

APPENDIX

Exhibit 1 - EDP Comercial Distribution Channel Structure and Process: Energia Solar EDP

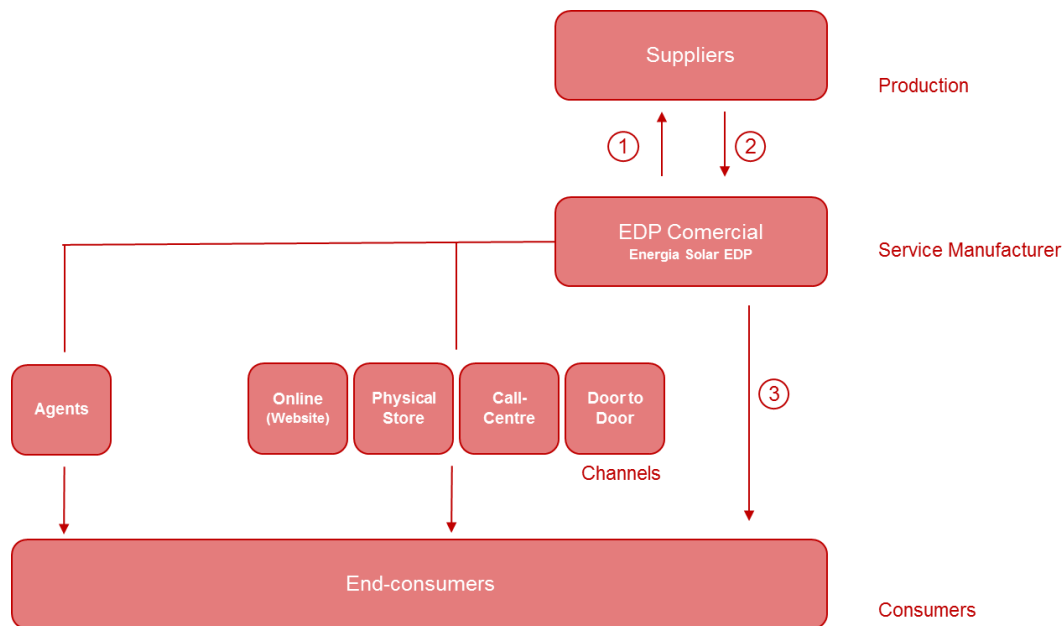


Figure 1: EDP Comercial Distribution Channel Structure

Channel members and responsibilities:

- **Suppliers:** are the producers of the solar panels and sell them to EDP Comercial.
- **EDP Comercial:** is the manufacturer of the service Energia Solar EDP and the *channel captain* - acting as the prime mover in establishing and maintaining channel links.
- **Agents:** refer to *Agentes de Atendimento* only (the only agent type that is able to sell products and services); are detached from the other channels as they are not totally controlled by EDP.
- **Online:** refers to the company's Website, through which the consumer is informed about all the products/services available, having a special section for Energia Solar EDP solution.
- **Physical Store:** refers to the official EDP stores where, among other functions, all the products and services of EDP Comercial are available for 'purchase', including Energia Solar EDP.

- **Call-Centre:** refers to the telemarketing channel, outsourced from specialized entities (oriented and supervised by EDP), mainly in charge of sales and information sharing.
- **Door to Door:** refers to the direct sales (door-to-door) team.

Process:

The contact between suppliers and EDP Comercial is frequent, as EDP makes the orders and payment (1) and the supplier delivers the ordered items (2). Once a consumer engages in Energia Solar EDP solution, the service (including the solar panels, inverters and meter that are installed in the consumer's roof) is delivered directly from EDP Comercial to end-consumers (3). The service includes installation of the solar panels and adaptation of the electrical system, as well as the meter that would register the total production and consumption, redirecting the excess energy produced to the grid. If desired by the consumer, an extra meter can be purchased and installed, and the excess energy produced would then be sold to the grid at a pre-determined price. One should emphasize that the contact between the channels – agents, online, physical store, call-centre, door-to-door - and end-consumers happens during the whole process.

