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Management from the NOVA – School of Business and Economics.

“SWIMMING IN A LAKE OF SHARKS: EDP’S ELECTRIC MOBILITY OFFER FOR
THE B2B SEGMENT”

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Abstract

The mobility market is being revolutionized due to the increasing market penetration of electric vehicles and their expected adoption by companies. This new eco-system enables new business opportunities for energy companies. Currently, EDP is “swimming in a lake of sharks”, in a highly competitive market, and wants to position itself in the market of electric mobility solutions for companies to take advantage of this development. After extensive research and market analysis, a marketing business plan was developed for *EDP Frota Verde*, a turnkey solution that will allow companies to join this revolution, having all electric mobility solutions in one place.

Keywords: *EDP Comercial*; B2B segment; marketing business plan; electric mobility.

Index

1. Situation Analysis	9
1.1 Market Overview	9
1.1.1 Electric Vehicles and Charging Infrastructure in Portugal.....	9
1.1.1.1. Electric Vehicles Adoption.....	10
1.1.1.2 Charging Infrastructure	10
1.1.1.3 Success Factors	11
1.1.2 The Mobility Market for Businesses	11
1.1.2.1 Company Fleets	12
1.2 Market Future Trends	12
2. Five C's Analysis.....	13
2.1 Context.....	13
2.1.1 Political Environment	13
2.1.2 Economic Environment	14
2.1.3 Social Environment.....	14
2.1.4 Technological Environment	15
2.1.5 Ecological Environment.....	16
2.1.6 Legal Environment	16
2.2 Company	18
2.2.1 SWOT	19
2.2.2 <i>EDP Comercial's</i> Product and Service Offering.....	19
2.3 Customers.....	20
2.3.1 Customers on the Energy Market	20
2.3.2 Customers on the Electric Mobility Market for Businesses.....	21
2.3.3 B2B Decision Making Process.....	21
2.4 Collaborators	22

2.5 Competitors	22
3. Potential Business Models	23
3.1 Description of the Potential Business Models	24
3.2 Risk & Potential Matrix	25
4. First Primary Research Phase.....	26
4.1 Marketing Problem	26
4.2 Companies.....	27
4.2.1 Methodology and Interview Guide.....	27
4.2.2 Sample.....	27
4.2.3 Main Findings.....	28
4.3 Industry Experts.....	31
4.3.1 Main Findings.....	31
5. Second Primary Research Phase.....	32
5.1 Marketing Problem	32
5.2 New Sample of Companies.....	33
5.2.1 Methodology, Questionnaire, and Limitations	33
5.2.2 Sample.....	34
5.2.3 Main Findings.....	34
5.3 Same Sample of Companies as in the First Primary Research Phase.....	38
5.3.1 Methodology and Questionnaire	38
5.3.2 Sample.....	38
5.3.3 Main Findings.....	38
6. The Solution	41
7. Marketing Strategy.....	41
7.1 Segmentation	42

7.2 Targeting	43
7.3 Positioning.....	44
7.3.1 <i>EDP Frota Verde</i> – Large Companies’ Positioning Statement.....	44
7.3.2 <i>EDP Frota Verde</i> – SMEs’ Positioning Statement	44
8. Brand.....	45
8.1 Brand Identity	45
8.1.1 <i>EDP Frota Verde's</i> Identity Prism.....	45
8.2 Brand Architecture.....	47
8.3 Brand Elements	47
9. Service Mix	48
9.1 Service/Product.....	48
9.2 Price.....	49
9.2.1 The Value-based Pricing Approach	50
9.2.2 Price Setting	52
9.2.2.1 Contract Renewals.....	54
9.2.2.2 Contract Breaches	54
9.2.3 Pricing Menu and Quantity Discounts	55
9.3 Place.....	55
9.3.1 <i>EDP Comercial</i> Distribution Channels.....	56
9.3.2 <i>EDP Frota Verde</i> Distribution Channels Strategy – Channel Design.....	56
9.3.2.1 End-User Analysis: Segmentation and Targeting.....	56
9.3.2.2 Channel Structure: Positioning	57
9.3.2.2.1 Channel Members	57
9.3.2.2.2 Types of Channel Mix and Intensity	57
9.3.2.2.3 Channel Flows.....	58

9.3.2.3 Channel Analysis/Gap Analysis	58
9.3.2.3.1 Sources of Channel Gaps	58
9.3.2.3.2 Service Gaps.....	59
9.4 Communications Plan	60
9.4.1 Marketing Objectives.....	60
9.4.2 Target Audience Selection	61
9.4.3 Target Audience Action Objectives and Behaviour	61
9.4.4 Communication Objectives	62
9.4.5 Positioning Statements for the Campaign	63
9.4.6 Creative Strategy	64
9.4.7 Integrated Communications Strategy.....	65
9.4.8 Media Strategy.....	67
9.4.9 Budget Break Down and Campaign Schedule	69
9.4.10 Campaign Tracking.....	69
9.5 Process	70
9.5.1 <i>EDP Frota Verde</i> Flowchart	70
9.5.2 <i>EDP Frota Verde</i> Blueprint and Main Attributes	72
9.6 Physical Evidence.....	72
9.7 People.....	73
9.7.1 Hire the Right People.....	74
9.7.2 Enable Your People	75
9.7.3 Motivate and Energize your People.....	75
10. Key Success Factors.....	76
11. Profit and Loss Statement	76
11.1 Main Assumptions	76

11.1.1 Revenues	77
11.1.2 Cost of Goods Sold (COGS)	79
11.1.3 Operating Expenses	79
11.1.4 Depreciation Expenses	80
11.1.5 CAPEX.....	80
11.1.6 Other Assumptions	81
11.2 Results.....	81
12. Control Measures: Key Performance Indicators	82
13. Contingency Plan.....	83
References	84

List of Tables

Table 1 - SWOT Analysis	19
Table 2 – Companies’ interest in consultancy services for chargers	35
Table 3 – Companies’ interest in using a company that provides and installs the charging infrastructure as well as provides additional services	35
Table 4 – Companies’ interest in a full mobility solution.....	36
Table 5 – Companies’ interest in an internal carsharing system.....	36
Table 6 – Companies’ interest in carsharing between companies	37
Table 7 - Previously interviewed companies’ interest in consultancy services for chargers ...	38
Table 8 - Previously interviewed companies’ interest in using a company that provides and installs the charging infrastructure as well as provides additional services	39
Table 9 - Previously interviewed companies’ interest in a full mobility solution	39
Table 10 - Previously interviewed companies’ interest in an internal carsharing system	40
Table 11 - Previously interviewed companies’ interest in carsharing between companies	40
Table 12 - Assumptions regarding new contracts	77
Table 13 - Contingency plan	83

Executive Summary

The electric mobility revolution is changing the industry. The increasing market penetration of electric vehicles (EVs) and their expected adoption by companies are creating new business opportunities for a wide range of players, including energy companies. Electric mobility enables additional electricity sales and creates demand for charging solutions, which provides EDP with an opportunity to differentiate its offering from its competitors in the highly competitive B2B energy market in Portugal.

After analyzing the markets for EVs and mobility solutions for businesses in Portugal, eight ideas for potential business models were developed. After assessing the attractiveness of the business models, three of them were followed up on and further developed in two primary research phases. This research revealed that Portuguese companies seem to be generally open towards electric mobility, but they are still skeptical to electrifying large parts of their fleets due to concerns regarding the price, autonomy, and charging time of EVs. In order to address these perceived obstacles and to create the necessary basis of EVs that may lead to significant additional energy and charging solutions sales, the chosen business model is a turnkey solution for the electrification of fleets - *EDP Frota Verde*. This business model offers a one-stop shopping solution for large companies and small and medium-sized enterprises (SMEs) with a fleet and consists of consultancy services, charging solutions, and electric vehicles - all in one single place.

In the following, a marketing and communication plan was developed for this solution in order for EDP to conquer a distinctive place in the fierce lake of sharks that the Portuguese B2B energy market represents.

1. Situation Analysis

The Portuguese Business to Business (B2B) energy market is characterized by low margins and intense competition (ERSE 2016). Furthermore, efficiency measures and distributed generation are putting restrictions on electricity sales (ERSE 2016). Therefore, utilities need to find a way to differentiate their product and service offerings and to create new load-growth opportunities. Currently, the most promising of these opportunities is electric mobility – it enables additional electricity sales and creates demand for charging infrastructures and corresponding services, which can be offered by utilities (ARF and McKinsey 2014).

1.1 Market Overview

The market for electric mobility solutions for businesses in Portugal is still in the very early stages, which poses a challenge on the collection of data. Therefore, the authors aim to generate a rationale for this market by analyzing two other markets: the market for EVs and the mobility market for businesses. The focus is on Portugal, however, global and EU-wide statistics as well as information about product and service offerings in other countries were included if determined important for an understanding of the market.

1.1.1 Electric Vehicles and Charging Infrastructure in Portugal

In general, five different types of EVs can be distinguished: Battery Electric Vehicles (BEVs), Plug-in Hybrid Electric Vehicles (PHEVs), Hybrid Electric Vehicles (HEVs), Range Extended Electric Vehicles (REEVs)¹, and Fuel Cell Electric Vehicles (FCEVs) (Appendices 1&2). However, only BEVs, PHEVs, and REEVs are plugged in to recharge the battery (ACEA 2014). Thus, the focus of this thesis is on BEVs, PHEVs, and REEVs, from now on referred to as plug-in EVs (PEVs), since they directly lead to additional electricity consumption.

¹ In contrast to PHEVs, the combustion engine in a range extender is not used to directly propel the car, but to recharge the battery while driving when it is depleted (ACEA 2014).

1.1.1.1. Electric Vehicles Adoption

Worldwide, more than 750,000 EVs were registered in 2016, which increased the global stock of EVs to more than 2 million vehicles (IEA 2017). The IEA (2017) further expects that in 2020, there could be up to 20 million EVs on the roads worldwide, and that the global stock of EVs could reach 140 million vehicles by 2030. These calculations also take into account the recent statements of large European car manufacturers such as VW Group, BMW, and Mercedes, which announced to offer electric versions of each model in the future (Cremer 2017; Fasse 2017). Furthermore, according to Accenture (2014), 53% of consumers are considering an EV as their next car. Thus, although cars with optimized Internal Combustion Engines (ICEs) will still dominate the European car market in 2020, electric powertrains “will start to play a major role in Europe” towards 2030 (ARF and McKinsey 2014).

In 2016, there were approximately 6.1 million vehicles in Portugal (ACAP 2017). According to the database of *Autoridade Tributária* (quoted in Lusa 2017), 4,134 of these vehicles were electric. In 2016, PEVs had a market share of less than 1% in Portugal, with 0.3% for BEVs (813 BEVs sold) and 0.4% for PHEVs (1,024 PHEVs sold) (ACAP 2017). In 2017, BEVs and PHEVs have so far been accounting for 0.63% and 0.75% of new car registrations respectively and according to Alexandre Videira (quoted in Lusa 2017), the total number of EVs in Portugal is expected to reach 5,000 in 2017 (Appendices 3, 4 & 5). Furthermore, the Portuguese car market has grown significantly and is expected to continue to expand, which will also potentiate sales of PEVs (Jornal Económico 2017).

1.1.1.2 Charging Infrastructure

As Funke, Gnann, and Plötz (2015) explain, charging stations can be separated into private, semi-public, and public: private ones are located on private premises and access is restricted to a specific group of people, e.g. company employees. Semi-public chargers are located on private premises, but access is public, e.g. on parking lots of malls. Public chargers are located in public

areas and access is public, e.g. in streets. In Portugal, MOBILE, SA is the public company appointed as the managing entity of the energy and financial flows resulting from the electric mobility network's operations and MOBILE's network comprises all chargers located in public access places and some in private locations (Diário da República 2015). Furthermore, there are slow, semi-fast, and fast charging stations (Appendix 6). According to the EAFO (n.d.), there are about 1,200 slow charging stations and 90 fast chargers in Portugal (Appendix 7). This network is currently being expanded, as is happening across Europe (Ministério do Ambiente n.d.; Cabrita-Mendes 2016).

1.1.1.3 Success Factors

The success of PEVs is dependent on several critical factors. One major factor is a reduction of the high price of PEVs compared to ICEs – by government regulations and subsidies in the short-term and by cost reductions, mainly for batteries, in the medium - to long-term (ARF and McKinsey 2014; IEA 2017). Furthermore, it is crucial to reduce charging times, increase the range of PEVs, and to implement a comprehensive network of standardized charging stations (KPMG 2017; Tate, Harpster, and Savagian 2008). This need also highlights the importance of cooperation within the electric mobility value chain, also referred to as 'co-opetition' (KPMG 2017). Furthermore, e-mobility benefits need to be marketed, since innovation requires a mind-shift to be successful (KPMG 2017; Tate, Harpster, and Savagian 2008).

1.1.2 The Mobility Market for Businesses

The mobility market for businesses in Portugal consists of company fleets, rental cars, taxis and ride hailing such as Uber, public transportation, and innovative solutions like corporate carsharing, which will be analyzed in more detail in section 2.5 Competitors.

1.1.2.1 Company Fleets

In Europe, almost half of the passenger cars are part of a corporate fleet and according to LeasePlan (2016), most companies use operational leasing² for financing and managing their fleets (ARF and McKinsey 2014). Including PEVs in corporate fleets is especially attractive for companies that “have a fleet with predictable driving patterns and thus (...) range requirements, combined with an intensive use of vehicles”, which improves the Total Cost of Ownership (TCO)³ of PEVs compared to ICEs (ARF and McKinsey 2014). For companies that already included PEVs in their fleets, TCO and the environment seem to be major decision factors (ARF and McKinsey 2014). Furthermore, intermediary companies like lease companies have started to include electric mobility solutions in their portfolios to meet customers’ demands (ARF and McKinsey 2014). Moreover, the electrification of commercial fleets in urban areas could be attractive in the future because of air and noise pollution, intensive use of vehicles, and a better charging network (Kley, Lerch, and Dallinger 2011).

