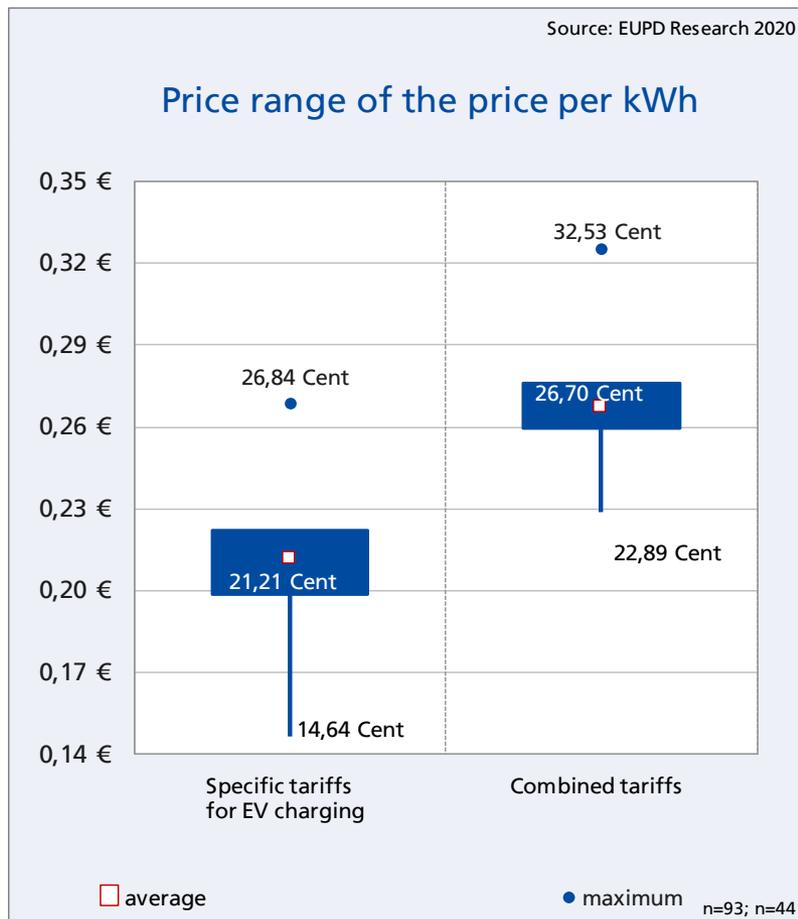
... that translate into constantly increasing charging tariffs.