Exhibit 2 - Detailed Definition of Service Outputs

Bulk Breaking	End-user's ability to buy a desired (possibly small) number of units, even if the product or service originally was produced in large, batch-production lot sizes. The higher it is, the smaller the lot size and the higher the service output.
Spatial Convenience	Increases end-user's satisfaction by reducing transportation requirements and search costs.
Waiting Time	Time the end-user must wait between ordering and receiving the goods or post-sales service (can be different for original purchase and post-sale services).
Product Variety and Assortment	Variety describes different classes of goods that constitute the product offering (breadth/width of product lines) and assortment refers to the

	depth of product brands or models offered within each generic product category. The higher the both are, the higher the output and the overall distribution costs.
Customer Service	Refers to all aspects of easing the shopping and purchase process for end-users (including post-sales) as they interact with commercial suppliers or retailers.
Information Provision	Education provided to end-users about product attributes or usage capabilities, as well as pre- and post-purchase services.

Adapted from: Palmatier, et al., 2015, *Marketing Channel Strategy*, 8th Edition, Upper Saddle River, New Jersey: Pearson Prentice Hall

Figure 2: Detailed Definition of Service Outputs

Exhibit 3 - Service Outputs Supplied by *edp + solar*

Bulk-breaking: Out of scope.

Product Variety and Assortment: Given that the service is customized to the customer's needs and living arrangements, the building or villa's dimension is taken into account when formulating the proposal, therefore influencing the number of panels and the installation dimension regarding each specific case (i.e. a building with a high number of tenants interested in engaging in the solution would require a higher number of panels and a larger installation dimension, the same happening with a bigger villa). *edp + solar* technical team would then analyse the conditions in each specific case, taking into account the different assortment needs and requirements.

Spatial Convenience: Taking into account the end-consumers' widely different needs and preferences about *where* and *how* they intend to purchase the service, *edp + solar* would be present in EDP's physical stores (currently 65 operating stores), in the agent stores (*Agentes de Atendimento*, that account for 177 entities) and at the *edp + solar* micro website. Additionally, consumers would be able to engage in the process by phone, through the exclusive number dedicated to EDP solar solutions and the telemarketing channel, that despite being outsourced, is oriented and supervised by EDP Comercial.

Waiting Time: Given the complexity of the process and its high involvement component, the consumer might need to wait up to three months between the first contact (simulation) and the installation in the building solution case, as the number of people involved is higher as well as the whole process complexity. This period would logically be shortened for the villa solution as it only involves one customer (household) at a time, being the decision-making period certainly shorter.

Customer Service: Given the asymmetries regarding the levels of customer service required by consumers, *edp + solar* would adapt its customer service supply, ranging from high to low within all the channels used. In physical stores, customers can be guided by in-store collaborators – that would present the service specificities and do the simulation for them - or use the *do-it-yourself* monitor to do the simulation. In the second case, there would be an assigned collaborator to assist them in case they need help with the process. The same guidance would be done by agents, that need to be effectively trained in order to provide complete information about the service. Regarding the online channels (website), the user is completely autonomous in searching for information and conducting the simulation by himself. Additional direct sales channels, in the form of door-to-door sales force and telemarketing, reach the consumer directly and therefore provide a high level of customer service, suiting some customers' preferences.

Information Provision: Information about *edp + solar* reaches the customers in the most diverse forms: informational advertising and merchandising materials (more detailed in the communications plan), the micro website, information personally provided by in-store collaborators and through the exclusive phone line dedicated to EDP's solar solutions.

Exhibit 4 - End-User Segmentation: Positioning Map

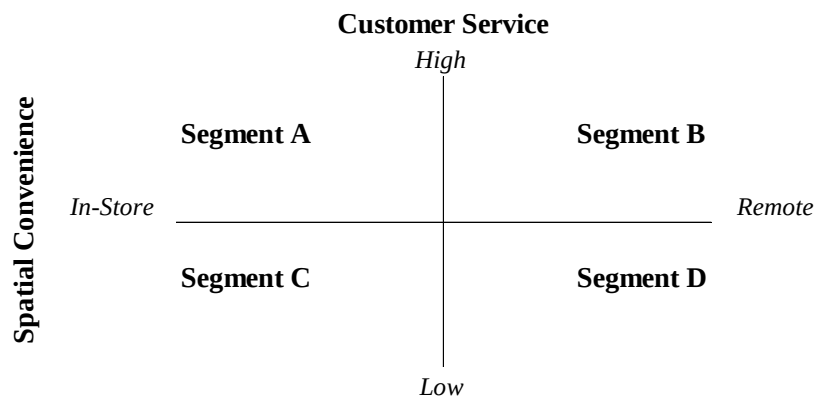


Figure 3: Distribution Segments Positioning Map

Exhibit 5 - *edp + solar* micro website: webpage and functions' description



Figure 4: *edp + solar* micro website

- **Como funciona:** section where the user can find information about *edp + solar* solution – characteristics, process and benefits.