1.2 Market Future Trends

In addition to the expected exponential growth in the adoption of EVs and the charging infrastructure extension, several trends that will have a major impact on the market landscape and future business models can be identified (Appendix 8). One of these is mobility as a service, which addresses the consumers' focus shift from the importance of car ownership to practical and economic mobility solutions in general and also incorporates the sharing economy trend (KPMG 2017; Marchi and Parekh 2015). Another trend are autonomous and self-driving cars, for which EVs are an optimal base, and which are expected to enable business models based on services, also emphasizing the importance of connectivity and digitalization (KPMG 2017; Randall n.d.). Furthermore, expected technological advancements for batteries, charging,

² Operational Leasing is a contract (3 – 5 years) that allows the use of a certain asset for a monthly payment defined in the contract, therefore it does not assign the user the right of its ownership (Investopedia n.d.a).

³ The Total Cost of Ownership represents the total cost of an asset including all the expenses that are related to it and that go beyond the purchase price. When speaking of vehicles, the TCO may include fuel, maintenance, insurance, taxes, CO2 emissions and the resale value, among other factors (Hutt and Speh 2013).

and energy storage solutions play a crucial role for the future adoption of EVs – however, uncertainty about winning technologies poses a significant risk on players in the electric mobility market (ARF and McKinsey 2014; Laurischkat, Viertelhausen, and Jandt 2016). Further trends in favor of EV adoption are government regulations in favor of EVs as well as the general trend towards 'greener operations' and 'greener cities' (Cremer 2017; Klauenberg, Rudolph, and Zajicek 2016). The environmental friendliness of companies' operations is becoming more important in order to comply with plans to reduce emissions and for marketing purposes, and cities aim to address the issues of pollution (ARF and McKinsey 2014). For both purposes, EVs represent an adequate solution. This is especially important due to urbanization (Foltyński 2014; KPMG 2017).

2. Five C's Analysis

2.1 Context

2.1.1 Political Environment

Both the Portuguese government and the European Union (EU) promote electric mobility with emission targets, EU funds, tax benefits, as well as operational and use incentives (ARF and McKinsey 2014; Ministério do Ambiente n.d.). These were put in place for several reasons, including ambitious goals to reduce emissions and achieve higher energy independence, for whose achievement EVs are supposed to play an important role (ARF and McKinsey 2014). EU-wide, the target is to reach 8 to 9 million EVs by 2020 (ARF and McKinsey 2014). In addition, the EU Clean Fuel Directive aims to have 800,000 public chargers throughout Europe by 2020 (ARF and McKinsey 2014). Furthermore, incentives by the Portuguese government include tax benefits and special advantages, for instance related to parking EVs, and the Portuguese government is promoting electric mobility by using 1,200 EVs in the public administration by 2020 (Ministério do Ambiente n.d.).

2.1.2 Economic Environment

The Portuguese economy has started to recover from the financial and economic crisis (Euromonitor International 2017). After growing by 1.43% in 2016, Portugal's GDP is estimated to grow by 1.74% in 2017 and to show positive growth rates over the next three years (Euromonitor International 2017; IMF 2017a). In 2015, the Services sector accounted for 75.42% of Portugal's GDP (World Bank 2017). Furthermore, the national debt to GDP ratio has been decreasing over the last years and is expected to continue to decrease until 2020 (Euromonitor International 2017; IMF 2017b). However, despite the growth of the country's GDP, Portugal's trade balance remained negative in 2015 (WITS n.d.).

In 2016, the profitability of Portuguese companies from PSI 20 increased to 845M€ (from 770M€ in 2015) and according to CaixaBI, the net income increased to 3,517.7M€ (by more than 1.4 p.p. compared to 2015) (Carregueiro 2017; Figueiredo Silva 2017). Moreover, in 2015, the weight of loans of Portuguese companies decreased to 32.6% (1.5 p.p. less than in 2014) and the cost of debt⁴ decreased to 3.7% (compared to 5.4% in 2014) (Carregueiro 2016; Banco de Portugal n.d.). Thus, Portuguese companies have more positive financial ratios and might be willing to invest.

2.1.3 Social Environment

Since 2010, Portugal's population has been decreasing, amounting to 10,309,573 in December 2016 (compared to 10,341,330 in 2015) (INE 2016; Azevedo 2017). Furthermore, in 2015, the number of companies in Portugal was 1,181,406⁵ (INE 2015) and, in 2016, the number of employees in Portugal increased to 4.650 million (from 4.576 million in 2015) (AICEP 2017). According to studies, Portuguese assume they have sustainable and responsible purchasing

⁴ Interest paid divided by obtained funding, or EBITDA divided by supported interests.

⁵ Regarding this number, 68% are individual companies (801,864) and 32% are societies (379,542). Also, 1,180,331 are SMEs and 1,075 are large companies, of the total number of companies. Furthermore, 1,163,082 are non-financing companies and 18,324 are financing companies, of the total number of companies. Of the non-financing companies, 790,881 are individual companies and 372,201 are societies (371,188 SMEs and 1,103 large companies), 1,162,069 are SMEs and 1,013 large companies. (INE 2015).

behavior and are concerned about the environment (Marketeer 2017; Schmidt et al. 2016). This mindset led to companies increasing the sustainability of their operations. In Portugal some companies are committing to achieve the United Nations' Sustainable Development Objectives, created to reinforce the role of companies to make an impact in society (United Nations 2015; BCSD 2017). Furthermore, most companies now have a CSR department. Thus, the Portuguese population and companies are more aware of environmental problems, and are undertaking corresponding actions. Nowadays, companies are also more concerned about their employees and are paying more attention regarding their employees' and customers' experience (Schawbel 2016).

2.1.4 Technological Environment

While ICEs are still technologically relevant, stricter regulations and customer demands are pushing the investment in e-mobility (KPMG 2017). Nonetheless, the industry is at a turning point; the current issues with PEVs are charging infrastructure, range, and pricing, but late technology evolution indicates a breakthrough in the near future (KPMG 2017; ING 2017).

Regarding charging, there is an increasing trend in the availability of chargers and a decreasing trend in charging time (KPMG 2017). Besides wired charging, that involves plugging the car to a charger, there are also ventures in induction charging and battery swapping (ARF and McKinsey 2014). New battery technology is increasing autonomy and R&D and mass production are leading to a rapid battery cost decline (IEA 2017). However, currently, the battery is still an important component of the EV's' TCO, driving retail prices up (ARF and McKinsey 2014). Most BEVs have an average range of 200 to 300 km; enough for local travel, still, consumers expect more (ING 2017). Furthermore, with the increasing adoption of PEVs, there is a general concern on how charging will impact the electricity grid. Important developments are pilots for two-way communication stations allowing Vehicle to Grid⁶ (V2G) and Vehicle to Building⁷ (V2B)

⁶ Vehicle to Grid technology enables energy stored in plug-in electric vehicles to be fed back into the national electricity grid to help supply energy at times of peak demand (CENEX n.d.). In Japan, with 6 Nissan LEAFs, V2G led to a 2.5% reduction of electrical power use during peak hours (ARF and McKinsey 2014).

solutions, crucial for grid stabilization and cost savings (Endesa 2015; ARF and McKinsey 2014). Moreover, the increasing use of smartphones for daily routines and core business activities and the demand for connectivity reaffirms the importance of customer data and, in this case, vehicle data (KPMG 2017). Additionally, companies look for new technologies to increase their efficiency and to protect data. Media habits for B2B customers have changed due to new technologies and CRM systems enable personalized marketing (Tibensky 2016).

2.1.5 Ecological Environment

Greenhouse Gas (GHG) emissions are one of the main contributors to global warming (National Geographic n.d.). In order to decrease these emissions, several agreements such as the Kyoto Protocol (1997) and the Paris Agreement (2015) have been signed (European Council 2017). As a consequence, the EU has defined the EU Climate and Energy Package, aiming to reduce GHG emission by 20% by 2020 by increasing the usage of renewable energies and energy efficiency by 20% (European Commission 2017a). As part of the defined strategy, Portugal was only 3 p.p. away from achieving its target of a 31% share of renewable energy in the gross final energy consumption in 2015 (Eurostat 2017a). In 2015, the total GHG emissions in Portugal were 68.9 Metric tons of Carbon Dioxide equivalent (MtCO₂e), corresponding to an increase of 7.1% when comparing with 2014 (APA 2017). The energy sector was responsible for 70% of this total with energy industries and transport activities contributing to 27% and 24% of these emissions (APA 2017). Even though EVs are mostly associated with a positive impact on the environment, these vehicles need electricity in order to charge, whose production involves GHG emissions, and the extraction of rare earth metals to produce lithium batteries (EPA 2017; Jones 2013; McGee 2017).

2.1.6 Legal Environment

To fulfill its Kyoto Protocol commitment, the EU has set strict emission targets for car manufacturers and member countries: By 2021, the average CO₂ emissions of fleets required by

⁷ Vehicle to Building stands for the same technology and purpose as Vehicle to Grid, but the vehicles communicate directly with the building's grid (CENEX n.d.).

all new cars are equal to a maximum of 95g/km (Appendix 9) (European Commission 2017b&c; Eurostat 2017b). Acknowledging that transport is one of the main contributors to GHG emissions, eleven European cities will ban diesel cars by 2025 (Ferreira Nunes 2017). Furthermore, several countries like Norway, the Netherlands and Germany will ban sales of ICEs in the next decades (Staufenberg 2016a&b; Carvalho 2016).

According to PwC Portugal (2015), the Portuguese government is encouraging the adoption of PEVs by increasing the maximum amount of depreciation accepted as fiscal expenditure for vehicles acquired during taxation periods beginning on or after January 1, 2015 (Appendix 10) and by reducing certain corporate and personal income taxes (EAFO n.d.). Furthermore, the government is giving purchase subsidies (2,250€ for BEVs and 1,125€ for PHEVs up to a limit of 1,000 vehicles sold since the start of 2017), registration and ownership tax benefits, company tax benefits (since Value Added Tax (VAT) is deductible for companies in the case of a car whose acquisition cost is inferior to 62,500€) and local incentives like free parking in Lisbon as well as a one-year discount in electricity for BEV buyers (EAFO n.d.).

Concerning energy sales, consumers have the right to choose their energy supplier since the energy market became liberalized in 2007 and the right of changing the supplier as many times as they want (ERSE n.d.b & n.d.c; MOBI.E n.d.b). Furthermore, there is a law forbidding the re-selling of energy, since only energy traders can sell it (Diário da República 2006). All chargers in public spaces must be connected to MOBI.E and the interested party can choose one of the registered operators⁸ or become the operator itself (MOBI.E n.d.a). The operator has the responsibility of ensuring that the entire process of acquisition, installation and operation of the charging stations is done properly (MOBI.E n.d.a). If the chargers are located in private spaces, adhering to MOBI.E becomes optional (MOBI.E n.d.a).

⁸ EDP, EDP MOP, Elergone Energia, EV POWER, Factor Energia, Galp, Galpgeste, Galp Power, Kilometer Low Cost, Mobiletronic, and Prio Energias Top Low Cost (ERSE n.d.a).

2.2 Company

If not stated otherwise, the information in this section was retrieved from EDP – Energias de Portugal, S.A.’s (EDP) 2016 Annual Report (EDP 2016a) and the kick-off presentation for the project (EDP DCMK 2017). EDP is a leading multinational company in the energy sector, active in 14 countries, and serving more than 7 million customers on the Iberian Peninsula. In 2016, EDP had a market capitalization of 10.4B€ and an EBITDA of 3.8B€, being Portugal’s largest company. Globally, EDP currently has 11,992 employees and works together with 17,078 suppliers. EDP is the number four worldwide in renewable energies, which amount to 65% of its energy produced in 2016. Currently, EDP operates in 3 different sectors: generation, distribution, and commercialization of energy. *EDP Produção*, *EDP Gás*, and *EDP Renováveis* are active in the generation of energy, *EDP Distribuição* distributes electricity and gas, and *EDP Comercial* (EDPC) as well as *EDP Serviço Universal* are responsible for the commercialization of energy. EDPC is the business unit responsible for energy supply in the liberalized market. In the B2C market, EDPC had a market share of 84% in May 2017; but in the B2B market, EDPC only had a market share of 29.7%, with 22.8% for big consumers⁹, 21.4% for industrial clients¹⁰, and 42.8% for small businesses¹¹ (ERSE 2017a).

EDP’s vision is being “a global energy company, leader in value creation, innovation, and sustainability” (EDP n.d.a). This vision is based on the company values of initiative, trust, excellence, sustainability, and innovation, complemented by commitments to its customers, people, and the environment. EDP aims to translate these values into innovative products and services, and it always tries to think of new ways to improve customer service.

⁹ Big Consumers are customers whose consumption installations are connected to grids of *Alta Tensão* (AT) and *Média Alta Tensão* (MAT) (ERSE 2017a).

¹⁰ Industrial Clients are customers whose consumption installations are connected to grids of *Média Tensão* (MT) (ERSE 2017a).

¹¹ Small Businesses are customers whose consumption installations are connected to grids of *Baixa Tensão* with *Potência Contratada* superior to 41.4kW (BTE, *Baixa Tensão Especial*) (ERSE 2017a).

2.2.1 SWOT

In order to gain a better understanding of EDP's strengths and weaknesses as well as potential external opportunities and threats, the following SWOT analysis was created:

STRENGTHS [S]	WEAKNESSES [W]
• Leading energy supplier in the liberalized Portuguese market; • Infrastructure company; • Core business is electricity, therefore likely to be perceived as expert in electricity related topics; • Large financial resources; • Already gained some experience related to electric mobility in the B2C segment; • Strong in renewable energies (which PEVs should be charged with to be environmentally friendly); • Established brand.	• Low bargaining power due to low margins and strong competitors in the B2B electricity market; • Similar market share with the two largest competitors in the B2B segment; • Certain internal constraints for the development and approval of new business ideas and projects; • Difficulties in internal data access across business units; • So far, not highly differentiated offering in what regards electric mobility.
OPPORTUNITIES [O]	THREATS [T]
• Growing market for PEVs; • People are getting more environmentally conscious and value companies that work on 'greener operations'; • The Portuguese economy is recovering; • To become a pioneer in electric mobility for the B2B segment in Portugal; • Government and EU incentives and regulations that favor electric mobility; • Infrastructure for electric mobility is improving (more charging posts, etc.); • TCO of PEVs < TCO of diesel cars due to subsidies, tax advantages, etc.; • Technological advancements: lower price and increased range of PEVs; • PEVs decrease air pollution and noise; • PEVs help to reduce energy and fuel dependence • Autonomous & self-driving cars.	• Uncertainty about speed of EV adoption; • Uncertainty about winning technologies in charging and batteries; • Large number of potential (new) competitors from different industries; • Limited autonomy and long charging time of PEVs; • Insufficient and non-standardized charging infrastructure; • Attitude towards PEVs, e.g. perceived as more expensive than ICEs (lower TCO, but higher price); • Low rate of renewal of car fleets in Portugal; • Typically, customers in the B2B energy market are not very loyal; • High price competition due to the liberalized energy market.

