EuPD Research

I International Solar

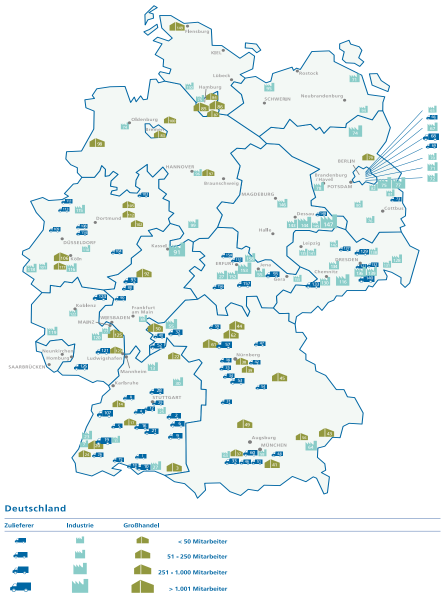
PV InstallerMonitor© 2008/2009

The procurement management of installers in Germany – trends, factors of success and best-practice cases

EuPD Research | Shared Services

0125-1-5-01

Agenda


Deutschland
Zulieferer
Industrie
Großhandel
< 50 Mitarbeiter
51 - 250 Mitarbeiter
251 - 1.000 Mitarbeiter
> 1.001 Mitarbeiter

I. Background

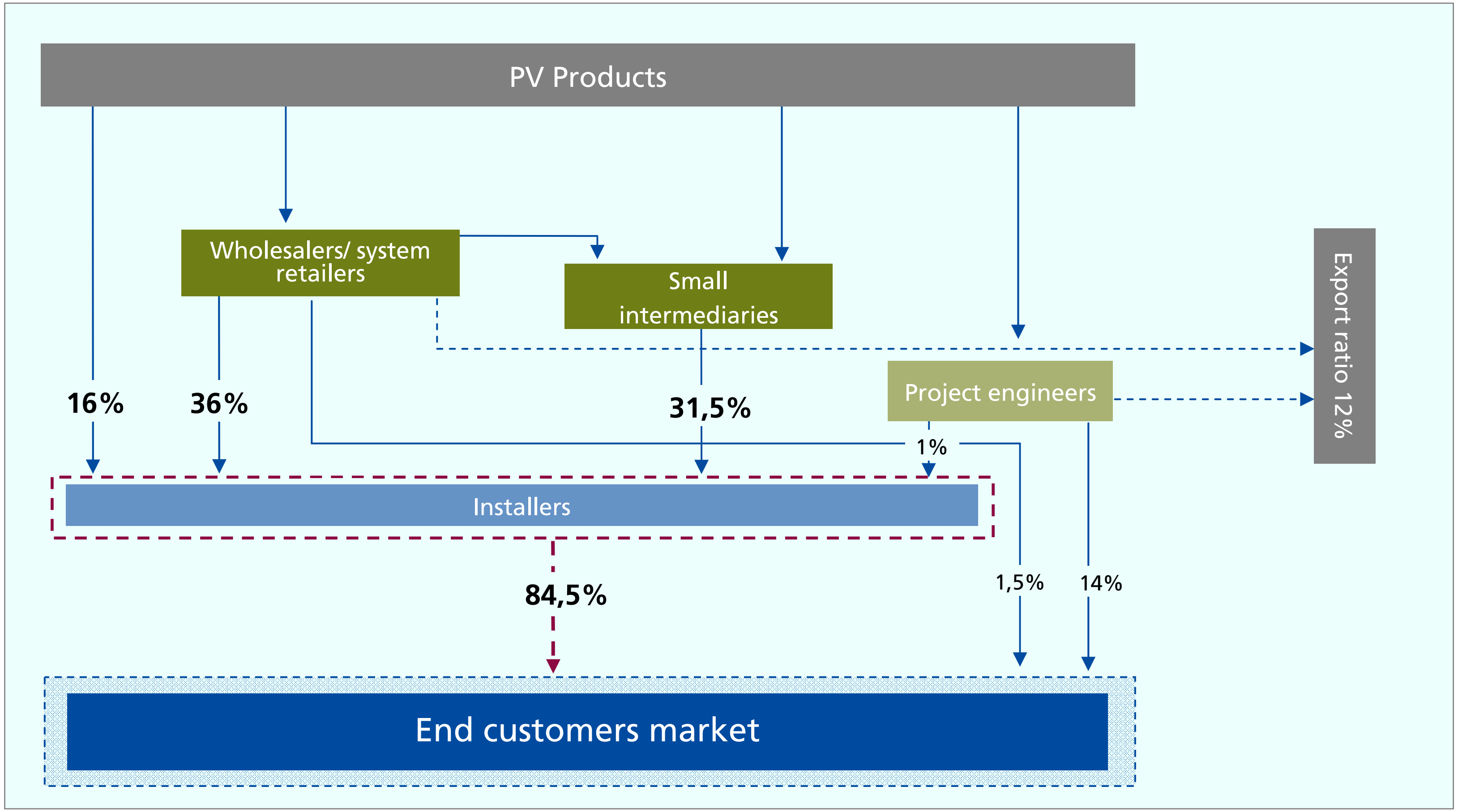
At the moment, the PV sector especially considers southern European countries like Italy to be “hot markets“. In many cases, however, it is forgotten that the German PV market is and for the time being remains the real mainstay of the global success story. There is no market in the world in which there is such a variety of market segments and niche applications as in Germany. Nowhere else is the product variety as large and nowhere are there more sales intermediaries. At the same time, the diffusion process and market penetration have progressed further than in other relevant national markets.

Against this background, EuPD Research will analyze the current developments on the German sales market, for the second time, in the form of the “PV InstallerMonitor©”. Installers in Germany play an important role as intermediaries between the producers and their products, as well as the end customers. That is why they form the ideal target group for inquiries into the developments on the sales market. While last year the relationship of installers to individual end customers was given priority, this year’s focus lies on the relationship between suppliers and purchasers. To be specific, the subject is procurement management by installers in the reflection of a soon-to-be improved product availability and a degression-induced pressure on margins from 2009 on.