Source: Vergleichsanalyse mobiler Ladestromtarife 2021 from EUPD Research

Average price per kWh by tariff category

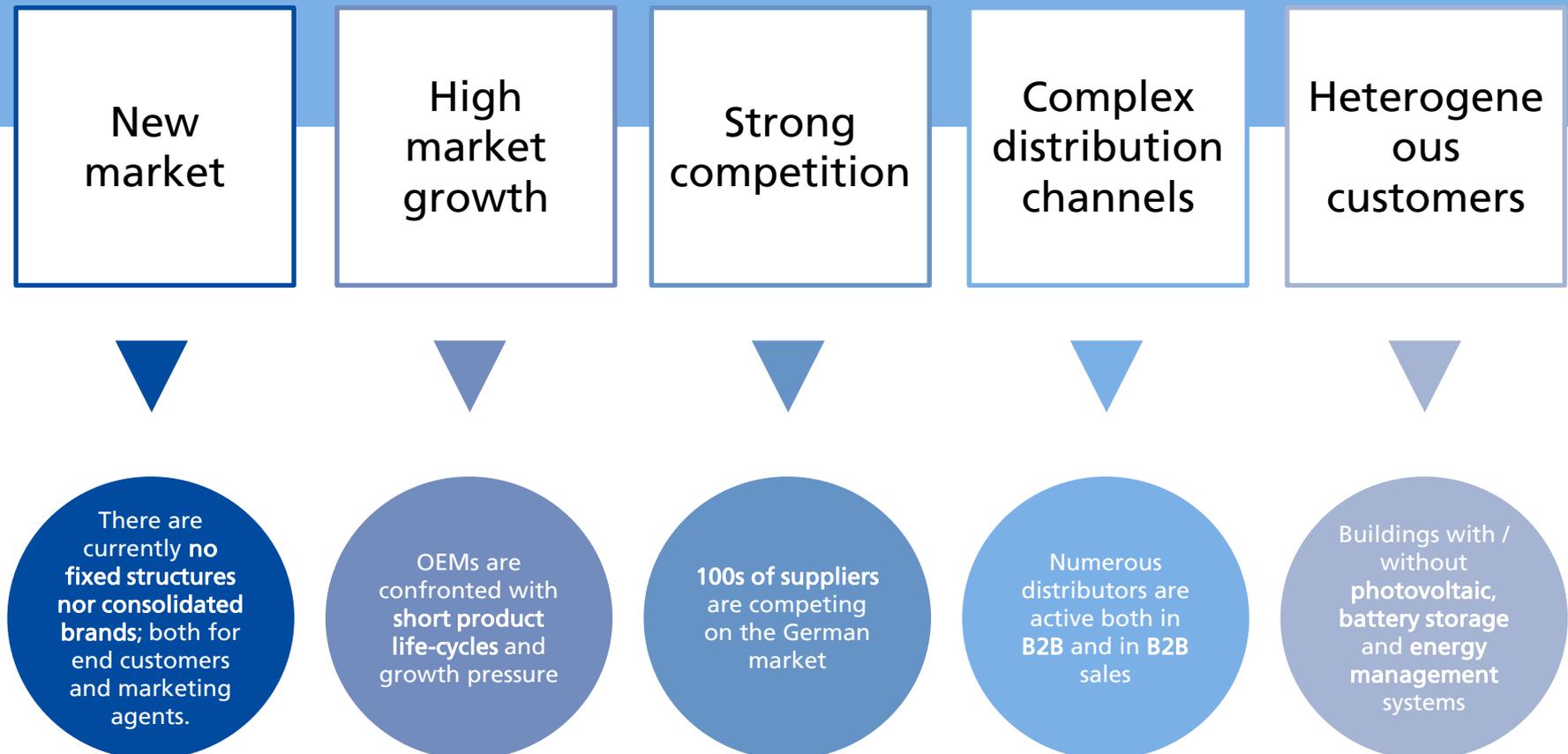


Home charging is a convenient and sustainable option



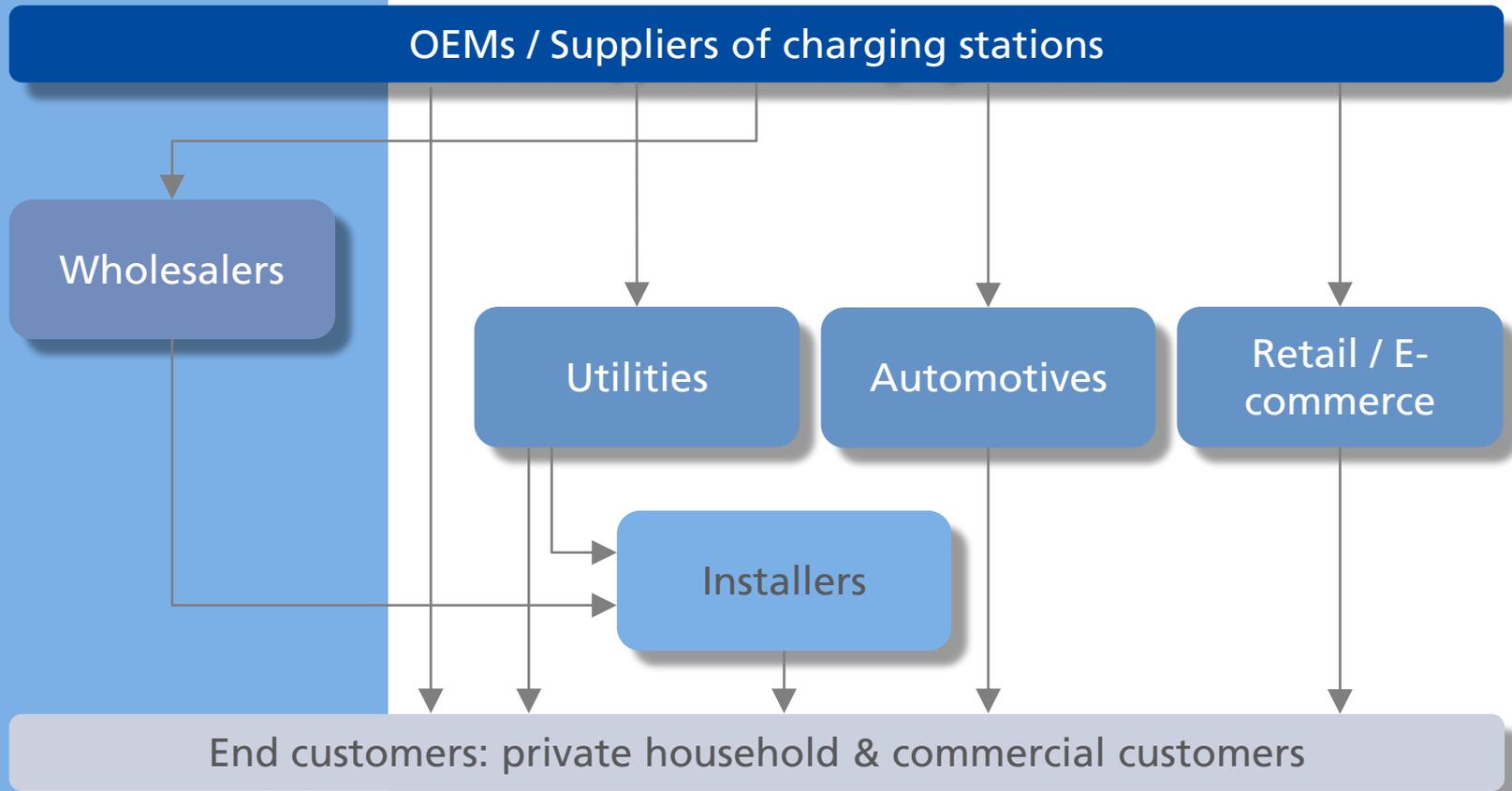
- Dedicated EV charging tariffs guarantee substantial savings compared to charging with standard electricity tariffs.
- More than 100 utilities are already offering electricity tariffs designed for home charging.
- Charging an EV with the electricity generated by a photovoltaic system reduces electricity cost down to 10 Eurocent per kWh.

Market actors are facing various challenges:



Market Monitor Charging Stations for Electric Vehicles in Germany 2021[©] | METHODOLOGY & APPROACH

More than 100 suppliers are addressing the needs of end customers through different sales channels