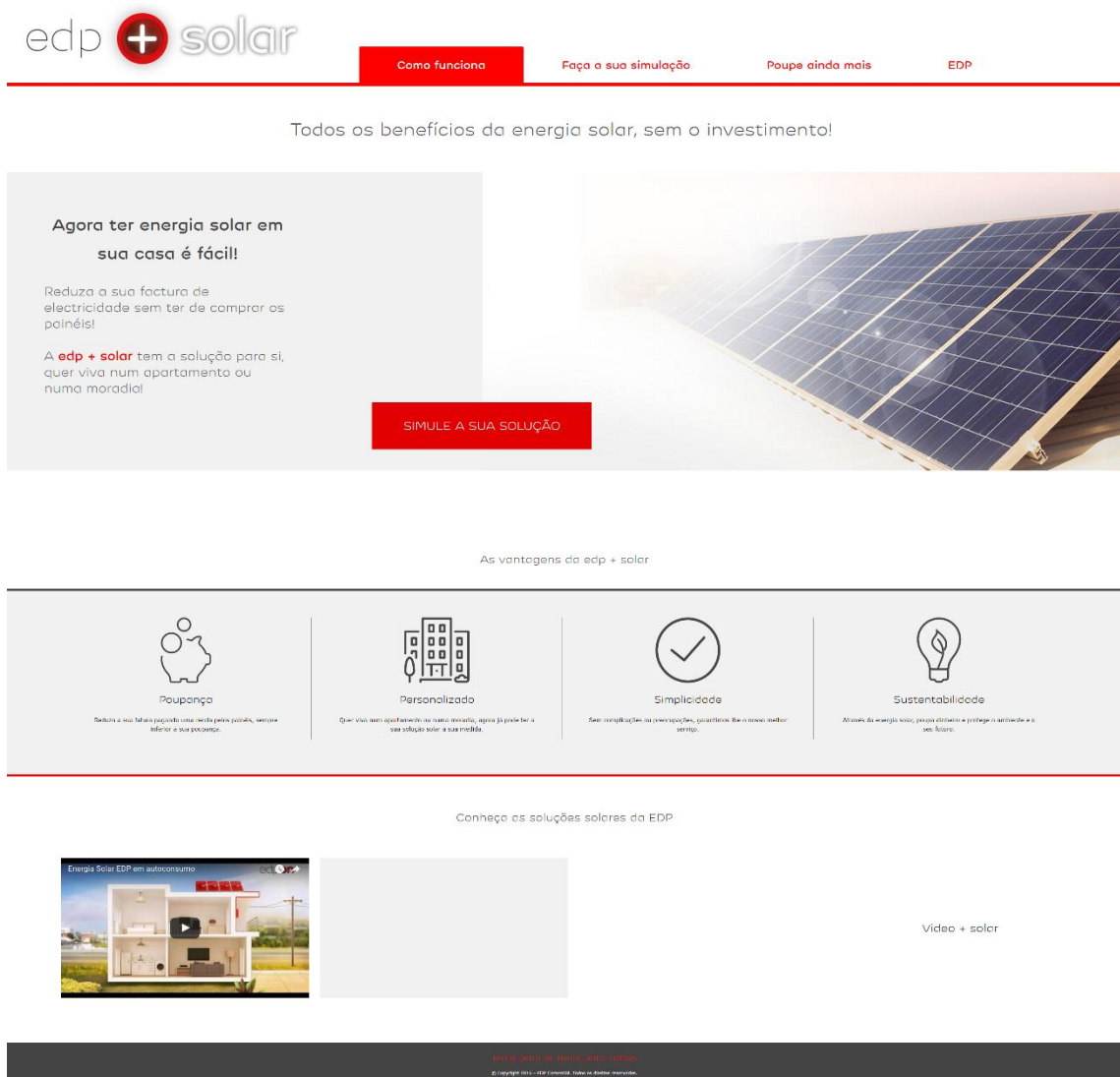


Figure 5: “Como funciona” section of *edp + solar* micro website

- **“Faça a sua simulação”**: section where the user can make the simulation in order to assess the conditions under which the system can be installed. The user should choose his living arrangement conditions, current electricity provider and give some personal information.