Table 1 - SWOT Analysis

2.2.2 EDP Comercial's Product and Service Offering

EDPC offers a wide range of products and services for the B2C and the B2B segment and is constantly developing new offerings in order to be up to date and to differentiate itself from its

competitors, which is especially important in the B2B segment due to the intense competition (EDP DCMK 2017). EDPC focuses on "offering unique and superior performance on attributes or benefits that are valuable to a large part of the market" (Steenburgh and Avery 2010). The company's offering for the B2B segment focuses on three areas: *Save to Compete* (S2C), *SME Energy Solutions*, and *Gestão de Consumos*. Furthermore, EDP offers different energy tariffs for businesses. With *Save to Compete*, EDPC created a program that supports the implementation of Energy Efficiency Integrated Projects in companies by means of an innovative business model, in which EDPC takes on a part of the initial investment and in which the project is paid by the realized savings (EDP n.d.g). *SME Energy Solutions* refers to tailored solutions that enhance the energy efficiency of companies and thereby reduce costs (EDP n.d.f). The online platform *Gestão de Consumos* enables a detailed and integrated real-time analysis of different types of consumption at a company, including, for instance, water, gas, and electricity (EDP n.d.d). Moreover, EDP has started to develop its electric mobility offering for businesses. The current offering includes an *Electric Mobility Simulator*, with which the TCO of ICEs, BEVs, and PHEVs can be compared, different electricity tariffs, chargers, and consumption management (EDP n.d.h). For the B2C segment, EDPC is for example offering different electricity and gas tariffs, energy efficiency management systems, which control and manage home consumptions in real-time like EDP *Re:dy*, and individual products such as smart plugs (EDP 2016a). In addition, EDPC is selling solar panels to private consumers and companies (EDP n.d.c).

2.3 Customers

2.3.1 Customers on the Energy Market

According to EDP, electricity suppliers typically do not segment the B2B market based on firmographic variables, but rather according to their clients' voltage level, resulting in four segments plus a fifth one, "Government", for public entities that stretches across all voltage levels (Appendix 11). However, within the scope of this thesis, only privately-owned companies will be analyzed due

to the high amount of regulations associated with selling products and services to entities involving public actors. According to EDP, large companies decide on their energy supplier based on the price. Smaller companies, however, tend to be more loyal in EDP's experience. In the liberalized market for energy, in May 2017, there were 4,852,913 customers; 98.8% private consumers, 0.8% small businesses, 0.35% industrial clients, and the remaining were big consumers (ERSE 2017a).

2.3.2 Customers on the Electric Mobility Market for Businesses

Businesses and governments that operate with large vehicle fleets represent a big share of the first EV enthusiasts (ARF and McKinsey 2014). Companies like IKEA and Unilever are members of the global initiative EV100 for companies committed to making EVs the norm by 2030 (The Climate Group n.d.). Companies are trying to keep up with change and want to include PEVs in their economic activity (ING 2017). Others want to provide this revolution to clients and employees, for example malls that want to increase their customers' shopping time by giving them the opportunity to charge their PEVs in the facility's garage (EVgo n.d.). EVs are particularly attractive for companies with fleets with predefined driving patterns (due to autonomy constraints), mainly composed by passenger cars (because of the current available models of EVs) and with a high number of kilometers per vehicle per year (positively reflected in the TCO due to lower consumption and maintenance costs) (IEA 2017). However, only 0.2% of the worldwide total car fleet is electric (ING 2017).

2.3.3 B2B Decision Making Process

B2B is a complex environment characterized by longer sales cycles, greater investment in time, money and resources, and a higher number of stakeholders with different goals and agendas (KPMG Nunwood 2017). With the digital revolution and the increase in communication and interaction channels, there has been a rare case of 'consumerization' as consumer expectations spill into the B2B world (Lingqvist, Plotkin, and Stanley 2015). Customers now expect personalization, time, effort, integrity and empathy from their sales representative (KPMG Nunwood 2017). Besides,

this process now is more intricate and decentralized with more people within the organization taking key roles in sizing up offerings: Decision Makers, Influencers and Users, each with different needs regarding their experiences (Lingqvist, Plotkin, and Stanley 2015).

2.4 Collaborators

Collaborators can be defined as the entities that work with a certain company but are not employees, thus acting as a third party (Steenburgh, and Avery 2010). The collaborators work with a company at different stages of the value chain and can for example be distributors or suppliers. In general, EDP's electricity value chain consists of electricity generation, transmission, distribution, and supply and retail (Appendix 12). Using EDPC as a reference point, its *upstream collaborators* are either directly related to or supporting electricity generation, transmission, and distribution. Thus, EDP's main *upstream collaborators* are *EDP Produção* and *EDP Renováveis* for generation and sourcing, *REN* for transmission, and *EDP Distribuição* for distribution (EDP DCMK 2017). Also, EDP is not producing chargers, but buying and re-selling them. Regarding *downstream collaborators*, EDP has established partnerships with 12 car manufacturers (like BMW, VW or Toyota) within the scope of its electric mobility offering. These partnerships for instance include energy discounts in combination with the purchase of a car of one of these brands (EDP n.d.e).

2.5 Competitors

The energy market for businesses is composed of 21 suppliers and EDP's largest competitors in the B2B segment are Iberdrola and Endesa (ERSE 2017a). For Big Consumers, Iberdrola and Endesa have a market share of 27% and 22.5%, respectively, compared to 22.8% for EDP (ERSE 2017a). For Industrial Clients, Iberdrola and Endesa have 22.7% and 29.7% respectively, compared to EDP's 21.4% (ERSE 2017a). In what concerns Small Businesses, Iberdrola and Endesa have a market share of 12.5% and 20.1% respectively, and on the other hand EDP has 42.8% (ERSE 2017a). Due to the liberalized energy market, customers can now choose their energy provider based on the best price (ERSE n.d.b). However, “the shift towards electric

mobility introduces a novel end-to-end value chain” (Appendices 13 & 14) (ARF and McKinsey 2014). Market players are repositioning themselves and apart from car and battery manufacturers, new players like energy utilities are entering the market (Teichmann 2016). Regarding charging solutions, the following companies need to be kept in mind: Plugless, which sells wireless charging stations for some EV models (Plugless n.d.); ZEEV, offering electric mobility solutions (mainly for individuals) (ZEEV n.d.c); Magnum Cap, with charging stations, energy storage devices, and smart grid integration (Magnum Cap n.d.); Efacec, offering charging solutions including wireless charging (Efacec n.d.); and Galp, which has the biggest network of fast chargers in Portugal on the main highways (Galp n.d.).

Depending on the specifics of the chosen electric mobility business model, multiple other businesses that have emerged in the mobility solutions market for the B2B segment apart from car manufacturers need to be considered as potential competitors. Amongst these are corporate and individual carsharing services such as AlphaCity (AlphaCity n.d.), scooter sharing services like eCooltra, and other businesses such as Uber and Cabify (eCooltra n.d.; Uber n.d.; Cabify n.d.). Furthermore, leasing and fleet management companies like LeasePlan should be taken into consideration as competitors (LeasePlan n.d.b) (Appendix 15). Other projects related to electric mobility solutions might have a great impact on the industry, such as the pilot projects of Nissan and The Mobility House in what regards V2B, and the pilot projects of Endesa and Mitsubishi in terms of V2G (ARF and McKinsey 2014; Endesa 2015; The Mobility House 2015). Battery Swapping technology has also been an attractive topic, which is why Tesla, amongst other companies, started a pilot project in 2015 and is currently developing a new solution (ARF and McKinsey 2014).

3. Potential Business Models

After analyzing the market, the internal and external environment, the authors have developed several ideas for potential new business models for EDP. These ideas take into account the

insights gained about market trends, competitor offerings and existing business models, customers, and technological developments, and will be presented in the following section.

3.1 Description of the Potential Business Models

The authors have developed eight potential business models, which represent a wide variety of approaches to creating an electric mobility offering for the B2B segment (Appendix 16).

The first model, **EDP Charging Power**, is a turnkey solution for charging. It consists of consulting services to find the optimal charging solution for customers and corresponding tailor-made charging solutions that also include new technologies such as wireless charging or the possibility to install solar panels to charge the vehicles. Furthermore, EDP would offer complementary services such as installation, maintenance, and applications (for instance to notify employees that their car is charged and can be removed from the charging station).

EDP Frota Verde takes EDP Charging Power one step further – with this business model, EDP would be a full electric mobility services provider. *EDP Frota Verde* consists of consulting services for the electrification of fleets, which include the determination of the number of cars that can be electrified, the choice of suitable models as well as finding the optimal charging solution. *EDP Frota Verde* would also offer tailor-made fleet and charging solutions as well as complementing services.

EDP Commercial Electrification is similar to *EDP Frota Verde*, but refers to the electrification of commercial fleets. Like *EDP Frota Verde*, it consists of consulting services, tailor-made fleet and charging solutions as well as complementing services.

In the next model, **EDP V2B**, PEVs store energy (e.g., excess renewable energy produced by a company's solar panels), and charge it back to the building during peak hours while they are not used. This mitigates fluctuations in the grid and stabilizes it.

EDP V2G is similar to EDP V2B. PEVs store energy (e.g., excess renewable energy in the grid), but in this case, they charge it back to the grid and not to the building while they are not

used. This model mitigates fluctuations in the grid and stabilizes it. However, according to EDP, there are legal issues with feeding energy back to the grid in Portugal.

EDP Battery Swapping consists of setting up battery swapping stations, at which depleted vehicle batteries are exchanged for fully charged ones, reducing charging time to around five minutes. Thus, these stations would be a substitute for charging PEVs at charging stations. Customers would have a contract with the stations' operator and after exchanging the batteries, the depleted batteries would be charged with an optimized charging strategy.

In **EDP Re-Battery**, older batteries that are not good enough for vehicles anymore, would get a second life. They would be bundled and used as storage units, for example for excess renewable energies. This secondary usage of the batteries would reduce their TCO.

The eighth model is called **EDP E-Carsharing**, which refers to carsharing with PEVs. This carsharing can be within or between companies. Between companies means that companies in the same area, e.g. the same business park, would share a pool of cars via a carsharing system. Carsharing within companies means that companies would have a flexible pool of cars, which could for instance be used for service trips by different employees during the day. However, other employees could also book these cars for private trips (outside working hours), which would increase the efficient use of the vehicles. This model could be offered in partnership with a car rental or carsharing company or EDP could own or lease the cars itself. Furthermore, EDP would provide the charging infrastructure and related services.

3.2 Risk & Potential Matrix

To assess the attractiveness of the potential business models, the authors have developed a category attractiveness matrix for electric mobility solutions for the B2B segment. In this matrix, potential is displayed on the x-axis and risk is displayed on the y-axis. In order to determine the risk and potential score of each model, several risk and potential criteria were defined. On these criteria, the models were rated on a scale from one to five. Furthermore, each of the criteria was

assigned a weight, which represents its relevance for the choice of adequate projects and enables calculating the final risk and potential score for each model (Appendices 17 & 18). The matrix can be divided into four quadrants, normally according to risk and potential either being lower or higher than 2.5, which represents the midpoints of the axes. However, since electric mobility is still in the very early stages in Portugal, especially for businesses, all models exhibited a relatively high risk and were distributed among the upper right quadrant of the matrix, which made a reasonable differentiation of the models challenging. Therefore, the authors have decided to place the boundaries of the four quadrants at the mean values of risk and potential of the models instead, which are 2.9 and 2.8 respectively (Appendix 19). This adjustment made it possible to classify the models according to their attractiveness. The majority of the models was placed in the “No Go” quadrant, which represents high risk and low potential. This is mainly due to aspects such as that the necessary technology does not exist yet or that required vehicle models are not available in Portugal. However, three models are placed on the right side of the matrix, which represents high potential. EDP E-Carsharing is classified as a “Question Mark” (high potential and high risk), and *EDP Frota Verde* and EDP Charging Power are identified as having a “Bright Future” (high potential and relatively low risk). At this stage, the authors have decided to discard the “No Go” models and to further explore and develop EDP E-Carsharing, *EDP Frota Verde*, and EDP Charging Power by means of primary research.

4. First Primary Research Phase

4.1 Marketing Problem

The objective of this part of the research was to gather insights on the market for mobility solutions for businesses and to understand companies' attitudes towards electric mobility, their current adoption of PEVs and charging stations, and their needs and concerns regarding mobility solutions in general and electric mobility in particular.

4.2 Companies

4.2.1 Methodology and Interview Guide

For this research phase, the authors conducted in-depth interviews with fleet managers or other persons in charge for the fleets of their companies. To provide some guidance and to ensure that all important topics were covered, three interview guides were developed: one for fleet management and leasing companies, one for taxi, bus, and car rental companies, and one for all other companies (Appendices 20, 21 & 22). In the beginning of the interview, all other companies were filtered into companies that have a fleet and companies that do not have a fleet. Furthermore, all companies with a fleet were filtered into companies that already have PEVs in their fleets and companies that do not have a fleet with PEVs yet. In the following, the companies were asked about their fleets or the reasons for not having a fleet respectively and about their experience with and attitude towards PEVs and charging stations. Fleet management and leasing companies were also asked for information about the fleets of their clients. Further parts of the interviews aimed at gaining insights on the mobility solutions companies use to go to meetings, events etc., which also included questions about their experience with and attitude towards carsharing. In addition, the interviewed companies were asked about topics such as renewable energies or any other initiatives for 'greener operations' in order to get a better understanding of the degree of their environmental concerns and their willingness to invest in this area. Please see Appendix 23 for the interview transcripts.