By and large, EuPD Research expects significant changes in this web of relations towards existing supply structures. For module and inverter producers, system retailers, and wholesalers the right sales channel management (key word: “channel architecture“) therefore takes a notable role in the creation of strategic success potentials. The analysis will serve as an important support in evaluating the optimal positioning of these companies in Germany.

II. Installers Gate Keepers for the German PV Market

The results of the study from 2007 show that about 85 percent of modules in the German market reach the end customers market via the installers. This trend has even grown stronger compared to 2006. Accordingly, installers were not just able to secure their importance in the German PV sales chain towards earlier years, but even extend it a little.



III. Objective

The growing competitive pressure in the photovoltaic sector makes it necessary to recognize and consider expectations, trends, and the competitive situation regarding the most important group of sales intermediaries – the installers.

Main objectives of the survey:

1. The display and evaluation of the sales market in Germany based on the quantitative survey of PV installers (trends, market segments, market shares, yield requirements, etc.)
2. The evaluation of existing and future procure management patterns in the different trades
3. The development of significant success factors in the relationship between suppliers and purchasers (payment conditions, delivery reliability, delivery quantity)
4. The derivation of strategic success potentials for the most important market segments (composition of product portfolio, number of suppliers)
5. The current positioning of selected module and inverter producers, system retailers and wholesalers as compared to the total market (benchmark)

IV. Benefits of the Product for Your Company

The "InstallerMonitor© 08/09" will provide your company with decisive competitive advantages. Selected benefits are that you can...

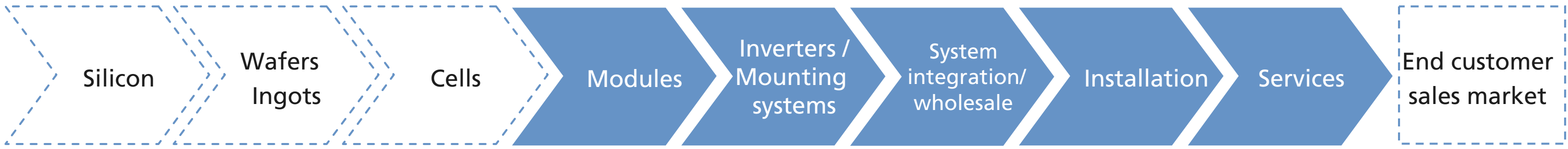
- gain an overview of the most important brands and suppliers from the installers' perspective.
- understand the requirements of the installers regarding systems, suppliers and manufacturers.
- takes measures for positioning your company in the market that are optimally adjusted to the installers' demands.
- use detailed information on current trends in the German PV market for creating an offer that is targeted to consumers in an optimum way.

The intensity with which the topic is dealt with in the product:*

Framework	■□□
Competitors	■■□
B2B Customers	■■■
End Customers	□□□
Product / Brand	■□□
Price	■■□
Distribution	■■■
Communication	■□□

* ■□□ low ■■□ medium to high ■■■ very high □□□ (The product does not deal with the topic.)

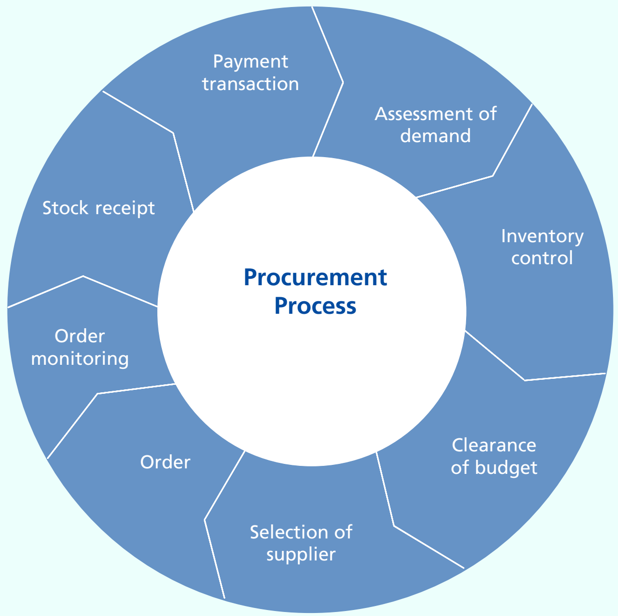
The product deals with the following levels of the value chain:

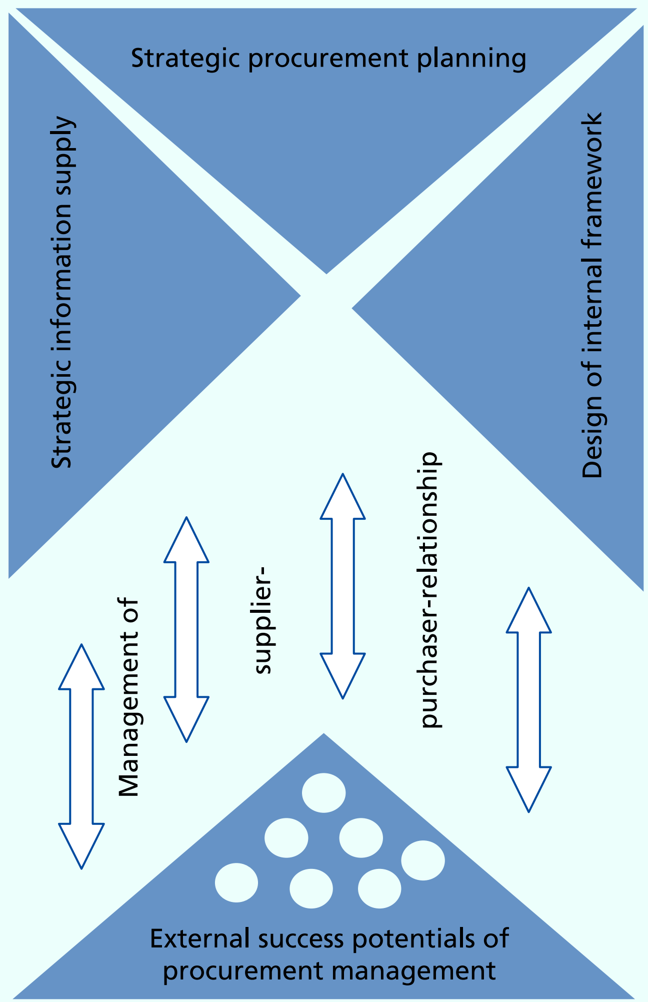


V. The Procurement Management of Installers

Advantages of Procurement Management:

- Orientation by end customers
- Increase of customer satisfaction through demand-oriented supply
- Quicker adaptation to market changes
- Reduction of the whiplash effect
- Avoidance of “out of stock“ situations





Strategic procurement management is the part of procurement management which deals with establishing and securing internal and external success potentials.

In the face of enormous growth in the photovoltaic sector as well as new entrants and the current market situation, the existing relationships between suppliers and purchasers are not aligned.

In the future, the requirements for both sides of the supply chain will change. The requirements of installers is expected to increase. Hence, availability will not remain the major criterion for the selection of a supplier or producer.

The analysis will work out significant success factors for the supplier-purchaser-relationship.

VI. Research Design

Survey Method	▪ Undertaking of a telephone survey (CATI) ▪ Subjects: decision-makers or people involved in decisions in installation companies operating in the photovoltaic sector ▪ Length of interview: approx. 35 minutes ▪ Qualitative interviews with producers and distributors for validation of results
Sample	▪ Total sample: n = 3,500 ▪ About 300-400 interviews with PV installation companies ▪ Field time: August-September 2008 (main survey) ▪ Involvement of EuPD panel surveys (e.g. business climate index) ▪ Selected experts
Interpretation	▪ Market-representative analysis (e.g. weighted according to installed capacity) ▪ Group-related analysis (type of trade, company size) ▪ Cluster generation (market segmentation) ▪ If specific module or inverter brands can be obtained from more than 30 installers, individual interpretations are possible.

VII. List of Questions (Excerpt)

Questions Regarding General Structural Data

- Company's core business
- Company's growth history
- Circle/range of customers
- Segmentation of the sales market according to size categories

Questions Regarding Product Policy

- Share of specific module technologies
- Product portfolio according to brands/technologies
- Justification of the choice of suppliers or the purchase decision according to brands/technologies

Questions Regarding Pricing Policy

- Development of purchase prices for PV modules 06-08 according to technologies and location of the producers
- Development of (end customer) system prices 06-08 according to end customer segments
- Margin requirements by the installers
- Cost structure of crystalline and thin-film PV systems
- Minimum yield requirements according to customer group

Questions Regarding Procurement Management

- Share of procurement on total annual expenditures
- Average inventory on hand
- Contract and supply conditions (e.g. terms of payment, warranty rights, supply amounts, additional services, etc.)
- Procurement strategies (e.g. stock or on-demand procurement)
- Procurement channels 2006-2008
- Location of suppliers and if applicable market shares
- Classification of suppliers
- Quantification of satisfaction with the most important suppliers

Questions Regarding Market Position and Strategies

- Future competitive position
- Strategies in the case of decreasing demand
- Future bargaining position towards suppliers

VIII. Reporting – Choice Between Three Different Report Versions

1. Basic Version

The basic report consists of the results of the installer survey in the form of an annotated study.

- Market-representative analysis
- Group-related analysis according to trade, size, etc.
- Display of the sales market and sales channels
- Segmentation of installers according to future strategy
- Models for successful sales architecture
- Evaluation of performance parameters (such as price, product)
- Best practices on the sales market
- Benchmark of individual supply strategies
- Relevance analyses: criteria for supplier choice
- Correlation analyses of the choice criteria
- Factors for supplier choice on behalf of the customers
- Recommendation for producers and suppliers
- General development paths in the installers' supply management

Trends, Tendencies and Success Factors

2. Premium Version

In addition to the information included in the basic version listed on the left, the premium version contains the following information:

- Benchmark and brand analyses of the most important manufacturers of crystalline and thin film modules (e.g. Sanyo, Mitsubishi, Schott, Solarworld, aleo, Kyocera, SHARP, Schüco, BP, Suntech, First Solar, Würth, Kaneka)
- Benchmark and brand analyses of the most important manufacturers of inverters (e.g. SMA, Fronius, Kaco, Sputnik)
- Benchmark and brand analyses of the most important suppliers (e.g. IBC, Energiebau, Donauer, Wagner, AS Solar)
- Profile sheets with detailed information about the most important manufacturers and suppliers (including information about the range of distribution, performance in comparison to the previous year, exclusivity of the brand in installer portfolios, evaluation and rating of the brands, brand characteristics and attribute association from the point of view of the installers).

Brand and Benchmark Analysis

VIII. Reporting – A Choice Between Three Different Report Versions

3. Exclusive Version

In the InstallerMonitor the interviewees are asked several questions (aided and unaided) regarding their suppliers and producers of crystalline and thin film modules, as well as inverters.
Because of the installer-representative approach, the number of references to a specific brand depends on the company's market penetration. If a company is mentioned enough times, an individual analysis can be undertaken.

Description of Services (will be individually adapted)

- Premium version (see slide 10)
- Additional company-specific slides
- Profile graphics for your company
- Position of your company with respect to competing companies
- Procurement management strategies of your customers
- Satisfaction with your products and the supply conditions
- Justification of the purchase decision
- Individual recommendations
- Workshop for the display and interpretation of results
- Tabular analysis of all questions (tabular report)

Your company

IX. Success Potential for Your Company

- This study offers important guidelines for decision makers in the PV sector. The basic report gives you a market-representative analysis with interpretations and recommendations for producers and suppliers of modules and inverters.