The figure displays three sequential screenshots of the 'Faça a sua simulação' (Make your simulation) section of the edp + solar micro website.

Screenshot 1: The page header includes the 'edp + solar' logo and navigation links: 'Como funciona', 'Faça a sua simulação' (highlighted in red), 'Poupe ainda mais', and 'EDP'. Below the header, a sub-header reads 'Simule a sua solução e descubra quanto e como pode começar a poupar!'. The main content area is titled 'Em que tipo de alojamento vive?' (In what type of accommodation do you live?). It features two large images: a multi-story apartment building on the left with a red 'Apartamento' (Apartment) label, and a single-story house on the right with a red 'Moradia' (House) label.

Screenshot 2: This screenshot shows the next step in the simulation process. The header and sub-header are identical to the first screenshot. The main content area is titled 'Qual é o seu actual fornecedor de eletricidade?' (What is your current electricity provider?). It presents two large, light gray rectangular buttons: 'EDP Comercial' on the left and 'Outro/Não sei' (Other/I don't know) on the right.

Screenshot 3: This screenshot shows the final step of the simulation process. The header and sub-header are identical. The main content area is titled 'Precisamos só de mais umas informações para lhe dar a sua simulação' (We only need a few more pieces of information to give you your simulation). It contains a form with several input fields and dropdown menus:

- 'Nome do titular da conta' (Account holder's name) with a text input field labeled 'Insira o nome'.
- 'Data de nascimento do titular' (Account holder's date of birth) with a text input field labeled '(dd/mm/yyyy)'.
- 'Costuma ter pessoas durante o dia em casa durante a semana?' (Do you usually have people at home during the week?) with a dropdown menu labeled 'Escolha'.
- 'Costuma passar o fim-de-semana em casa?' (Do you usually spend the weekend at home?) with a dropdown menu labeled 'Escolha'.
- 'Quantos apartamentos tem o seu prédio?' (How many apartments does your building have?) with a text input field labeled 'Insira o número'.
- 'O seu e-mail' (Your email) with a text input field labeled 'Insira o seu e-mail'.
- 'O seu telefone' (Your phone) with a text input field labeled 'Insira o telefone'.

 At the bottom of the form is a prominent red button labeled 'SIMULAR'.

Figure 6: “Faça a sua simulação” section of edp + solar micro website

- **“Poupe ainda mais”:** section where other products and services of EDP Comercial are shown in order to better inform the user.