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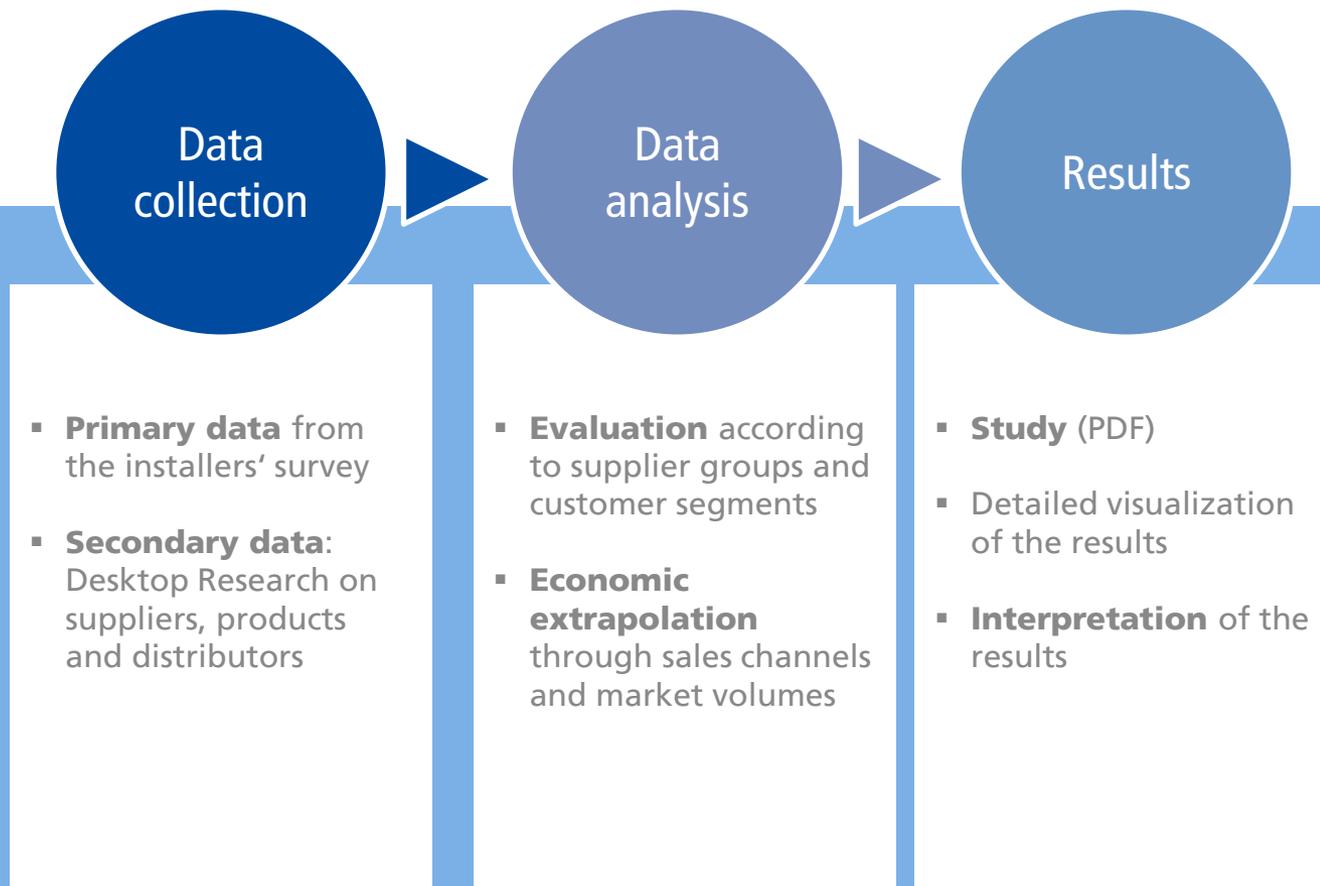
This study relies on the data collected through a **survey conducted among electric installation companies** that have already dealt with the installation of wallboxes.

Data collection

- Overall sample size: **60.000 Electric installation companies**
- Wallbox suppliers: **100+ suppliers**
- Wallbox models: **300+ models**
- Survey coverage: **400 Electric installation companies**
(representatives for the overall sample)
- Survey typology: **CATI Interviews**
(Computer Assisted Telephone Interview)

Market Monitor Charging Stations for Electric Vehicles in Germany 2021[©] | METHODOLOGY & APPROACH

This study offers a comprehensive overview of the German market for charging stations and provides detailed insights from the perspective of both installers and end customers.



Market Monitor Charging Stations for Electric Vehicles in Germany 2021[©] | ADDED VALUE

The study offers exclusive insights regarding:

Market players

Products

Distribution channels

Drivers & Barriers

Market structures

Providing added value for the implementation of:

Efficient marketing campaigns

Optimal product positioning in the portfolio of retailers and installers

Price optimization

Comprehensive market overview and forecast

Service packages tailored to the target groups

Market Monitor Charging Stations for Electric Vehicles in Germany 2021[©] | CONTENT OF THE STUDY

1. Market overview charging stations for EV in Germany

- a. Suppliers and providers of charging stations
- b. Product overview and comparison
- c. Retail and marketing
- d. Customer segments