- Module and inverter producers as well as suppliers of PV products take centre stage in the premium version. A detailed brand and benchmark analysis is offered. How do the installers evaluate a brand? What are decisive factors to offer a certain module/inverter brand respectively choose a certain supplier? The premium version will give you answers to these questions.

- If you decide to purchase the exclusive version, you will also receive information specially customized to your company's needs. Thus, among other things, we show you the strategic position of your company with respect to the competition.

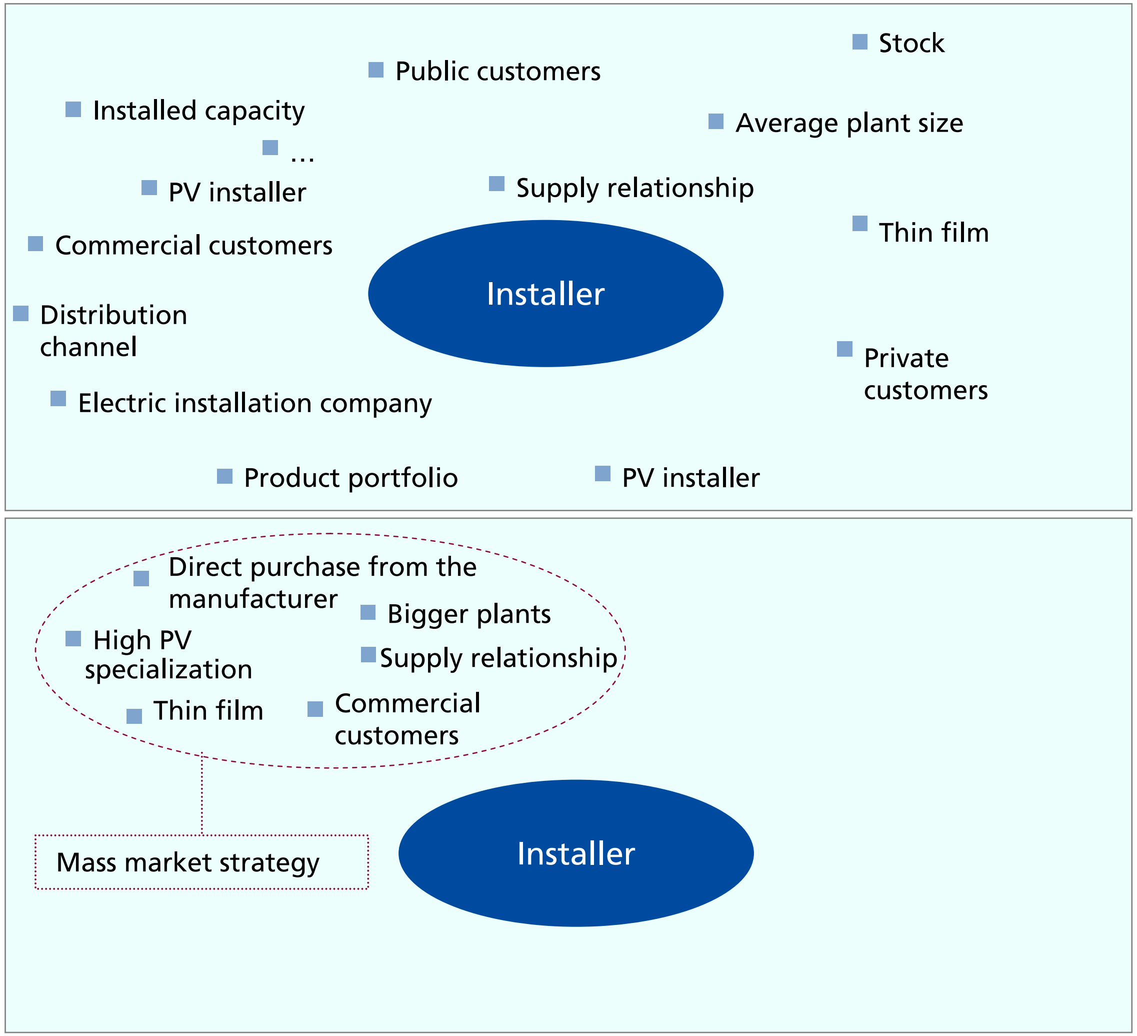
- The basic data was extracted from primary sources, i.e. they consist of a broad basis of current quantitative data supplemented with qualitative in-depth interviews with experts.

- Our reports illuminate the current situation as well as the developments and potentials of the solar market. Graphically enhanced annual comparisons allow for a quick overview of relevant market sectors.

- You will also receive substantiated answers on how to specifically improve business and supply relationships.

⇨ The "PV InstallerMonitor© 2008/2009" gives strategic approaches for producers and suppliers of modules and inverters in order to conduct an active quantity policy on the sales market even in times of weak demand and increased competitive pressure.

x. Method – Installers' Typology (Simplified Illustration)



In order to understand the installer and his requirements, producers and suppliers face a big challenge. But who is **the** installer?

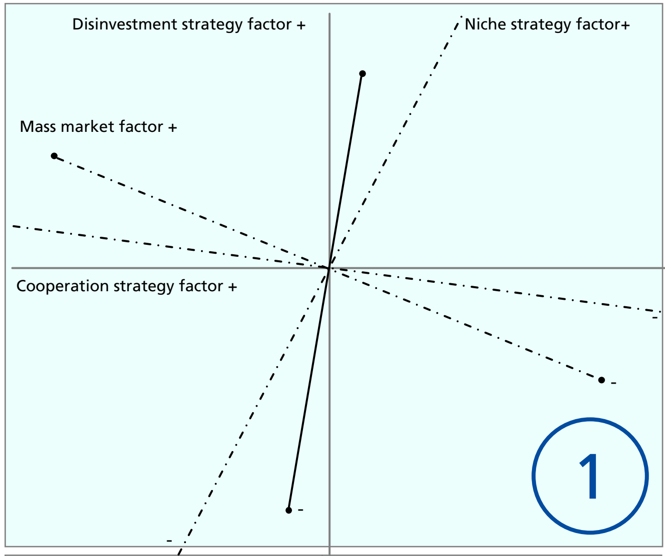
- What is his annual installed capacity?
- Does he purchase his products directly from the producer or from the wholesaler?
- ...