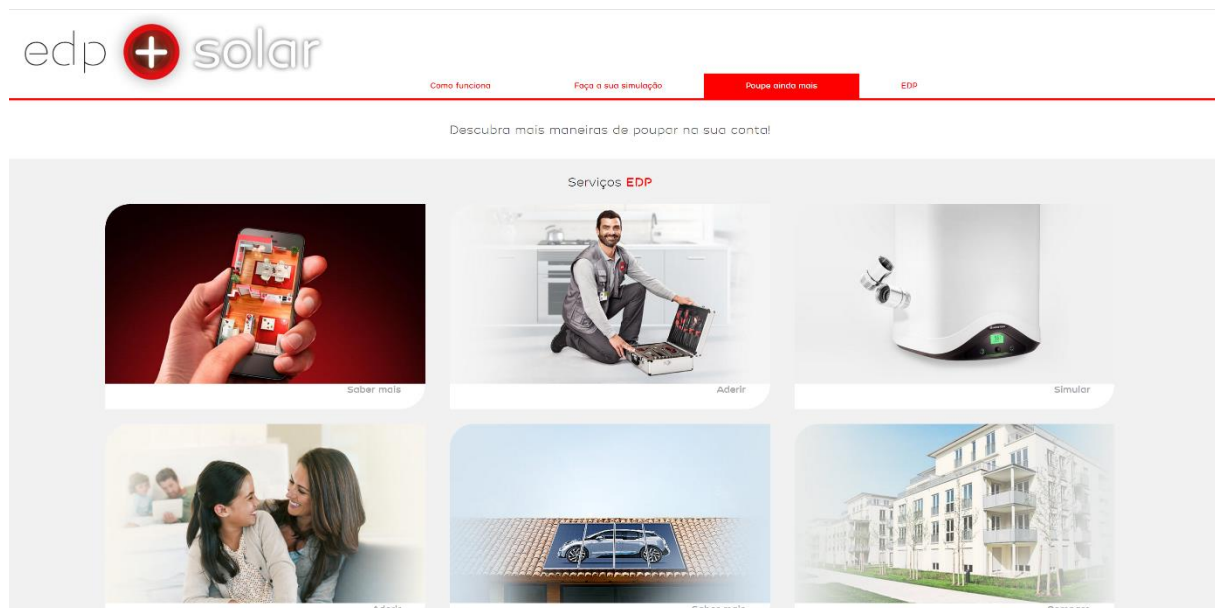


Figure 7: “Poupe ainda mais” section of *edp + solar* micro website

- **“EDP” section:** direct link to the company’s website.

Exhibit 6 - Physical Store: *do-it-yourself* simulation monitor



Figure 8: *Do-it-yourself* simulation monitor in EDP’s physical store

Exhibit 7 – Types of Channel per Segment

- **Segment A** demands high customer service and has preference for in-store service. Therefore, the physical store channel, together with the agents, would be the most adequate channels to reach this type of customers.
- **Segment B** demands high customer service and has preference for service supplied remotely (meaning that the consumer does not need to go to a physical point of purchase). Therefore, direct sales' channels, specifically door-to-door sales team and telemarketing, together with the exclusive EDP solar solutions phone number channel (call-centre), would be the most adequate channels to reach these consumers.
- **Segment C** demands low customer service and prefers in-store service. Through the *do-it-yourself* simulation monitor (Exhibit 6), a customer can be completely autonomous in the process while having an in-store experience, having in mind that, if needed, in-store collaborators can help throughout the whole process.
- **Segment D** demands low customer service and has preference for a remote kind of service. Therefore, the online route is the most adequate channel to serve this segment's preferences, as the consumer has a completely autonomous experience.