4.2.2 Sample

The interviews were conducted with 32 companies in Portugal. The sample includes companies of all sizes, from less than 10 employees up to more than 2,000 employees, and from the most varied sectors in order to get a broad understanding of the market and the needs and behaviors of different types of companies (Appendix 24). Only 3 companies did not have a fleet, but the other companies in the sample had fleets of all sizes – from less than 20 vehicles up to more than 650

vehicles (Appendix 25). Furthermore, 5 out of the 29 interviewed companies with a fleet already use PEVs, although with one exception they only make up for marginal parts of the fleets.

4.2.3 Main Findings

Most of the interviewed **companies with a fleet** finance their vehicles through operational leasing (20 out of 29), mostly due to financial advantages (10) and less responsibility (12). Furthermore, most companies in the sample (18) rely on the leasing and fleet management companies to do the management of the vehicles, including maintenance, insurance, etc. When updating their fleet, the interviewed companies typically assess their current needs and then consult car manufacturers or leasing/fleet management companies to negotiate their fleet solutions. For benefit vehicles¹², each position in the company has a plafond (7) or a set of predefined options to choose a vehicle (5). In terms of buying drivers, the most important aspects are the price (20), the brand (5), specific characteristics (4), and the TCO (3). Almost half of the sample (13) only travels short distances, whereas 13 companies travel both long and short distances and only 3 companies travel only long distances, which is an important aspect to consider when taking into account the limited autonomy and currently long charging times of PEVs. Another important aspect regarding the installation of charging stations is if companies own or rent their parking spaces. More than half of the companies interviewed (16) own their parking space, whereas 13 rent it.

The 5 interviewed **companies with EVs in their fleet** use them to cover short distances (4) or as pool cars (2), to go to meetings (1) or to promote electric mobility (1). Furthermore, 2 companies give PEVs to employees in high positions as benefit vehicles. For the 5 companies that already use PEVs, the advantages of having PEVs in their fleet are savings due to lower maintenance costs, tax benefits and lower fuel costs (3), an improvement of the company's image (1), and environmental concerns (1). However, obstacles and disadvantages they affirm regarding

¹² Benefit vehicles refer to vehicles that are attributed to employees as a complement of their salary and are used for personal purposes.

having PEVs in their fleets are the low autonomy (3), the high price (2), lack of adequate models in the market (1), and technology uncertainty (1).

The 24 **companies without PEVs in their fleet** in the sample mention as reasons for not adopting PEVs the price (10), the autonomy (7), a lack of adequate models in the market (2), uncertainty about the evolution of the market (1), the uncertain time for payback of the investment (1), and not enough public charging stations (1). Thus, the most important reasons for not adopting PEVs yet are equal to the obstacles and disadvantages companies with PEVs in their fleets mentioned. On the other hand, the companies considering to adopt PEVs in the future, are doing so because of an expected decrease in mobility costs (9), environmental concerns (6), and an expected improvement of the company's image (4).

Regarding charging stations, only 5 out of 29 companies already have charging stations for their employees and/or customers, even though 10 out of 29 companies consider installing charging stations in the future. Seven out of these 10 companies want to make their future charging stations available to employees and clients. The most frequently mentioned reasons for adopting charging stations are that they allow employees to charge their PEVs on company premises instead of having to use a public charging post and the lower charging costs once the billing system for the public chargers starts working. However, obstacles and disadvantages mentioned are that the billing system is not ready yet, the parking space does not always belong to the company, and a lack of expertise in charging solutions.

In terms of mobility solutions, the 3 **companies without a fleet** mainly use the cars of employees, taxi or Uber for short distances and trains or planes for longer distances. The **companies with a fleet** (26) most frequently use the company's car (26), as well as taxis (12), Uber (6), metro (4), and bus (2). Some companies use the train (5) or planes (3) for longer distances as well as rental cars (3) for international locations or when no car is available.

None of the **companies without a fleet** have used carsharing until now, but they are open to considering using this service in the future. Only 1 company with a fleet has used an external carsharing service until now, but 5 companies have already used some kind of internal carsharing (e.g., pool cars). Four other companies are already using other internal sharing solutions such as employees going to meetings together in the same car to save costs. Five of the companies are open to considering using a carsharing service in the future. The mentioned reasons are that carsharing is perceived as a future mobility solution and that one of its advantages is the efficient usage of vehicles. However, obstacles and reasons for not considering carsharing include a lack of knowledge about the concept. The term carsharing is widely misused and often confused with other concepts such as ride hailing (e.g., Uber). Furthermore, several companies are simply not looking for other mobility solutions than the ones they are currently using. In addition, the carsharing cars are not available in all areas and there exists a certain insecurity about the availability of the cars when needed. Furthermore, company policies frequently define the mobility solutions which can be used by company employees and often do not include carsharing (yet), and companies perceive that it could be difficult to guarantee the employees' security when using a carsharing service.

Another part of the interviews was directed at gaining insights on the degree of environmental concerns of the interviewed companies and about their willingness to invest in this area. Only 7 of the interviewed companies already use renewable energies. However, several companies consider adopting renewable energy solutions in the future and at least 26 companies in the sample already implemented sustainable initiatives. Currently, EDP provides energy to at least 18 companies of the sample and the mentioned reasons to choose EDP were the price, expertise, and being a top of mind brand.

Thus, the majority of the interviewed companies are considering incorporating PEVs in their fleet, although current adoption is very low. The biggest obstacles to the adoption of PEVs are the perception of price and autonomy and a lack of adequate models in the Portuguese market.

Furthermore, there is a perceived lack of adequate charging infrastructure, including aspects such as maintenance, the number of charging stations, and the operating system, and companies are not fully aware of the advancements in the electric mobility market because they only update their fleet every three to four years. Despite these challenges, companies working together with leasing and fleet management companies have started to request consultancy services in what regards electric mobility. Furthermore, most companies are not aware of the carsharing offering and concept, but 9 companies in the sample already use some kind of internal sharing concepts, which might indicate a certain openness towards an adequate carsharing offering.

4.3 Industry Experts

As part of the first primary research phase and to get a deeper knowledge of the B2B automotive market, Hugo Jorge, the Director of the Fleet Magazine¹³, was interviewed to gather insights about the market and valuable information to enrich the business models.

4.3.1 Main Findings

According to Hugo Jorge, there is a lack of information regarding vehicles in Portugal because no one knows exactly how many of the cars in circulation belong to companies (it is estimated as 60%). As mentioned by Hugo Jorge, companies want and need to reduce their costs, so they are analyzing all components of the TCO. One of the main components is fuel consumption as well as the tax benefits companies can take advantage of. In order to get a trustful TCO, companies should compute their own TCO or use independent entities like TecAlliance, but instead they are using fleet management/leasing companies or manufacturers to do so which may lead to a biased result as these entities will promote the vehicles that bring them more advantages and will not make a comparison with other brands. Companies are also interested in gathering information about the electrification of their fleets due to the high costs and price volatility of fuel. Furthermore, companies are also aware of the benefits that having EVs in their fleets can bring to

¹³ Independent magazine launched in 2009 that has become a reference in Portugal in what regards fleet management (Fleet Magazine n.d.)

their company's image, especially if they are multinational or publicly traded. The main reasons for the current low adoption of EVs are: the higher initial price/rent, the lack of trust in technology, the uncertainty about the evolution of the market and the low autonomy of the vehicles. Hugo Jorge believes that although most companies use vehicles for short distances, they still believe that the autonomy of EVs is not sufficient and that if they occasionally need to travel longer distances, EVs will not be up to the job. The changes in the companies' fleets will start with benefit vehicles because they are typically used for shorter distances and can easily be electrified. For commercial purposes, sometimes it is still difficult to find the adequate EV model in the market. In Portugal, the EVs' fleet integration is very spread across companies. Regarding carsharing, Hugo Jorge stated that there have been some companies in Portugal offering that service for a long time, but they were not as successful as predicted. This happened mainly for two reasons. The first one is related with the fact that it would be extremely difficult to end with the benefit vehicles in Portugal. Secondly, all the carsharing offering was located mainly in Lisbon and a lot of companies are located outside this area. Even so, in 2017 there has been a resurgence of this market with new operators at a global scale (e.g., DriveNow). When asked about the future of mobility, Hugo Jorge believes that the solution for the fleets in Portugal to become more efficient would be to decrease benefit vehicles and invest in full mobility programs that would incentivize employees to get to work using a wider range of transports.

5. Second Primary Research Phase

5.1 Marketing Problem

The main objective of the second phase of the primary research was to extend the insights from the first phase and to test several value propositions related to the three potential business models EDP Charging Power, *EDP Frota Verde*, and EDP E-Carsharing.

5.2 New Sample of Companies

5.2.1 Methodology, Questionnaire, and Limitations

In this phase, the authors collected information by means of two questionnaires. Due to the limited amount of time and the challenges to get a large number of responses in a B2B environment, the first questionnaire was targeted at fleet managers or other persons in charge for the fleets of their companies, which were present at the *Conferência Gestão de Frotas 2017*¹⁴ and had not been interviewed previously (Appendix 26). The conference is the biggest annual event in this area and the authors consider the attending companies as being representative for the companies with fleets in Portugal. Therefore, the 300 attendees of the conference were defined as the population.

The second questionnaire was sent to companies that had already been interviewed before. Both questionnaires were unbranded, thus they did not mention EDP in any place. At the conference, the authors got the opportunity to ask the attending fleet managers to fill in the questionnaire on several iPads with their guidance. The questionnaire started with two filter questions, splitting the respondents into **companies without a fleet**, **companies with a fleet with EVs**, and **companies with a fleet without EVs**. After this, the three groups of companies were asked different questions about their fleets and their attitudes towards EVs. After these first separate sections, the remaining parts of the questionnaire were the same for all targets. Like in the interviews, these parts included questions about the adoption of and the attitude towards charging stations for employees and the mobility solutions companies use. Furthermore, a central part of the questionnaire was the testing of several value propositions related to the three potential business models. The respondents were also asked how well informed they consider themselves regarding electric mobility solutions.

However, there are certain limitations that need to be considered for this research phase. Although the authors were personally present when the fleet managers answered the questionnaire

¹⁴ Fleet management conference, which took place in Centro de Estoril, Portugal, on the 27th of October 2017.

helped to clarify questions and significantly increased the response rate, this presence might also have had an influence on answers to questions such as how well informed the fleet managers consider themselves regarding electric mobility solutions. Even though the authors emphasized the anonymity of the questionnaire and took great care of not observing the respondents when answering to such questions, the answers might still be biased and more positive than they would have been if the respondents had answered the questionnaire alone.

5.2.2 Sample

The questionnaire was filled in by 33 companies, representing more than 10% of the defined population. The sample includes companies of all sizes, from less than 10 employees to more than 2,000 employees, and from the most varied sectors (Appendix 27). All companies in the sample have a fleet – from less than 20 vehicles to more than 650 vehicles (Appendix 28). Furthermore, 19 out of 33 companies already use EVs in their fleets. However, only 4 of them have more than 20 EVs. Thus, overall, EVs still only make up for marginal parts of the fleets.

5.2.3 Main Findings

In the sample, 19 companies already incorporated EVs in their fleets. The reasons include environmental concerns (15), the company's image (11), tax benefits/fiscal advantages¹⁵ (9), cheaper vehicle consumption (electricity vs. fuel costs) (7), the company's internal goals such as reduction of CO₂ emissions (7), and the TCO (6). Out of the 14 **companies with a fleet without EVs**, 11 are considering them for the future. Reasons for the consideration of EVs are environmental concerns (9), tax benefits/fiscal advantages (8), TCO (5), company's image (5), cheaper vehicle consumption (4), and internal goals (4). Thus, they are similar to the reasons why **companies with a fleet with EVs** chose to adopt them. At the moment, the majority of the companies in the sample (22 out of 33) do not have charging stations for employees and/or customers. However, most of them are considering them for the future. The main reasons for not

¹⁵ Factors such as tax benefits or lower electricity costs compared to fuel costs are technically included in the TCO, however, since several companies explicitly mentioned them in the interviews and were not entirely comfortable with the TCO concept, the authors decided to also include them as separate answer options.

considering are the price and not having EVs. Furthermore, only 3 companies with less than 200 employees already have fleets with EVs, whereas 16 out of 22 companies with more than 200 employees have EVs. Thus, larger companies and companies with larger fleets seem to be more likely to already have EVs.

The first value propositions that were tested with the questionnaire are related to the EDP Charging Power business model. Firstly, it was asked *if the companies were interested in requiring consultancy services to find an optimal charging solution*. Nineteen companies agree or completely agree, 6 companies neither agree nor disagree, and 8 companies do not agree or completely disagree. The main reasons are presented below:

Main reasons for being interested	Main reasons for not being interested
- Do not have the expertise to choose the optimal charging solution themselves (11) - Are already looking for this kind of service (6)	- Have the necessary expertise (3) - Have already required this kind of consultancy services (2) - Are happy with their current charging solution (2)

Table 2 – Companies' interest in consultancy services for chargers

The next question was *if the companies would be interested in using an outsourcing company to provide and install the charging infrastructure as well as provide additional services, e.g. maintenance, assistance, and charging management*. Twenty-one companies agree or completely agree, 6 companies neither agree nor disagree, and 6 companies disagree or completely disagree.

The main reasons are presented in Table 3:

Main reasons for being interested	Main reasons for not being interested
- Sounds like a very convenient solution (9) - Using only one company to provide all these services enables cost savings (5) - Are already looking for this kind of service (6)	- Are happy with their current charging solution (3) - Have the expertise to perform these services themselves (2) - Have already required this kind of service (1) - Not interested in having chargers (1)

Table 3 – Companies' interest in using a company that provides and installs the charging infrastructure as well as provides additional services

In the following, the fleet managers were asked *if their companies would be interested in a combination of the services mentioned in the two previous questions*. Eighteen companies agree or completely agree, 6 companies neither agree nor disagree, and 9 companies disagree or completely disagree. When asked about *who they would contact for this kind of services*, some

companies mention either energy or leasing companies. However, 24 companies do not know whom to contact, which represents a clear opportunity for EDP.