2. Procurement management

- a. Procurement channels of installers
- b. Procurement channels of end customers
- c. Market Map: distribution structure for charging stations

3. Product analysis

- a. Brands
- b. Technology
- c. Installation
- d. Price
- e. Service
- f. Customer satisfaction

4. Buying process

- a. Motives
- b. Information gathering
- c. Drivers & Barriers

5. Market analysis

- a. Framework conditions
- b. Market volume 2020
- c. Market forecast

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1. MARKET OVERVIEW CHARGING STATIONS

The chapter dedicated to the market overview introduces the topic and provides the prerequisites for the following analyses, more specifically, the total volume of charging stations installed in Germany including their suppliers, providers and distributors is presented. Basic information regarding suppliers and providers are combined together with their area of activity and product portfolio.

In the product overview all charging stations installed in Germany are listed differentiating between power classes, and comparing technical and service parameters. In the section focusing on retail and marketing all active marketing agents are researched and categorized. In addition to classic wholesalers (electrical, photovoltaic), energy suppliers also offer charging stations. Finally, charging stations can also be purchased through various online platforms.

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2. PROCUREMENT MANAGEMENT

The chapter dedicated to procurement management focuses on the process that brings charging stations from suppliers to end customers; differentiating between a two-stage sales approach (direct purchase from suppliers) and a three-stages sales approach (through wholesale, marketing agents, energy providers etc.).

The different supply channels are analysed considering their relevance and benefits they provide to end customers, based on the information collected through the installers' as well as the end customers' survey. Moreover, a deeper evaluation of the wholesale channel is carried out based solely on the results of the installers' survey.

The results from the market overview, the market analysis in chapter 5, as well as data from the installers' survey are being pooled into a market map. The latter exhibits the detailed amounts of charging stations delivered through the different distribution channels by customer group and by type of installation company.

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3. PRODUCT ANALYSIS

Brand

- Unaided brand awareness (Supplier, product)
- First 5 mentioning

Technology

- Product type (charging pole, wallbox)
- Power class (one/three phases; 3.7 to 4.6 kW, 11 kW, 22 kW)

Installation

- Place of installation (single or multi-family dwelling, company, public space, car park → house wall, garage, carport etc.)
- System configuration (PV, battery storage, smart home etc.)

Prices

- Product price charging station (by type and power class)
- Cost distribution (charging station, installation costs, meter, costs for other components)

Service

- Offer of an app for charging management
- Offer of specific charging tariffs

Customer satisfaction

- Importance and satisfaction with product and suppliers' service
- Probability of recommendation (Net Promoter Score)

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4. BUYING PROCESS

In this chapter the results from the installers' survey are presented according to each single step of the buying process. Including motives, drivers and barriers as well as information gathering. Further, the analysis is carried out differentiating between the different customer groups.

Motives

- Visualization and evaluation of end customers' buying motives from the perspective of the installers

Information gathering

- Information sources and their relevance for buyers of charging stations
- Information sources for installers

Drivers & Barriers

- Public subsidies (knowledge, offer, evaluation)
- Service offer from suppliers to installers (partner programs, technical trainings for charging stations, marketing support)

Customer groups

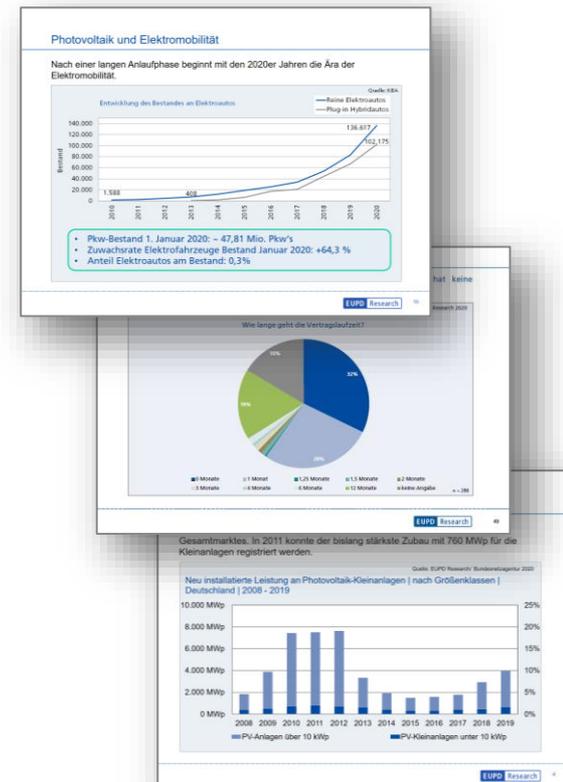
- Private households, companies, public sector