Exhibit 8 - *edp + solar* Channel Structure: Distribution Scheme

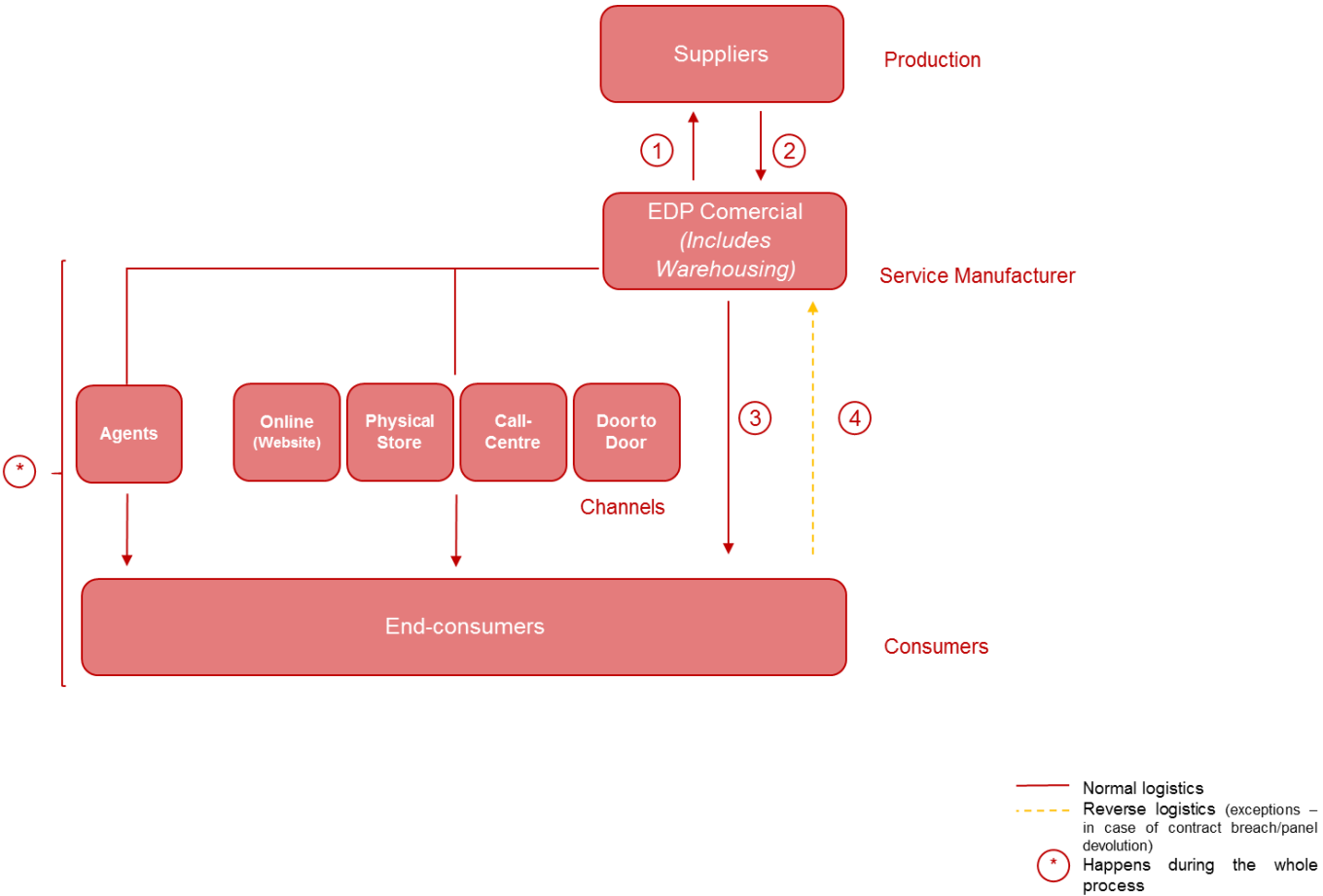


Figure 9: *edp + solar* Distribution Scheme

Exhibit 9 - *edp + solar* Channel Flows and Responsibilities

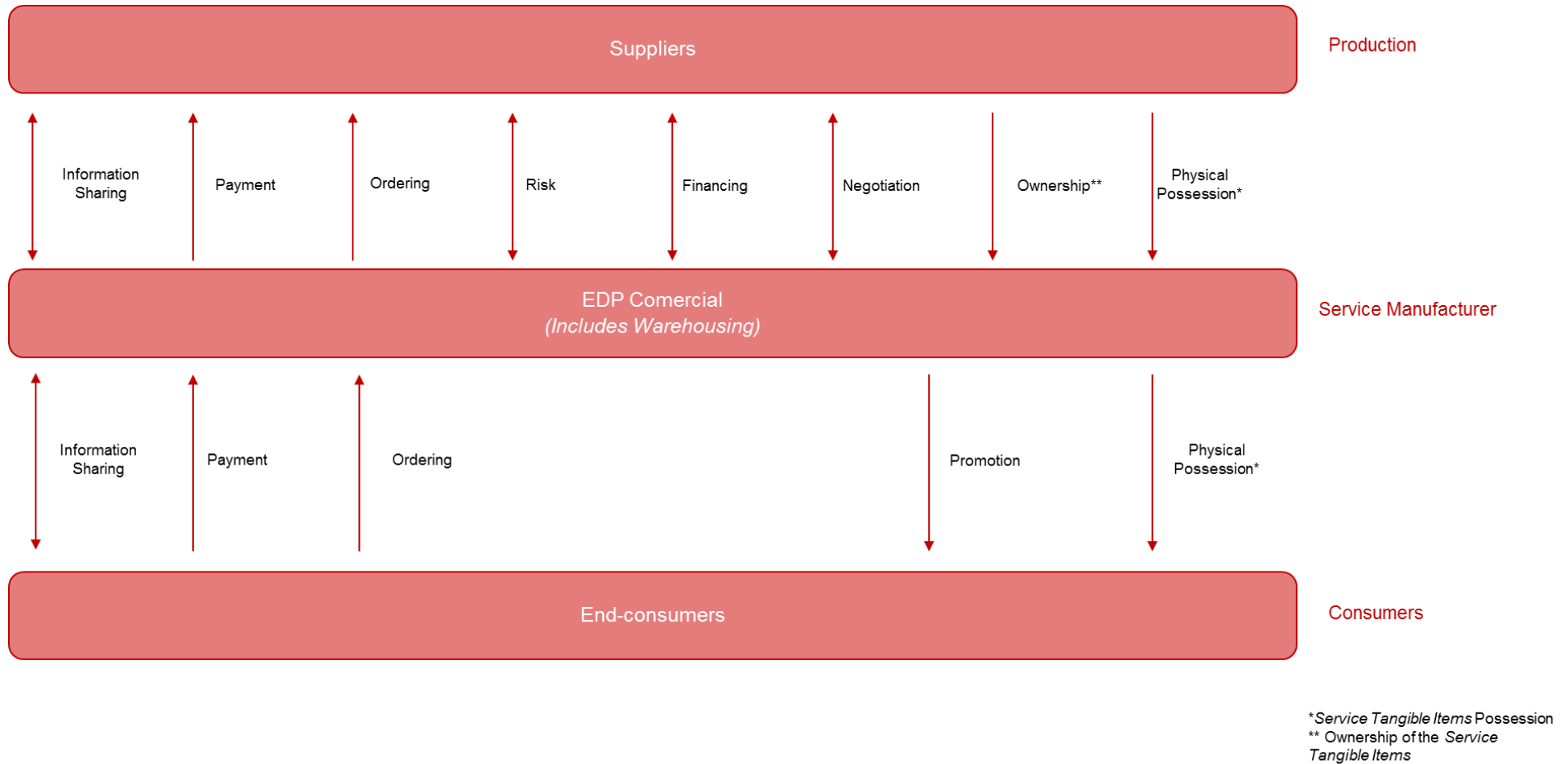


Figure 10: *edp + solar* Channel Flows and Responsibilities

Exhibit 10 - Service Output Demand Gap Analysis

Segment	Service Outputs					Distribution Channel Segment Type
	Spatial Convenience	Waiting Time	Customer Service	Product Variety and Assortment	Information Provision	
Skyscrappers	SOD = SOS	SOD > SOS Process-wise and in-store experience	SOD = SOS	SOD = SOS	SOD = SOS	A
Skyscrappers	SOD = SOS	SOD > SOS Process-wise	SOD = SOS	SOD = SOS	SOD = SOS	B
Skyscrappers	SOD = SOS	SOD > SOS Process-wise and in-store experience	SOS > SOD	SOD = SOS	SOD = SOS	C
Skyscrappers	SOD = SOS	SOD = SOS Process-wise	SOD = SOS	SOD = SOS	SOD = SOS	D
Mansionists	SOD = SOS	SOD > SOS In-store experience	SOD = SOS	SOD = SOS	SOD = SOS	A
Mansionists	SOD = SOS	SOD = SOS	SOD = SOS	SOD = SOS	SOD = SOS	B
Mansionists	SOD = SOS	SOD > SOS In-store experience	SOS > SOD	SOD = SOS	SOD = SOS	C
Mansionists	SOD = SOS	SOD = SOS	SOD = SOS	SOD = SOS	SOD = SOS	D

Notes:

- **Service Outputs:** bulk-breaking was not included in the gap analysis as this component is out of scope given the characteristics of the service (therefore not demanded by end-users nor supplied by service provider: one can state that there is no gap regarding this service output)
- **Distribution Channel Segments:** Segment A - *In-Store*, High Customer Service; Segment B – *Remote*, High Customer Service; Segment C – *In-Store*, Low Customer Service; and Segment D – *Remote*, Low Customer Service. For details regarding most adequate channels for each segment, please analyse Exhibit 7.