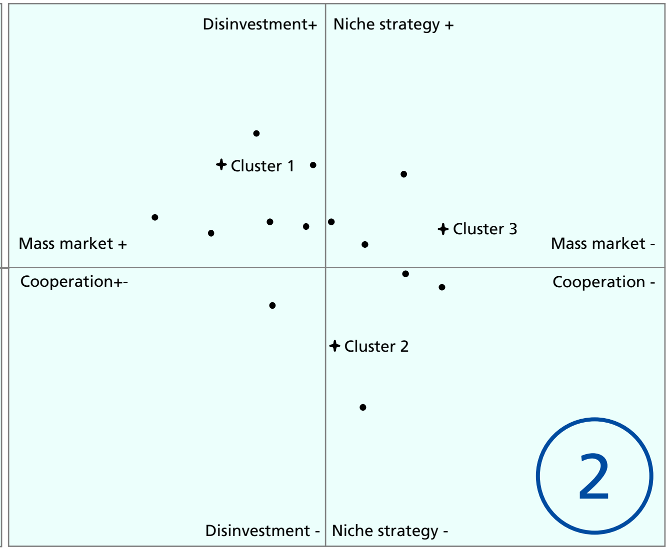
Efficient distribution can only be achieved if these questions are answered. Against this background different installer types (clusters) were composed by means of factor analyses. Those clusters refer to five different types of strategy.

1. Mass market strategy
2. Cooperation strategy
3. Disinvestment strategy
4. Niche strategy
5. Indifferent strategy

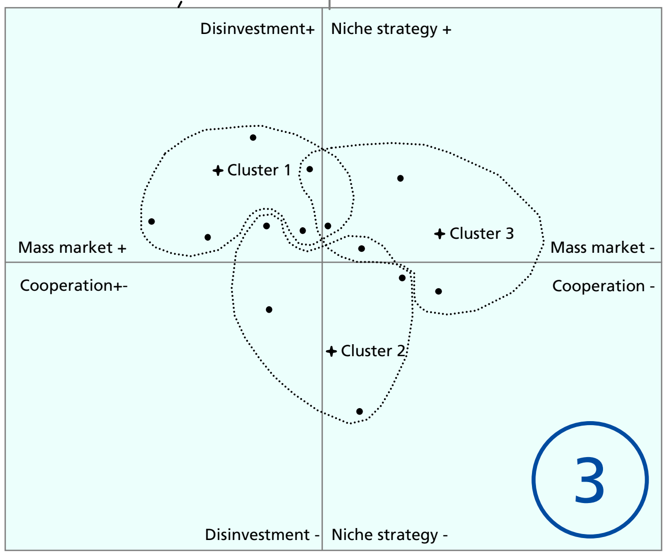
The segmentation of installers enables the client to fulfill given requirements.

x. Method – Installers' Typology (Detailed Illustration)





1. The four strategies (cost-leader mass market strategy, cooperation strategy, disinvestment strategy and niche strategy) span a two dimensional area with their polar extremes.
The horizontal axes are defined using the mass market and cooperation factors. The disinvestment and niche factors define the vertical axes.



2. The individual cluster types are positioned between the two dimensions.

However the cluster types cannot yet be assigned specific characteristics, as the points are only defined in terms of the different strategic factors, and not to the cluster types. This occurs in the next step.

3. Using bi-variable analyses such as cross-tabulation, the cluster groups can each be assigned a level of attachment to each strategy variable.

Some clusters overlap slightly as the different strategies can apply to different clusters.

As each point is assigned to a cluster type, the cluster groups can be formed.