The next section tested value propositions for the *EDP Frota Verde* business model. First, companies were asked *if they were interested in using an outsourcing company to provide a full mobility solution*¹⁶. Twenty companies agree or completely agree, 5 companies neither agree nor disagree, and 8 companies disagree or completely disagree. The main reasons are presented below:

Main reasons for being interested	Main reasons for not being interested
• Allows cost savings (9) • Sounds like a very convenient solution (7) • Are already looking for this kind of service (3)	• Have the necessary expertise themselves (3) • Are happy with their current solution (3) • Are not interested in having EVs (1)

Table 4 – Companies' interest in a full mobility solution

The most frequent modes of transportation used by the companies in the sample are company vehicles (33), planes (23), taxi (17), rent-a-car (12), ride hailing (10), the vehicles of employees (8), and public transport (8). The majority of the companies in the sample are not using external carsharing services. However, 20 out of 33 companies already use some kind of internal carsharing such as pool cars. Fourteen companies consider using a carsharing service in the future and 12 do not know it yet. Reasons for considering carsharing in the future include convenience (e.g., booking and payment via app) (8), the price (6), and comfort (vehicle quality) (4). When asked about *if they would be interested in implementing an internal carsharing system, with which employees could book cars for professional trips during the working day, but also for private trips during the weekends or to commute (and pay themselves for these private trips)*, 16 companies agree or completely agree, 12 companies neither agree nor disagree, and 5 companies disagree or completely disagree. The main reasons for whether companies are interested or not are presented below:

Main reasons for being interested	Main reasons for not being interested
• Allows cost savings (9) • Offers additional value and opportunities to employees (8) • Think it is the future (7)	• Depends on how the service would work (8) • Depends on the potential savings for the company (3) • There could be problems with ensuring the availability of the cars (3)

Table 5 – Companies' interest in an internal carsharing system

¹⁶ This means consultancy services for the electrification of the fleet, providing the EVs and the charging infrastructure, managing the company's EVs, etc.

Furthermore, the respondents were asked *if their company would be interested in sharing cars with several companies in the same area (e.g., the same business park) in order to reduce the associated cars' costs*. Sixteen companies agree or completely agree, 5 companies neither agree nor disagree, and 12 companies disagree or completely disagree. The main reasons are presented in Table 6:

Main reasons for being interested	Main reasons for not being interested
• Allows cost savings (9) • Makes sense since the companies are using the same business park parking space (8) • Offers additional value and opportunities to employees (4) • Think it is the future (4)	• Employees would not like to share the same cars with other companies (6) • Depends on how the service works (4) • Offering the service brings no advantages (3) • Depends on potential savings for the company (2) • Low control over the vehicles (2)

Table 6 – Companies' interest in carsharing between companies

Twenty-three companies would still be interested if the cars were electric, 6 companies are not sure, and 4 companies would not be interested anymore because charging and the autonomy of the cars could be an issue.

The last question before the 'firmographics' was if the fleet managers consider themselves well informed regarding electric mobility solutions. Four respondents consider themselves "very well informed" and 13 answered "well informed", whereas 15 respondents selected relatively well informed and 1 respondent said "not well informed". However, as explained in section 5.2.1 Methodology, Questionnaire, and Limitations, this result might be biased and more positive than normally due to the presence of the authors. All results are also presented in Appendix 29.

Thus, in this sample, more than half of the companies have already incorporated EVs in their fleets. However, with few exceptions, the number of vehicles is still very low and the EVs generally only account for a very small part of the fleet. The main reasons for (considering) adopting EVs are environmental concerns, tax benefits/fiscal advantages, TCO, company image, cheaper vehicle consumption, and the internal goals of the companies. Furthermore, the average daily distance travelled by the passenger vehicles in the fleets of the companies in the sample is very promising for the possible adoption of EVs. For 11 companies it is less than 50 km, for 15 between 50 and 99 km, for 6 between 100 and 200 km, and only for one company it is between 201 and 300

km. Especially daily distances up to 200 km can effortlessly be travelled with the PEVs that are currently in the market. Overall, the responses to the value propositions for the three potential business models were very positive and since EDP is a very strong brand, the answers might have been even more positive if the brand had been included in the questionnaire. However, companies seem to be more skeptical when it comes to carsharing compared to the other two models.

5.3 Same Sample of Companies as in the First Primary Research Phase

5.3.1 Methodology and Questionnaire

The second questionnaire was sent via email to the companies that had already been interviewed in the first research phase in order to also test the value propositions for the three business models with this sample. The questionnaire was similar to the one that was distributed at the fleet management conference (Appendix 30).

5.3.2 Sample

The sample for this questionnaire includes 18 companies - 8 with less than 200 employees and 10 with more than 200 employees (Appendix 31). The companies have fleets of all sizes (Appendix 32) and 6 out of 18 companies already have EVs in their fleets. With one exception, they again only make up for marginal parts of the fleets.

5.3.3 Main Findings

In this sample, 8 out of 18 companies would be *interested in requiring consultancy services to find the optimal charging solution for their needs*. Seven neither agree nor disagree, 2 disagree, and 1 company completely disagrees. The main reasons are presented below:

Main reasons for being interested	Main reasons for not being interested
• Are looking for this kind of service (4) • Do not have the expertise to choose the optimal charging solution themselves (3)	• Rented parking space so it would be the landlord's decision (4) • Not interested in having chargers (1)

Table 7 - Previously interviewed companies' interest in consultancy services for chargers

Furthermore, 8 companies would be *interested in using an outsourcing company to provide and install the charging infrastructure and provide additional services*. Eight neither agree nor disagree and 2 companies are not interested. The main reasons are presented in Table 8:

Main reasons for being interested	Main reasons for not being interested
• Are already looking for this kind of service (4) • Sounds like a very convenient solution (3) • Using only one company to provide all these services enables cost savings (2)	• If company considers to acquire (additional) EVs (3) • Depends on the price of the service (3) • Have the expertise to perform these services themselves (1) • Not interested in having chargers (1)

Table 8 - Previously interviewed companies' interest in using a company that provides and installs the charging infrastructure as well as provides additional services

When asked about a *combination of the services mentioned in the two previous questions*, 7 companies would be interested, 9 companies neither agree nor disagree, and 2 companies would not be interested. Afterwards, the fleet managers were again asked *who they would contact for this kind of services*. The majority does not know who they would contact, which represents a clear opportunity for EDP, however, 3 companies mentioned leasing companies. Six companies would be *interested in using an outsourcing company to provide a full mobility solution*, 7 neither agree nor disagree, and 5 companies would not be interested. The reasons are presented in Table 9:

Main reasons for being interested	Main reasons for not being interested
• Sounds like a very convenient solution (3) • Enables cost savings (3) • Think it is the future (7)	• Have the necessary expertise (3) • Depends on the price of the service and on if the company considers to acquire (additional) EVs (3) • Already consider acquiring (additional) EVs (3) • Are happy with their current solution (1) • Prefer to outsource these services to separate companies (1)

Table 9 - Previously interviewed companies' interest in a full mobility solution

In this sample, only 3 companies are occasionally using a carsharing service and 7 companies use some kind of internal carsharing such as pool cars. Four companies consider using carsharing in the future and 7 do not know it yet. The reasons mentioned for considering carsharing in the future are again convenience and price. When asked about being *interested in an internal carsharing solution, with which cars could be booked for professional and private trips*, 5

companies would be interested whereas 8 companies would not be interested, and 5 neither agree nor disagree. The reasons are presented below:

Main reasons for being interested	Main reasons for not being interested
• Allows cost savings (3) • Offers additional value and opportunities to employees (2) • Think it is the future (1)	• There could be problems with ensuring the availability of the cars (3) • Would not consider using a carsharing service (2)

Table 10 - Previously interviewed companies' interest in an internal carsharing system

Three companies would be *interested in sharing cars with several cars within the same area*, 6 would not be interested, and 5 companies neither agree nor disagree. The main reasons are presented in Table 11:

Main reasons for being interested	Main reasons for not being interested
• Allows cost savings (2) • Offers additional value and opportunities to employees (1) • Think it is the future (1)	• Companies' vehicles are already being used in an efficient way (4) • Depends on how the service works (3) • Employees would not like to share the same cars with other companies (2) • The company would never consider it (1) • Offering the service brings no advantages (1) • Depends on potential savings for the company (1)

Table 11 - Previously interviewed companies' interest in carsharing between companies

Four companies would still be interested if these cars were electric, 10 companies do not know, and 4 companies would not be interested anymore. Reasons for not being interested anymore are that not all required vehicle models are available as electric versions and that the autonomy and the charging could be an issue.

In this sample, 5 respondents consider themselves "well informed" about electric mobility solutions, 10 say they are "relatively well informed", and 3 answered "not well informed". Thus, compared to the first sample, these answers are less positive, which presents an opportunity for consulting services. Furthermore, the average daily distance travelled looks promising again. Six companies travel less than 50 km a day, 8 companies travel between 50 and 99 km, 1 company travels between 100 and 200 km a day, and only 3 companies travel between 201 and 300 km a day. All results are also presented in Appendix 33. Overall, the responses to the value propositions for the EDP Charging Power and *EDP Frota Verde* business models were very

positive. However, companies' skepticism regarding carsharing led to more negative responses to the value proposition of the EDP E-Carsharing business model.

6. The Solution

Inferring from the results of the primary and secondary research, companies in Portugal are generally open towards PEVs, but still perceive obstacles toward their adoption at a larger scale, which can be overcome with consultancy services. This fact together with the current low number of PEVs in Portugal led to the conclusion that in order to sell chargers, PEVs need to be sold in parallel. Therefore, *EDP Frota Verde* was the business model chosen.

Consequently, *EDP Frota Verde* is a turnkey solution for electric mobility solutions for businesses with a differentiation advantage due to a unique service offer linked to a premium price. The offering consists of consultancy services to determine the appropriate number and type of PEVs and the proper charging solutions, as well as the provision of the vehicles and chargers.

Sustainable competitive advantage can be achieved by developing mechanisms against imitation and replication, accumulating an organizational resource platform, and acquiring market position (Porter 1985). Regarding the first, *EDP Frota Verde* counts with its reputation and strategic fit as well as the depth of the consultancy projects due to its unique position in the energy market and an expert team performing the consultancy services. Furthermore, *EDP Frota Verde* will count on relationships with the providers of PEVs and charging stations and profound, ongoing relations with its clients due to dedicated sales people. In addition, *EDP Frota Verde's* first mover advantage is expected to position it as a well-established player in the market by the time competitors start following.

7. Marketing Strategy

The marketing process of Segmentation, Targeting and Positioning (STP) is the first essential condition in order to build a successful business (Gupta 2014).

7.1 Segmentation

The first phase, segmentation, consists of identifying and dividing the market into different groups that express the same needs and preferences and that have an identical response to different marketing approaches (Gupta 2014; Hutt and Speh 2013). Given the primary and secondary research conducted, in general, Portuguese companies are open towards electric mobility, but they are still hesitant to electrify large parts of their fleets because of concerns regarding factors such as PEVs' prices and autonomy and the charging infrastructure. According to 'firmographic' variables, the companies to be addressed are located in Portugal, from all industries and privately owned¹⁷. Furthermore, due to their different size, two other variables, behavioral and benefits sought, were used to segment the business market for electric mobility. In the end, it was possible to identify three main segments.

Large companies with a fleet: Large companies (generally more than 250 employees)¹⁸ that have a fleet usually tend to have larger fleets than smaller companies. These companies often have higher energy consumption levels¹⁹. Most frequently, this segment prefers to use operational leasing (typically 3 or 4-year contracts) as the main way of financing their fleet as they consider this the option with most business advantages. Given the forecasted evolution in the automotive market, large companies with a fleet are looking for a convenient solution, which allows them to integrate PEVs in their fleet due to cost savings and the improvement of the company's image. Currently, some large companies already have PEVs in their fleets, but they only account for a very small share of their total fleet. This type of companies is more pressured to comply with regulatory and social standards which may be an additional incentive to integrate PEVs in their fleets, and consequently, to find an offering that provides them the best electric mobility solution.

¹⁷ Publicly owned companies, municipalities, and government are automatically excluded from the scope of the authors' business model development. As agreed with EDPC, only privately-owned companies will be considered.

¹⁸ As per the economic definition of SMEs and only considering the number of employees (COMPETE 2013). The same reference was applied to the following segments.

¹⁹ Often using MT installations or having an aggregate consumption higher than 3 GWh (According to EDPC).

SMEs with a fleet: Larger SMEs (usually more than 10 employees) that have a fleet tend to have smaller fleets when compared with large companies and thereby usually buy in smaller volumes. These companies often have lower energy consumption levels²⁰. SMEs still continue to prefer to buy the vehicles for their fleet and still consider this being the option that can provide them more business advantages. Despite this fact, larger SMEs are already an emerging segment concerning the use of operational leasing and are becoming more aware of the financial advantages of this solution. Furthermore, they are constantly looking for ways to obtain cost savings and may carefully consider the integration of PEVs into their fleets as soon as they can truly see the benefits, mainly in fiscal terms.

SMEs without a fleet: Smaller SMEs (usually less than 10 employees) do not have the need or the financial availability to have their own fleet and, if needed, the employees' vehicles may be used. These companies often have lower energy consumption levels²¹. SMEs without a fleet still consider it more important to invest in other crucial areas of their business in order to allow it to grow and only in a later stage they may consider having a fleet. Cost savings are their main goal and environmental concerns are not yet an important factor to take into account when managing their business.

7.2 Targeting

The second phase, targeting, aims to understand which segments have higher levels of attractiveness and are the most profitable ones (Gupta 2014). When assessing the attractiveness of the three previous segments, a similar score was obtained concerning company's fit and intensity of competition (Gupta 2014). In order to choose the most attractive segments, four other dimensions related to the segments' characteristics – Accessibility²², Expected Profitability²³,

²⁰ Often using BTE installations or having an aggregate consumption between 200MWh and 3 GWh (According to EDPC).