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5. MARKET ANALYSIS

The results obtained through the survey and desktop research are merged in the market analysis chapter. Moreover, framework conditions specific to the German market for charging stations are described. This includes available national and regional subsidies. Finally, EV registration figures are displayed.

The economic extrapolation exhibits the total number of charging stations installed in Germany in 2020. By combining this data with prices the 2020 market volume in Euro is calculated. Finally, the market forecast for the installation of charging stations in Germany is obtained by taking into account the installers' survey results, as well as the forecasted registration figures for electric autos.

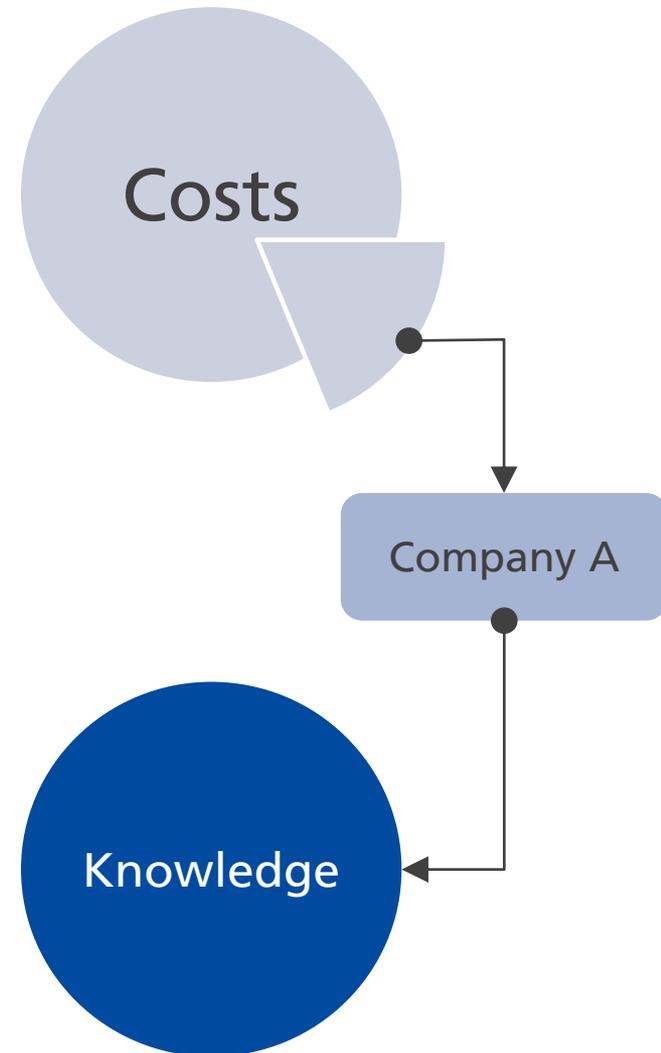


Market Monitor Charging Stations for Electric Vehicles in Germany 2021[©] | SHARED SERVICE

Invest and profit together!

The realization of the „Market Monitor Charging Stations for Electric Vehicles in Germany 2021“ requires substantial investments for design, questionnaire, installers survey, secondary research, analysis and study realization.

Participation through the Shared Service allows a reduced number of clients to share costs and obtain exclusive access to the complete results of the study.



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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 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.

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.

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 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 may be 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.

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

5.5 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 2017