X. Typology of the Installers – Description I

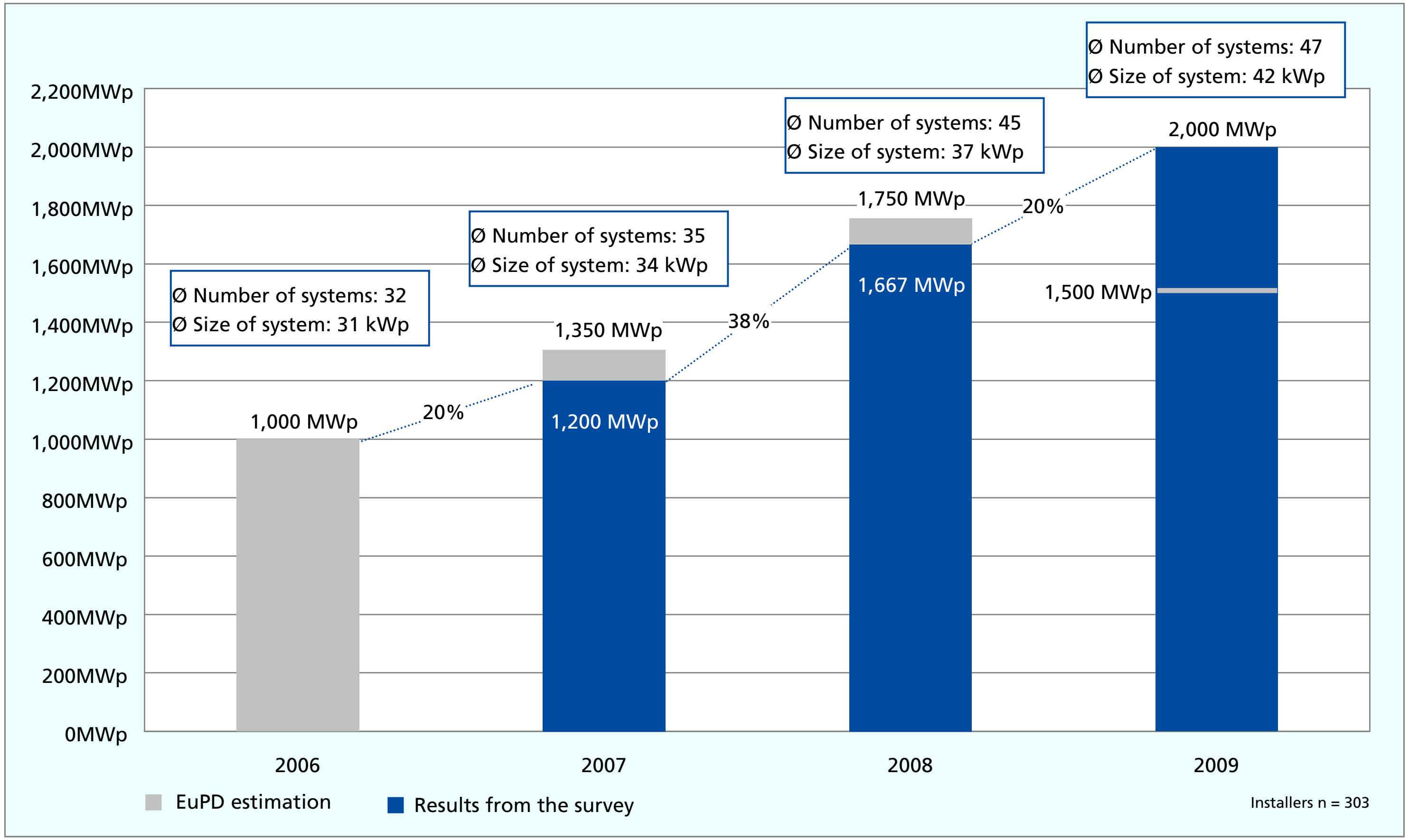
Definition of the cluster types I

1st SEGMENT **Cost-leader mass market strategy**	**Strategic direction (if market competition increases):** **1)** Concentration on larger PV projects, **2)** concentration only on mass market, 3) **… 7)** **Descriptive factors** ▪ Mainly larger solar installers/project developers (75 percent) ▪ … ▪ … ▪ …
2nd SEGMENT **Cooperation strategy (Purchase cooperation agreements)**	**Strategic direction (if market competition increases):** **1)** Reduction of suppliers, **2) …** **Descriptive factors** ▪ Mainly small and medium-sized solar installers (60 percent) and electricians (26 percent) ▪ … ▪ … ▪ …

X. Typology of the Installers – Description II

3rd Segment **Disinvestment strategy**	**Strategic direction (if market competition increases):** 1) No long-term master contracts, 2) … **Descriptive factors** ▪ Mainly electricians (44 percent) and small solar installers (35 percent) ▪ … ▪ … ▪ …
4th Segment **Niche strategy**	**Strategic direction (if market competition increases):** 1) Cooperation with smaller suppliers, 2) … **Descriptive factors** ▪ Small solar installers (40 percent) and electricians (31percent) ▪ … ▪ … ▪ …
5th Segment **Indifferent strategy**	**Strategic direction (if market competition increases):** 1) Flexibility on procurement market, 2) … **Descriptive factors** ▪ Mainly roofers and HVAC installers (80 percent) ▪ … ▪ … ▪ …

XI. Sample Slides – Business Development 2006-2009



XI. Sample Slides – Crystalline Module Brands (Comparison of Product Characteristics)*

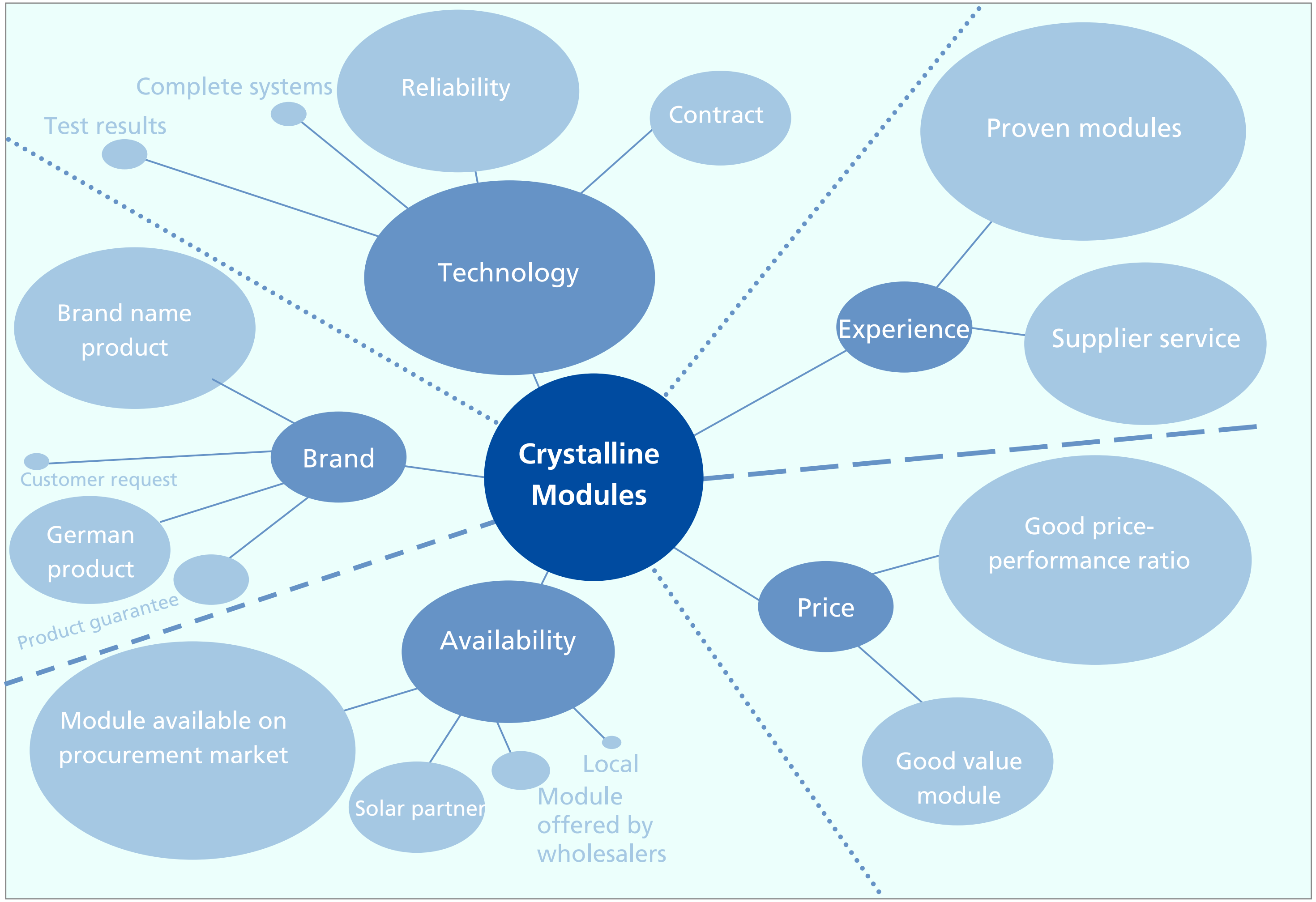
The significance of individual product attributes for the breadth of distribution is displayed in this graph. Installers were asked for the reasons for holding a specific brand in their portfolio. The blue bar displays the average importance of crystalline module brands.