²¹ Often connected to grids of *Baixa Tensão with Potência Contratada* inferior or equal to 41.4kW (BTN, Baixa Tensão Normal) or having an aggregate consumption lower than 200MWh (ERSE 2017a; According to EDPC).

²² According to Hutt and Speh (2013), accessibility refers to “the degree to which the firm can effectively focus its marketing efforts on chosen segments”.

Segment Size²⁴ and Responsiveness²⁵ – were rated using a scale from one to five (Appendix 34). Large companies and SMEs with fleets are the chosen targets because they represent a higher level of attractiveness for *EDP Frota Verde*.

7.3 Positioning

The third phase, positioning, consists on the specific space a brand is able to occupy on the customers' minds (Tybout and Calder 2010). For the definition of the brands' positioning, a positioning map needs to be created (Wirtz and Lovelock 2016). *EDP Frota Verde* is clearly positioned in a distinctive place related to its main competitors, mainly due to the one-stop shopping solution it provides (Appendix 35). The positioning of *EDP Frota Verde* is further defined in two positioning statements, one for each target, which are presented below.

7.3.1 *EDP Frota Verde* – Large Companies' Positioning Statement

To large companies that already have a fleet and want to electrify it (**Target**), *EDP Frota Verde* is a brand of electric mobility solutions for businesses (**Frame of Reference**) that offers a turnkey solution characterized by one-stop shopping and consulting services for finding the optimal charging solution given the electric installations and the corresponding PEVs while also improving the company's image and generating cost savings (**POD**) due to electric mobility and because it is provided by a brand of EDPC, which is a well-established energy player in Portugal, with an expert team for electric mobility solutions for businesses (**Reason to Believe**).

7.3.2 *EDP Frota Verde* – SMEs' Positioning Statement

To SMEs that already have a fleet and want to electrify it (**Target**), *EDP Frota Verde* is a brand of electric mobility solutions for businesses (**Frame of Reference**) that offers a convenient tailor-made service menu, ongoing support during the entire process and cost savings (**POD**) due to electric mobility and because it is provided by a brand of EDPC, which is a well-established

²³ According to Gupta (2014), it is necessary to infer if the chosen segments will be profitable.

²⁴ According to Gupta (2014), it is necessary to infer how large a certain segment is.

²⁵ According to Hutt and Speh (2013), responsiveness refers to “the degree to which segments respond differently to different marketing mix elements, such as pricing or product features”.

energy player in Portugal, with dedicated sales people and an expert team for electric mobility solutions for businesses (**Reason to Believe**).

8. Brand

EDP Frota Verde is a brand that delivers electric mobility solutions for businesses under the EDPC brand, a sub-brand of EDP. It is well-established in the energy market in Portugal and its overall perception is positive, which is why *EDP Frota Verde* must exploit the corporate brand equity by being close to the master brand (Aaker 2004). In 2011, the brand went through a rebranding process, which resulted in a more unified brand (EDP n.d.b). Since then, all brands have incorporated the master brand's name and logo, such as EDPC, *EDP Renováveis*, and *EDP Inovação*. Thus, *EDP Frota Verde* should also be in line with EDP brand by inheriting its culture.

8.1 Brand Identity

The selected model of brand identity is Kapferer's Identity Prism, which is represented by a six-sided prism composed by six aspects: physical, relationship, customer reflection, personality, culture, and self-image (Appendix 36) (Kapferer 2012).

8.1.1 *EDP Frota Verde's* Identity Prism

The first aspect of Kapferer's Identity Prism, **physical**, gives emphasis to the brand's tangible features that first come to mind and are less visible for services than for products (Kapferer 2012). These features include the website, the consultancy report, and the red colored logo easy to recognize, resulting from the combination of four layered shapes (circle, half-circle, square, and triangle). Furthermore, it includes the typography and the iconography.

Personality is the set of personality traits the brand would have if it was a person (Kapferer 2012). *EDP Frota Verde* would be reliable and flexible, as well as socially and environmentally responsible. In addition, it would be innovative and dynamic. Moreover, it would be positive, friendly, inclusive, and comprehensive in the approach with others. This set of traits is

fundamental in order to reach companies, to be able to communicate the new service and product offerings, and to generate sub-category need.

The **culture** of a brand comprises the values that feed the inspiration of the brand and should be in line with the corporate brand's values, thus focusing on EDP's three main pillars: (1) innovation - following the market trends and new technologies; (2) humanity - work with and for the society; and (3) sustainability - greener operations and responsible attitude (Kapferer 2012). It also includes its Portuguese tradition.

Relationship is the counterpart given by the brand to its customers (Kapferer 2012). *EDP Frota Verde's* functional benefits delivered to its customers are bringing new electric mobility solutions to businesses, and delivering the best trade-off between electric mobility solutions and convenience through tailor-made solutions, one-stop shopping, and highly experienced professionals. As for the intangible benefits, these include reliable decision making supported by relationships, convenience, and open communication with clients.

The fifth aspect is **customer reflection**, the brand's desired or projected customer type (Kapferer 2012). *EDP Frota Verde's* aspired customer is a company located in Portugal looking for electric mobility solutions. This company is a forward-thinking company that sees opportunities in new technologies and is open to sustainability initiatives driven by concerns regarding environmental issues, marketing purposes, or the need to comply with regulations.

The last facet of the Identity Prism is **self-image**, representing the internal mirror of the brand's aspired customers (Kapferer 2012). By electrifying their fleets with *EDP Frota Verde*, customers will feel like they are making the best choice for their companies by reducing mobility costs and keeping up with new trends. Some of the thoughts in their minds might be "I am reducing costs for my company by opting for electric mobility solutions", "I feel like I am improving my company's image by contributing to a better environment.", and "I feel like my company keeps up with the latest innovations.". In addition, the corporate brand might have an

influence on customers' minds, which might think "I trust EDP because of its long experience in electricity and its continuous investment in R&D."

In order to visualize *EDP Frota Verde*'s identity prism, please consult Appendix 37.

8.2 Brand Architecture

EDP Frota Verde should be communicated under the EDPC brand, which is a sub-brand of EDP, the master brand (Appendix 38). EDP has a branded house strategy, which means that customers will be driven by the master brand (Aaker 2004). This strategy enhances clarity, synergy, and leverage - the goals of brand architecture (Aaker 2004).

8.3 Brand Elements

Brand image is how the brand is perceived by the customers and impacted by the brand elements, the marketing program, and the communication program (Keller 2008). Therefore, the brand elements should incorporate what brands are trying to portray through their services and products (Keller 2008). Furthermore, they should be memorable, meaningful, likable, transferable, adaptable, and protectable (Keller 2008). In case all criteria cannot be satisfied, it is necessary to make a trade-off (Keller 2008). All brand elements created for *EDP Frota Verde* are in line with the EDP brand and its branding rules in order to continue having a clear brand image (Keller 2008). The new brand's elements include the brand name, the website, and the slogan. The logos, the symbols and the color red remain the same, as defined in EDP's re-branding in 2011 (EDP n.d.b). *EDP Frota Verde* will have its own webpage, possible to access in www.edp.pt, where companies can get information and fill in a contact form. Moreover, the slogan - "*Eletrifique a sua Frota com EDP Frota Verde*" - must be used every time the brand communicates. It plays a very important role since it will be the first contact of companies with the brand and must be a call-to-action and self-explanatory regarding the brand's core service (Keller 2008).

9. Service Mix

9.1 Service/Product

After getting a better understanding of the customers' unmet needs and analysing the competing alternatives, an offering was built to create significant additional value for the targeted customers. The core offer is a **consulting service** that provides expertise for companies that wish to electrify their fleet. An expert team will be responsible for making a deliverable report with a situation analysis and the suggested recommendations. This report will cover one or both of the following focal points: **charging solutions** and **PEVs**. For the first, **charging solutions**, the expert team will assess the technical viability and the adequacy of the client's electric installations after a field trip and, according to the buildings' electric capacity, the current contracted power, and the number of existing or projected PEVs, propose the optimal quantity and type of charging stations. Taking into consideration the available technology, the most adequate charging station for most businesses would be 22kW and in mode 3 (Appendices 39 & 40). Other outputs of this evaluation would include the cost of increasing the contracted power, if needed, an electricity supply offer, and an estimation of potential savings from moving from diesel to electricity consumption. For the second, **PEVs**, the expert team would evaluate the client's fleet's purpose and current use with the help of a GPS tracking system and find the suitable quantity and type of PEVs. The price for this service would be set on a time-basis that depends on the complexity of the client's request and its fleet's size. The consultancy services will be classified as simple, medium and complex. A simple consultancy has an expected duration of 3 days and is recommended for fleets with less than 20 vehicles. A medium consultancy is for fleets with more than 20, but less than 100 vehicles and has a duration of 6 days. A complex consultancy is suggested for companies with a fleet with more than 100 vehicles and is expected to last up to 12 days.

As a supplementary service to the consulting, if the client wishes to follow the suggested recommendations, a convenient turnkey solution will be offered for the implementation. For

charging solutions, *EDP Frota Verde* will offer two selling options: the first is the sale and installation of the charging stations with an optional offer of a 4 years contract of complementary charging services that covers maintenance and insurance. The second is an operational leasing service, commonly, and from now on, referred to as **renting**. This service will also include the installation, maintenance, and insurance of the charging stations with the difference that the ownership of the equipment is on EDP and that, at the end of the 4-year contract, the client will have the option to upgrade the posts to a more recent model, buy the posts at a low price or renew the previous contract keeping the same posts and adjusting the monthly rent accordingly. For the PEVs, through a partnership with a leasing and fleet management company²⁶, *EDP Frota Verde* would also facilitate the operational leasing of the endorsed vehicles, providing a full one-stop shopping solution. All services and products will be offered unbundled for the companies that favour service menus and through a total turnkey solution for the companies that favour convenience and one-stop shopping. These options will be further discussed in section 9.2 Price.

9.2 Price

The mission of a company's marketing mix is to create value for customers and pricing is responsible for capturing this value (Dolan and Gourville 2014). *EDP Frota Verde* will do so through a feasible pricing strategy, which means capturing the value with a high price and high marketing expenditures (as mentioned in section 9.4 Communications Plan). *EDP Frota Verde* will therefore follow a value-based pricing approach instead of a cost-based pricing approach, since it is crucial to consider the value and benefits of its products and services to customers instead of having a pricing strategy that sets the price according to costs and a determined markup (Nagle and Smith 1994). Thus, the true economic value (TEV) of the offering was defined in order to set the final price.

²⁶ Preferably LeasePlan, the market leader in the operational leasing market in Portugal (LeasePlan 2017).

EDP Frota Verde's pricing objective is to implement a skimming pricing strategy in order to capture high margins at the expense of large sales volume, since B2B customers will highly value the service's differentiating attributes, and therefore, will be willing to pay a premium price (Nagle, Hogan and Zale 2014).

9.2.1 The Value-based Pricing Approach

In order to set the price, it is important to understand the TEV of *EDP Frota Verde's* service/product offering. The TEV is one of the key elements of a value-based pricing approach, which are represented in the value-pricing thermometer (Appendix 41), which also includes the perceived value (PV), the product/service price and its associated costs (Dolan and Gourville 2014; Gallo 2015).

The **TEV** for *EDP Frota Verde* is calculated by summing the next best alternative (diesel cars) and the value of the performance differential, which is the difference between: the TCO savings that the customer will achieve by switching from diesel cars to PEVs and the price paid for *EDP Frota Verde's* offering. The next best alternative is considered to be diesel cars for which the annual cost was computed considering an operational leasing financing scheme and the corresponding annual fuel consumption. Regarding the value of the performance differential, the TCO savings were calculated by comparing diesel cars' and PEVs' rents, consumption and fiscal advantages (summarized in Appendix 42). In order to calculate these savings, the TCO of PEVs and diesel cars was calculated for 3 different segments of cars (small, medium and premium), which have different fiscal advantages accordingly. For instance, a Nissan Leaf (with an annual spending of 5,140€) compared to a Ford Focus (6,240€) will have expected savings of 1,100€ per year and this value increases for higher categories of cars. Finally, the price paid for *EDP Frota Verde's* offering includes the consultancy services and the renting of floor charging stations with 22kW. This was calculated for 3 company profiles (with 10, 20 and 100 cars), for which there is a difference in

terms of the consultancy services price (simple, medium and complex projects) and in the number of charging stations rented (according to the ratio of 1 charger for 4 vehicles). The detailed calculations for all prices of *EDP Frota Verde's* offering are presented in the following sections. The consultancy price was defined as 800€/day plus a fixed fee for the GPS tracking analysis for the whole project, according to its complexity. The annual rent for a floor charger of 22kW with two sockets, for both interior or exterior, is 2,135€ per unit per year. By making this calculation for 3 segments of cars and for 3 types of consultancy projects, a total of 9 possible combinations was accessed (Appendix 43). For instance, the TEV for the small car segment and simple consultancy is 60,647€, for the medium car segment and medium consultancy it is 179,648€, and for the premium car segment and complex consultancy it is 2,251,423€.

For calculating the **PV** and to try to simulate the customers' beliefs according to the research conducted, some assumptions were made. Since the diesel cars' rents are widely available, these rents were assumed to be perceived correctly, which means, the same diesel cars' rent was used to calculate the TEV and the PV. However, the fuel consumption was assumed to be perceived as a lower cost, due to the volatility of its price, when compared to the value used to calculate the TEV. Furthermore, the value of the performance differential of *EDP Frota Verde* was calculated: TCO savings and the price of *EDP Frota Verde's* offering. As for the TCO savings, since customers are generally not fully aware of the potential savings and fiscal advantages of PEVs, the savings were assumed as undervalued. Regarding the price of *EDP Frota Verde's* offering, being a new offer in the market and taking into consideration the lack of education of the general customers on the subject, the expected price for the offer was also considered as lower for both the consultancy services (680€/day) and the renting of the charging stations (1,902€ per year). Following these assumptions, the PV was computed for the aforementioned 9 possible combinations. For instance, the PV for the small car

segment and simple consultancy is 53,055€, for the medium car segment and medium consultancy it is 169,703€, and for the premium car segment and complex consultancy it is 2,186,029€ (Appendix 43).