Figure 11: Service Output Demand Gap Analysis

Exhibit 11 - Solar Panel



Figure 12: 250W Tianwei Poly Solar Panels (Sample Solar Panel)

Exhibit 12 - Inverters

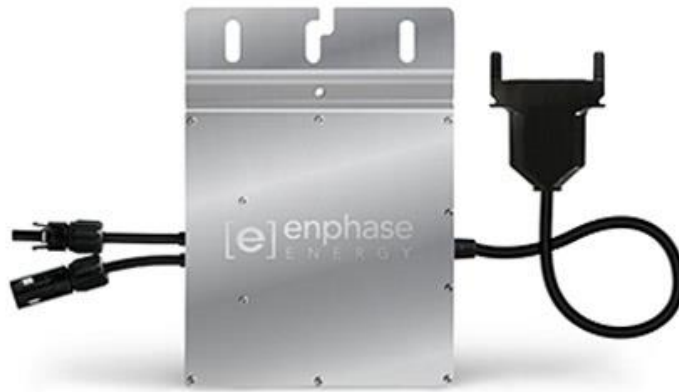


Figure 13: Enphase M250 Micro Inverter (Sample Inverter)



Figure 14: Effekta Isolated/Hybrid Inverter (Sample Inverter)

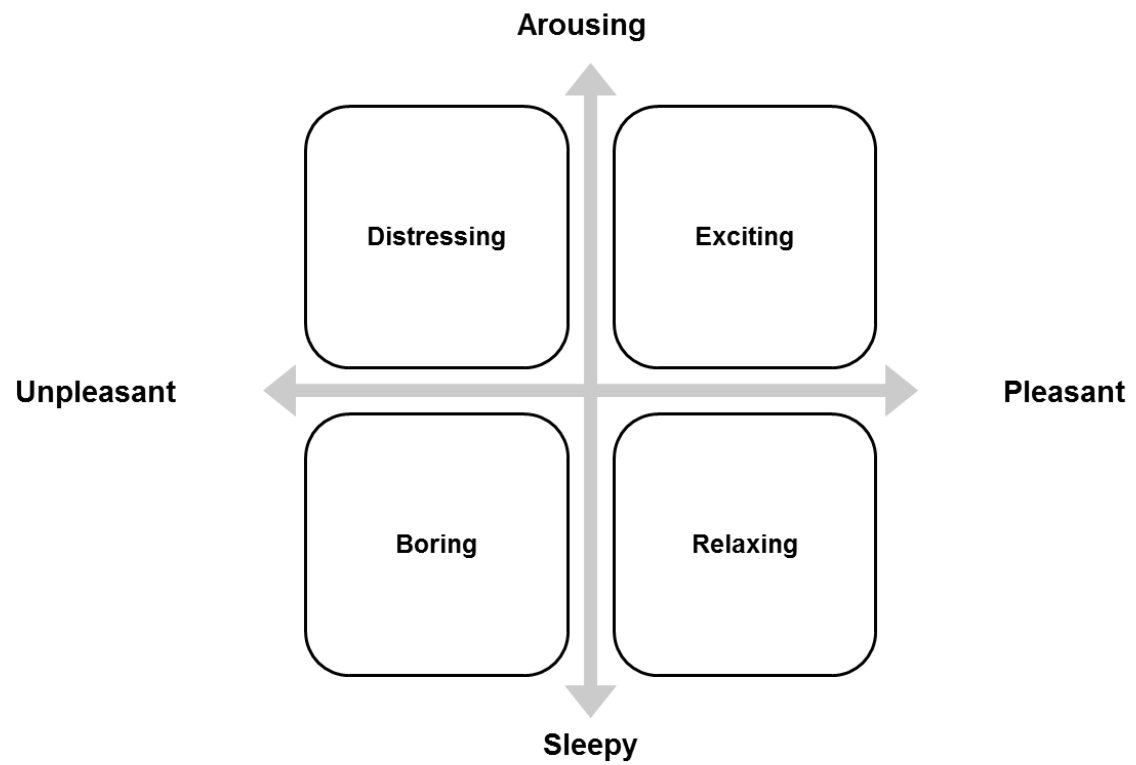
Hybrid Iverter: Already prepared to be connected with batteries.
 (Available models: 1000VA, AX Series 3000VA and AX Series 5000VA)

Exhibit 13 - Meters



Figure 15: ISKRA Smart Meter (Sample Meter)

Exhibit 14 - Russel's Model of Affect



Source: Wirtz and Lovelock, 2016

Figure 16. The Russel's Model of Affect

Exhibit 15 - Experience at Shopping Centre



Figure 17: Experience at Shopping Centre: Efficient House and Simulation Monitor