It can be seen that "technology" is the most important reason to decide for a specific "brand". In other cases, however, "availability" is the selection criterion number one.

*Diagram is an illustration and does not necessarily reflect results. Included in premium version only.

XI. Sample Slides – Crystalline Modules (Association Tree)*

Product characteristics and their influence on the range of distribution.



The graph on the left describes the product characteristics (in the dark blue ovals) and their influence on the overall distribution. The size of the ovals reflects the importance of the characteristics. Thus the module technology is the most important criteria overall.

Furthermore, the factors which are subsumed within each attribute are displayed in lighter blue. The size is once again an indication of the significance of the factor.

*Diagram is an illustration and does not necessarily reflect results. Included in premium version only.

XI. Sample Slides – Market shares (distribution ranges) inverters – an overview

Source: EuPD Research 2009

	Distribution range 2007	Distribution range 2008	Manufacturer is most important supplier	Absolut change in comparison to 2007		Distribution range 2007	Distribution range 2008	Manufacturer is most important supplier	Absolut change in comparison to 2007
SMA	*	*	*	6,1%	Steca	*	0,3%	*	*
Fronius	*	*	4,9%	*	Diehl	*	*	0,0%	*
Kaco	*	*	3,7%	*	Schott	0,5%	*	*	*
Sputnik	*	*	*	0,4%	Solutronic	*	*	*	-0,2%
Schüco	*	3,3%	*	*	Kyocera	1,2%	*	*	*
Kostal	*	*	0,4%	*	Conergy	1,0%	*	*	*
Sunways	*	*	*	-0,2%	ASP	*	0,0%	*	*
Mastervolt	*	*	0,4%	*	Mitsubishi	*	0,0%	*	*
SolarWorld	*	*	*	-1,5%	Refu	*	*	0,0%	*
Solar Konzept	0,1%	*	*	*	Sonstige	7,0%	*	*	*
Siemens	*	0,9%	*	*					
Würth Solergy	*	*	*	0,8%					
IBC-Solar	*	*	0,8%	*					
Delta	*	*	*	0,5%					
Danfoss	*	*	0,4%	*					
Vissmann	*	*	0,4%	*					

Share (columns 1-3)