The **costs** for charging stations include the cost of the hardware, the cost of installation and transportation, and the cost of operation, as mentioned in section 9.1 Service/Product, which will be further discussed in the next section and discriminated in Appendices 44 & 45. In addition, the total cost for chargers following a simple consultancy project is 4,600€, for a medium consultancy project 7,600€ and for a complex consultancy project 38,000€²⁷.

Finally, the **price for the whole bundle** will be set. It includes the annual rent for the PEVs and the corresponding annual energy consumption, the consultancy service and the charging solutions. As *EDP Frota Verde* is using a skimming pricing strategy, the difference between the PV and the price will be very small. The price will generally be set right below the PV; however, for some car segments, the average price could be slightly higher than the PV. This is due to the fact that PEVs' rents are currently still higher than the rents for diesel cars. However, since *EDP Frota Verde* offers value differentiation through consultancy and one-stop shopping, enabling potential costs savings (which will be higher than the actual price of consultancy and the charging solutions offered), *EDP Frota Verde* will increase the customers' perceived value through extensive marketing activities and increase their willingness to pay for this added value offer (section 9.4 Communications Plan). The final prices for the individual parts of the offer will be set accordingly below.

9.2.2 Price Setting

EDP Frota Verde does not define prices by target segments, which means both targets have the same price for all business offerings. However, the customers can choose the best option

²⁷ According with the ratio of 1 charger for 4 PEVs. Therefore, for simple consultancy (10 PEVs) 3 chargers are considered, for medium (20 PEVs) 5 chargers, and for complex (100 PEVs) 25 chargers.

according to their needs, so different pricing menus of the offering have been defined through pricing formulas (Appendix 46).

In order to simplify the calculations, consultancy services are defined by simple, medium and complex, corresponding to a different number of days per project (Appendix 47). The **consultancy price**, defined according to the market average for consultancy services, is 800€ per day (eight working hours) plus a fixed fee for the GPS analysis for the whole project, according to its complexity (Appendix 47). The cost of consultancy is 255.70€/day, which includes daily costs with salary, insurance, social security, food allowance and transportation (Appendix 48).

The prices of the chargers and complementary charging services were defined according to market averages and information provided by EDP. Four types of chargers are included in *EDP Frota Verde's* offering. Besides, as mentioned in section 9.1 Service/Product, *EDP Frota Verde* will offer two options: buying and renting. For the **charging stations that are bought**, the COGS include the cost of hardware and the cost of installation and transportation of 250€ per charger (Appendix 44). Additionally, a profit margin of 20% was assumed, which leads to the following final prices: 4,550€ for floor 11kW charging stations and 4,800€ for 22kW, and 2,369€ for 11kW wallboxes and 2,519€ for 22kW (Appendix 49). For the **rented charging stations**, the COGS include the cost of hardware, the cost of installation and transportation of 250€ per charger and the cost of complementing charging services of 560€ per year per charger (Appendix 45). Besides, a renting margin of 11% (compared to the price of buying the chargers and acquiring complementing charging services) was assumed. Therefore, the final monthly price for a 4-year contract is 172€/month (2,065€/year, meaning 8,258€ for four years) for a floor charger with 11kW, and 178€/month (2,135€/year, meaning 8,539€ for four years) for 22kW (Appendix 50). Also, the monthly price for a wallbox with 11kW is 121€/month (1,452€/year, meaning 5,808€ for four years)

and with 22kW it is 125€/month (1,494€/year, meaning 5,976€ for four years) (Appendix 50). For the **charging services**, the COGS are 560€ and the profit margin is 20%, which results in a price of 700€/charger/year (Appendix 51).

9.2.2.1 Contract Renewals

EDP Frota Verde also provides customers with the option to renew the contracts for the complementing charging services and for the renting of charging stations after 4 years. When the renting contract for chargers ends, customers have different options: (1) Buy their current chargers at a lower price (30% of the original price) and decide whether to acquire complementing charging services from EDP²⁸; (2) keep renting their current charging stations at a lower rent (based on 30% of the original price of the chargers)²⁹; or (3) upgrade their charging stations to the latest chargers available in the market and keep paying the same rent (Appendix 52).

9.2.2.2 Contract Breaches

In order to facilitate the calculations, it was assumed that customers can breach their contracts after 2 years, which amounts to half of the contract duration. In what regards complementing charging services, customers do not have to pay any sanction for the end of the charging services contract, and *EDP Frota Verde* simply stops providing the service; however, these companies still need to pay for the rest of the consultancy project (which is paid in monthly installments spread over the four years of the contract). Regarding the breach of a contract for the renting of charging stations, customers have two options: They can either (1) pay a sanction and *EDP Frota Verde* removes the charging stations from their premises or (2) buy the charging stations. For both options, they still need to pay for the remaining half of the consulting prices³⁰. If they choose to pay the sanction, this amounts to 50% of the original price of the chargers (if the contract breach occurs in the second year of the first contract for

²⁸ For instance, for a floor charger of 22kW, customers would pay 1,346 €/unit.

²⁹ For instance, for a floor charger of 22kW, customers can rent them for another 4 years for 4,659€/unit.

³⁰ For instance, for a medium consultancy project, customers will have to pay 2,750€.

the charging stations) to cover the costs for *EDP Frota Verde*³¹ (Appendix 53). If customers decide to buy the chargers, they will have to pay half of the initial product price (as for the sanction) plus a margin of 20%, due to the advantage of being able to use the charging stations in the future³². For the PEVs, *EDP Frota Verde* is the facilitator between the customers and the leasing company, so rules for breaches will be defined in a different contract (between the leasing company and the customer). These breaching strategies are in line with *EDP Frota Verde's* strategy of not having inventory and covering possible costs to not negatively affect its profit.

9.2.3 Pricing Menu and Quantity Discounts

EDP Frota Verde's offering consists of product and service bundling with a pricing menu. Regarding purchase quantity, a discount will be used when customers order charging stations. At each five charging stations bought or rented, a discount of 1.1% will be given³³ (Appendix 54). Furthermore, product and service bundling used as a pricing menu will be applied on the consultancy price when customers choose to order further services and/or products from *EDP Frota Verde*. A discount of 10% on the consultancy service was established for customers who also rent or buy the charging stations (with or without complementing charging services)³⁴. On the other hand, a discount of 5% on the consultancy service was defined for customers who only purchase complementing charging services³⁵ (Appendix 55). To see the combination of prices with both discounts, please consult Appendix 56.

9.3 Place

The design of a valuable marketing channel strategy includes two important phases: an analysis phase and a decision phase (Palmatier, Stern and El-Ansary 2015). The first covers an overview of the current channels and an analysis of the end-user service output demands, whereas the

³¹ For instance, for a floor charger of 22kW, customers will have to pay 2,244€/unit.

³² For instance, for a floor charger of 22kW, customers will have to pay 2,693€/unit.

³³ For instance, for 5 floor chargers of 22kW, customers will pay 22,500€/unit instead of 22,750€/unit.

³⁴ Customers will pay 720€/day for the consultancy instead of 800€/day.

³⁵ Customers will pay 760€/day for the consultancy instead of 800€/day.

second consists of designing the channel structure and closing service and cost gaps (Palmatier, Stern and El-Ansary 2015).

9.3.1 EDP Comercial Distribution Channels

EDPC already has multiple marketing channels in practice. In B2B, EDPC communicates with its clients through (1) online channels such as EDP's website, email and S2C, (2) the sales team that can be internal or external depending on the customer segments, and (3) agents, independent store managers who represent EDP in order to collect energy clients mainly in remote locations where a face-to-face relation is very valued. As for promotion, a mix of online and sales team channels according with the customers' segmentation is used as detailed in section 9.4 Communications Plan. In B2C, EDPC also communicates via an outsourced contact centre supervised by EDP and has a recent service offer called *EDP Mobilidade Eléctrica*³⁶, which already has an established channel with charging stations suppliers and with external service providers for maintenance work. A thorough scheme of the channels previously outlined can be found in Appendix 57.

9.3.2 EDP Frota Verde Distribution Channels Strategy – Channel Design

9.3.2.1 End-User Analysis: Segmentation and Targeting

The important insight for the channel market segmentation is how end users want to buy and use the services being purchased (Coughlan et al. 2006). To do so, an analysis of possible service output demands (SODs) was performed in light of *EDP Frota Verde* and can be found in Appendix 58. The most evident difference is related with the demanded 'customer service' that can be higher or lower depending on the complexity of the clients' request - a more complex request will require a more personal and exhaustive service. Another difference is the structural distinction in the communication channels used by EDPC for large companies and SMEs. Taking this into consideration, the two dimensions previously mentioned were used to segment the market for the purpose of channel analysis and four different segments were identified: Segment 1 - SME,

³⁶ *EDP Mobilidade Eléctrica* is a service offered by EDPC for B2C clients that have PEVs and want to charge them at home. The service includes energy provision, discounts and charging stations (EDP n.d.e).

Complex; Segment 2 – Large company, Complex; Segment 3 – SME, Functional; and Segment 4 – Large company, Functional (Appendix 59). Considering the segments mentioned and the attractiveness assessment performed in section 7.2 Targeting, in the first year, the focus will be on segments 2 and 4. From the following year on, the other segments will be targeted equally.

9.3.2.2 Channel Structure: Positioning

A detailed scheme of *EDP Frota Verde's* channel structure can be seen in Appendix 60.

9.3.2.2.1 Channel Members

There are three upstream channel members: the charging posts' suppliers, the leasing company (PEV supplier) and outsourced external service providers. All three negotiate with EDPC, but deliver the products and services directly to the end-users. EDPC, the “channel steward” and the most interested party in establishing and maintaining the channel links, is the middle channel member (Coughlan, Anderson, Stern, and El-Ansary 2006). To sell and promote *EDP Frota Verde* and exchange information with the end-users, EDPC uses the following communication channels: an online channel that includes the website, email and S2C; an external and an internal sales team depending on the customer's segment. To deliver the consulting services, *EDP Frota Verde* will also comprise another channel to be named expert team that will work closely with both the sales teams and the end-users. The end-users are the downstream channel members of this distribution channel.

9.3.2.2.2 Types of Channel Mix and Intensity

This service offer will be exclusively distributed through EDP's channels. According with the market segmentation performed for the end-users and with their preferences, a mix of channel types was selected to serve each segment. The difference lies in the communication channels and in the type of contact (Appendix 61). Besides the structural differences of the sales team, in the case of a complex request, the sales team goes to the customers, while in the case of a more functional request, the information transaction is conducted remotely.

9.3.2.2.3 Channel Flows

Channel flows are all the activities of the channel that add value to the end-user (Coughlan, Anderson, Stern, and El-Ansary 2006). For a more straightforward analysis, the channel flows were combined in three major flows: (1) the product/service flow, (2) the information and promotion flow and (3) the negotiation and payment flow. Each includes several marketing functions that are analysed in detail in Appendix 62. Regarding the **product/service flow**: the tangible items (physical possession) go straight from the third parties to the end-user, meaning there is no inventory requirement. The same happens with the ownership of the tangible items except for the “renting” service. In this case, the owner is EDP [Suppliers (product manufactures or intermediaries) → End-users (after delivery and installation)]. The consulting service and pre- and post-sale relationship of the sales team with the end-users go straight from EDP to the latter [*EDP Frota Verde*: *EDP Frota Verde* → End-users (service outputs)]. In what concerns the **information and promotion flow**: the communication will be done through the assigned sales team and the appropriate channel mix and there will be constant support between the sales team and the expert team [*EDP Frota Verde* (specific communication channels defined by the communication strategy and according with the market segment) ↔ End-user; Communication Channels ↔ Expert Team]. Finally, the **negotiation flow** involves all concerned parties, even though the suppliers and the end-users never negotiate directly [Suppliers ↔ *EDP Frota Verde* (Communication Channels) ↔ End-user].

9.3.2.3 Channel Analysis/Gap Analysis

9.3.2.3.1 Sources of Channel Gaps

Gaps in channel design can emerge from a poorly designed distribution channel or from limitations imposed on channel managers – bounds (Palmatier, Stern and El-Ansary 2015). There

are managerial bounds³⁷ and environmental bounds³⁸. For *EDP Frota Verde*, since part of the channels is shared with other services, there might be some serious managerial bounds that can create 'customer service', 'waiting and delivery time' and 'information provision' gaps. For example, this channel structure relies a lot on the sales team that is present in all channel flows and is shared among other EDPC services. These sales teams have to prioritize their service promotion and can have an inadequate familiarity with the specificities of this service. As for environmental bounds, the indirect structure of the upstream channel members that deliver the products and services directly to the end-user can also create 'waiting and delivery time' and 'product assortment and variety' gaps. To overcome the identified managerial bounds and the discriminated gaps, a new expert team as well as new members for both sales teams will be hired that will also receive specific training as explained in section 9.7 People. If the gap is not closed, a change in the incentive system is also encouraged. Regarding the suppliers, a tighter supervision and frequent customer satisfaction questionnaires are recommended.

9.3.2.3.2 Service Gaps

Service gaps exist if the service supplied (SS) is higher than the service demanded (SD) ($SS > SD$) or if the SD is higher than the SS ($SS < SD$) (Coughlan et al. 2006; Palmatier, Stern and El-Ansary 2015). On the demand side, gaps mean that the SODs are being under ($SS < SD$) or oversupplied ($SS > SD$) (Coughlan et al. 2006). This analysis can only be correctly done if the channel structure is already in function. However, a hypothetical forecast analysis with possible SOD gaps was conducted in Appendix 63 along with the respective recommendations for closing each gap, as follows. For complex requests (segments 1 and 2), 'waiting and delivery time' and 'product assortment and variety' may be undersupplied ($SS < SD$) due to the longer duration of the process itself and the higher specificity of the

³⁷ Managerial bounds refer to constraints on distribution structure arising from the rules within a company (Palmatier, Stern and El-Ansary 2015).

³⁸ Environmental bounds are, for example, local legal constraints and the sophistication of the physical and retailing infrastructure (Palmatier, Stern and El-Ansary 2015).

customers' needs. If these gaps are identified after the channel structure implementation, the supplier should be changed or the pool of suppliers should be increased to ensure higher variety and availability of charging stations and PEVs. For functional requests (segments 3 and 4), there are already some differences in the communication channel mix to account for this difference between functional and complex, however SS may be higher than SD ($SS > SD$) for 'spatial convenience', 'customer service' and 'information sharing'. In this case, since it is a case of oversupply, it only becomes a problem if there is a higher cost associated which may imply a deeper change in the channel mix for these segments (Coughlan et al. 2006).