> 5%

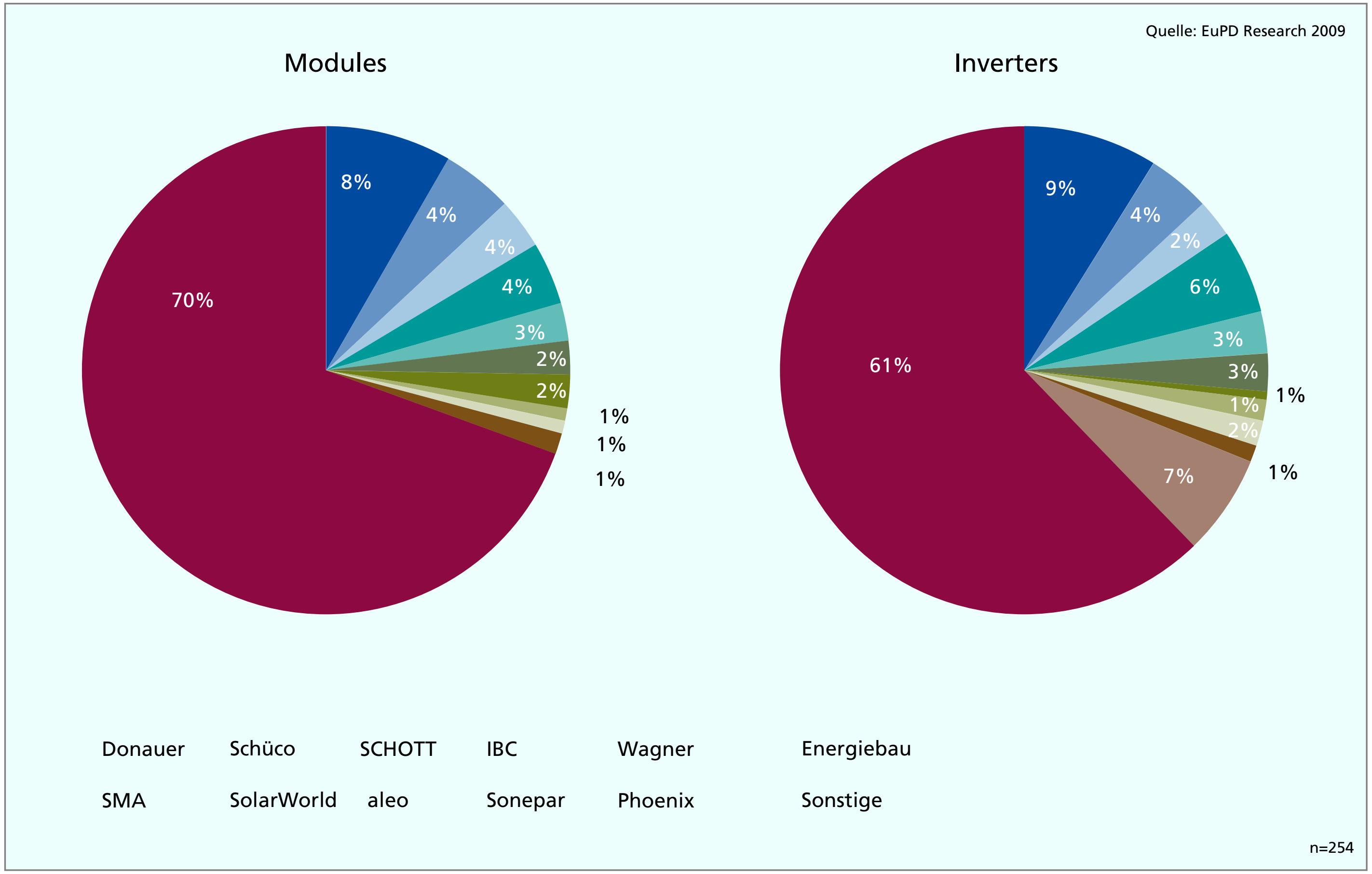
1% to 5%

Change (last column)

< 0%

> 0%

XI. Sample Slides – Most important suppliers of modules and inverters



The pie charts display the most important module and inverter suppliers.

The leading suppliers achieve a cumulated market share of 29 percent of modules and 34 percent of inverters. In comparison, the share of leading brands for modules and inverters is 60 and 80 percent respectively.

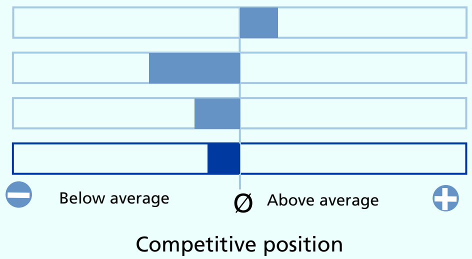
The high proportion of other suppliers reflects the high number of companies in total.

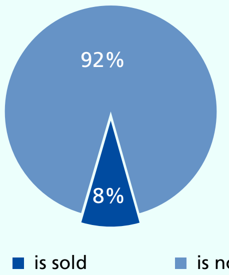
XI. Sample Slides –Profile Sheet for a thin film module

Evaluation of the brand in comparison

- Distribution range
- Performance in comparison to 2007
- Positioning in installers' portfolios

⇨Evaluation of the brand*



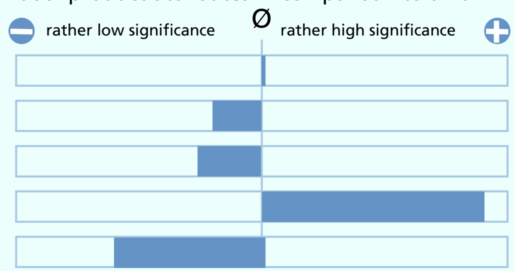


*average of bars above

Top arguments for installers to sell the modules:

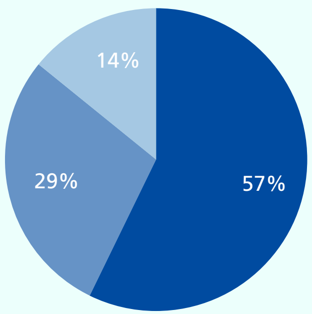
- Availability

Significance of individual product attributes in comparison to all thin film module brands



Exclusivity of the brand in product portfolio

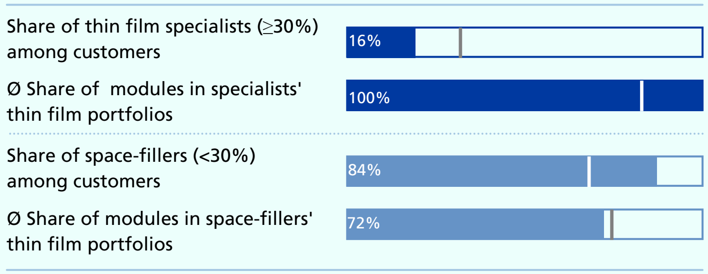
If modules are sold, the average share that the brand has in the installers' portfolios::



- Exclusive supplier: no other thin film brand is offered
- Premium supplier: thin film brand is the most important (over 50% share)
- Complementary: brand is present in thin film portfolio without dominating (share 0%-50%)

Thin film share in installer portfolios

How many customers sell more than 30% thin film (specialists), how many less than 30% (space-fillers). What is the average share of modules in the thin film portfolio of both groups?



| Marks the average of all thin film brands

Source: EuPD Research 2009

XII. Agenda – PV InstallerMonitor© 2008/2009

EuPD Research
Adenauerallee 134
D-53113 Bonn
Phone +49 (0) 228-971 43-0
Fax +49 (0) 228-971 43-11
welcome@eupd-research.com
www.eupd-research.com

Contact Persons
Christian Münch
Project Manager

Martin Drope
Business Development | International Sales

EuPD Research® is a brand of HOEHNER RESEARCH & CONSULTING GROUP GmbH.

EuPD Research® is a member of ESOMAR World Research.