9.4 Communications Plan

An integrated and effective communications plan is crucial in order to achieve the intended goals for the launch of *EDP Frota Verde*. This plan defines the target audience and corresponding objectives as well as the media and other means by which the key benefits of the service can be communicated in the most efficient way. In the first year of the campaign, only large companies will be targeted, accompanied by SMEs from the second year on.

9.4.1 Marketing Objectives

The first marketing objective for the launch of *EDP Frota Verde* is to raise awareness of the sub-category of electric mobility solutions for businesses and to create a positive attitude toward it among the target. Furthermore, since *EDP Frota Verde* is a new brand, brand awareness needs to be created. Thirdly, the goal is to generate a market penetration of 2% for large companies and 0.5% for SMEs within the first year after the launch of the service for the respective segment. Due to the new sub-category, the objective-and-task method was used to determine a necessary budget of 318,000€ for the launch campaign, which will be detailed in section 9.4.9 Budget Breakdown and Campaign Schedule (Rossiter and Percy 1997).

9.4.2 Target Audience Selection

In order to create an effective campaign, it is essential to understand and define who the most promising prospects are (Rossiter and Percy 1997). The results from the primary and secondary research have shown that some Portuguese companies have already incorporated PEVs in their fleets or have charging stations. However, these PEVs typically only account for marginal parts of the fleet, and so far, companies do not seem to be loyal when it comes to their fleets. Therefore, the primary target audience for the launch campaign of *EDP Frota Verde* are people in charge for the fleets of their companies that are either New Category Users (NCUs), companies that will enter the sub-category of electric mobility solutions for businesses by acquiring services from *EDP Frota Verde*, or Other-Brand Switchers (OBSs), companies that already have PEVs or charging stations (Rossiter and Percy 1997). Furthermore, due to the decision-making process in companies, there will be a secondary target audience. It is composed of the senior management of the targeted companies, since they can have a significant influence on purchasing decisions. The companies can further be characterized by the ‘firmographic’ factors mentioned in section 7.1 Segmentation.

9.4.3 Target Audience Action Objectives and Behaviour

EDP Frota Verde is a new brand and the sub-category is relatively new in Portugal as well. Therefore, the action objective for the target audience is brand trial and for NCUs also sub-category trial (Rossiter and Percy 1997). Since electric mobility solutions for businesses involve services with a very long purchase cycle, the sales in the first years will be composed almost exclusively of trial purchases (Rossiter and Percy 1997). Thus, the trial goals for the campaign were based on the sales estimations. Considering the market penetration rates of 2% for large companies and 0.5% for SMEs, this results in 60 contracts for large companies and 135 contracts for SMEs in the first year after the launch for the respective segment.

In order to get a better understanding of the target audience’s decision-making process, as well as the corresponding touchpoints and roles different individuals and entities play throughout

the process, and to optimally address these aspects at each stage of the process, a Behavioural Sequence Model was developed, which is displayed in Appendix 64.

9.4.4 Communication Objectives

For a campaign, five different communication objectives need to be considered. The first one is **category need**. Most companies in Portugal are either NCUs or not very experienced yet regarding electric mobility solutions for businesses. This means that there is none or only a weak sub-category need, which makes it essential to ‘sell’ this sub-category need to the target audience (Rossiter and Percy 1997).

The second communication objective, **brand awareness**³⁹, can be defined as either brand recognition, brand recall or brand-recall-boosted brand recognition (Rossiter and Bellman 2005). Since it is desirable that the target audience remembers *EDP Frota Verde* when thinking about electrifying their fleets, creating brand recall is one of the main communication objectives of the campaign.

The third objective is **brand attitude** (Rossiter and Percy 1997). Since *EDP Frota Verde* is a new brand within a new sub-category, the target audience does not have a previous attitude toward the brand, which makes it necessary to create a positive brand attitude in the course of the campaign (Rossiter and Percy 1997). Due to the fact that *EDP Frota Verde* is closely linked to the EDP brand, this also implies transferring the current high awareness of and positive attitude toward the parent brand.

Since the electrification of a fleet is a high-involvement decision that needs an explicit intention for the purchase of a corresponding service, generating **brand purchase intention** is the fourth communication objective of the campaign (Rossiter and Percy 1997).

³⁹ Brand awareness refers to the ability of the buyer to identify a specific brand within a category in enough detail to purchase a product or service from this brand (Rossiter and Percy 1997).

The fifth communication objective that needs to be incorporated for this campaign is **brand purchase facilitation**: *EDP Frota Verde* is a new brand and prospects are not aware of all relevant aspects regarding how to acquire the service (Rossiter and Percy 1997).

9.4.5 Positioning Statements for the Campaign

EDP Frota Verde will be positioned as a differentiated brand, using the product as hero in the communication (Rossiter and Percy 1997). Since the two targeted segments will be addressed differently, two different positioning statements were created. The positioning statement for large companies reads as follows: **To** persons in charge for the fleets of large companies that are open to electrifying their fleets and to senior management of these companies (NCUs, OBSs), *EDP Frota Verde* is a *differentiated* brand of electric mobility solutions for businesses **that offers** the benefits of cost savings (problem removal) and convenience (problem removal), integrated consulting taking into account the electric installations of the building and the corresponding PEVs (problem avoidance) as well as the improvement of the company image (social approval) **because** of electric mobility and the turnkey solution provided by a brand of EDPC, a well-established energy player in Portugal, with a team of experts in electric mobility solutions for businesses. **Advertising should** emphasize cost savings and convenience because of one-stop shopping and electric mobility (a → b) and mention operational leasing of the PEVs as an entry ticket.

The positioning statement for SMEs is: **To** persons in charge for the fleets of SMEs that are open to electrifying their fleets and to senior management of these companies (NCUs, OBSs), *EDP Frota Verde* is a *differentiated* brand of electric mobility solutions for businesses **that offers** the benefits of cost savings (problem removal) and convenience (problem removal) as well as ongoing support during the entire process (problem avoidance) **because** of electric mobility and the service-menu provided by a brand of EDPC, a well-established energy player in Portugal, with dedicated sales people and an expert team for electric mobility solutions for businesses. **Advertising should** emphasize cost savings and convenience because of electric mobility, a

tailor-made service menu and one-stop shopping and the ongoing support and relationship with a dedicated sales person (a → b).

9.4.6 Creative Strategy

When developing the creative strategy for a campaign, the context in which it will take place needs to be addressed (Rossiter and Bellman 2005). Portuguese companies are generally open toward electric mobility, but still hesitant to electrifying large parts of their fleets because of concerns regarding factors such as the autonomy of EVs. Furthermore, an essential component of the creative strategy is the creative idea, which forms the basis for the creation of advertising materials (Rossiter and Bellman 2005). For the launch of *EDP Frota Verde*, this idea is slightly different for large companies and SMEs, taking into account the different positioning. For large companies, the creative work should emphasize the uniqueness of the service and highlight the convenience due to the turnkey solution and one-stop shopping as well as the high quality of the service and the suppliers. *EDP Frota Verde* should be linked to a superior and trustful service for fleet electrification, allowing cost savings and improvement of the company image. For SMEs, the creative work should emphasize the uniqueness of the service by highlighting the convenience due to the tailor-made service menu and one-stop shopping, the high quality of the service and suppliers as well as the ongoing support and relationship with a dedicated sales person. *EDP Frota Verde* should be linked to a superior and trustful service for fleet electrification, allowing cost savings.

In order to create the necessary brand recall, the sub-category need and the brand name should be associated in the main copy line or visually, by mentioning or displaying the sub-category need first, followed by the brand name (Rossiter and Bellman 2005). Therefore, the slogan “*Eletrifique a sua Frota com EDP Frota Verde*” was created. To support brand recall, this association should then be repeated and a recallable brand name associated to the sub-category was chosen with *EDP Frota Verde* (Rossiter and Bellman 2005).

Since *EDP Frota Verde* is a brand placed in a high-involvement – informational environment, the message must be introduced reflecting the initial attitude of the target audience, which is still hesitant to electrify large parts of the fleets (Percy and Elliott 2016; Rossiter and Bellman 2005). Thus, the general message communicated should be reassuring and show how the advantages of the services provided by *EDP Frota Verde* will help to overcome the perceived obstacles regarding electric mobility solutions for businesses (Rossiter and Bellman 2005). The target audience must believe the key point of the advertisements and it is important to pitch the benefit claims at an acceptable upper level and to not over or underclaim the portrayed benefits (Percy and Elliott 2016). The message should emphasize the key benefit of convenience, followed by up to seven other benefits according to their importance for the target audience⁴⁰; however, for direct response ads, a unique, important benefit like the ongoing relationship with a dedicated sales person should be used in the end (Rossiter and Bellman 2005). Furthermore, in order to increase credibility and to be more persuasive, success cases will be incorporated in the communication. As a summary of the creative strategy, a creative brief was created, which is presented in Appendix 65.

9.4.7 Integrated Communications Strategy

An integrated marketing communications strategy is crucial for designing an effective communications plan. In B2B advertising it is very likely that there are different important groups of decision makers, as is the case for the services provided by *EDP Frota Verde* (Percy and Elliott 2016). Consequently, persons in charge for the fleets of their companies as well as senior management in these companies need to be reached effectively with the launch campaign, which requires very different media and contact points. Therefore, the campaign relies on a mix of advertising, personal selling, presentations and stands at conferences and other events, as well as events for senior managers of these companies.

⁴⁰ For instance, cost savings, integrated consulting services, and improvement of the company's image.

Personal (direct) selling plays a crucial role due to the B2B nature of the project, the corresponding decision-making processes as well as the complexity of the service, which requires a large amount of information and support during the decision-making process, including education on the sub-category (Zoltners, Sinha, and Lorimer 2004; Rossiter and Bellman 2005). Large companies are served by internal dedicated account managers, called internal key account managers by EDPC, whereas SMEs will be served by external dedicated account managers. The sales people are responsible for acquiring new customers, but also for supporting prospects and customers throughout the whole process and after the purchase has occurred. A detailed description of the sales force activities can be found in Appendix 66. Furthermore, conferences and other events related to fleet management and electric mobility provide an excellent opportunity to reach fleet managers and thereby create awareness of the sub-category and the brand and generate a favourable attitude. This includes stands at these events, but also talks and presentations at conferences in which *EDP Frota Verde* experts can speak about the services offered by the brand, but also about related topics to create a reputation as experts in the area. Furthermore, several events will be organized in order to reach the senior management of companies with high potential. These events include workshops and breakfasts for large companies as well as seminars for SMEs. The workshops are attended by senior managers of approximately 30 to 50 clients who are satisfied with EDPC's services and serve to present new services and show success cases. For the breakfasts, *EDP Frota Verde* invites 10 directors and administrators in charge of relevant areas. They start with a short presentation about a relevant topic related to the category, followed by an exchange of views about the subject. The seminars for SMEs are designed for 200 to 300 people, including senior management, and start with a subject that connects and is relevant for all companies such as technology or digitalization, followed by talks about energy and services offered by EDPC.

In addition, advertising will be used to generate sub-category and brand awareness among the target audience, including display ads on the websites of relevant fleet management magazines and on LinkedIn, targeted at fleet managers, and print ads in the respective magazines. Furthermore, paid search will be used to lead people to the *EDP Frota Verde* webpage and newsletters and email marketing serve the purpose to further advertise and promote the service at appropriate points in time. Moreover, branded content will be used to create awareness and a favourable brand attitude, for instance via articles in relevant magazines or on LinkedIn.

9.4.8 Media Strategy

The media strategy needs to be aligned with the objectives stated throughout the communications plan. Since recall brand awareness is one of the main communication objectives for the campaign, high frequency is necessary to build the required association of the sub-category and the brand (Percy and Elliott 2016). Furthermore, *EDP Frota Verde* is placed in a high-involvement informational environment and brand choice is mainly based on negatively oriented motivations, which makes it necessary to select media that enables enough time to process the message (Percy and Elliott 2016). According to Percy and Elliott (2016), the internet is a medium that fits both criteria. Additionally, magazines, and owned media like brochures and direct mail are excellent media for messages that require a long time to process and are therefore, together with the webpage, selected as the primary media⁴¹ for the campaign (Percy and Elliott 2016). As secondary media, paid media such as display ads on relevant websites, and paid search to lead prospects to the website and to increase brand exposure whenever a user is interested in the sub-category, are used to increase frequency and thereby boost recall brand awareness.

The webpage for *EDP Frota Verde* is an owned medium and will be used to display information, to educate the target audience on the sub-category, the brand and the product and services offering, and to convince prospects to get in touch with the sales team. For this purpose,

⁴¹ Media that enable the delivery of all communication objectives for the campaign (Rossiter and Bellman 2005).

educational and informational content such as videos and descriptions of the offering will be displayed. In order to be more convincing and authentic, the webpage is also used to show success cases. In addition, a call-to-action is included in prominent places to lead the prospects to S2C (where they can download a proposal for the consultancy services), to fill in a contact form in order to be called by the *EDP Frota Verde* sales team, or to call directly.

Furthermore, print ads in fleet management magazines such as *Fleet Magazine* serve the purpose of raising awareness of the sub-category and the brand and to make the target audience look for more information. These ads can be up to two pages long, which makes it possible to include an extensive amount of information and a call-to-action to visit the website or call EDP in order to get more information on the offering. The same is true for brochures, which are distributed at conferences, workshops, and seminars.

Moreover, newsletters and email marketing are used at appropriate points of the campaign. Four times a year, EDPC sends out newsletters. For large companies, the focus is on success cases – therefore, as soon as they are available, success cases for *EDP Frota Verde* are included in order to raise interest for the sub-category and the brand. For SMEs, the objective is to present new services in general. This structure should be kept for *EDP Frota Verde*, but it is essential to include a call-to-action leading to the website or a call. In addition to the newsletters, email marketing is selectively used as a teaser, to ‘sell’ the sub-category need, generate awareness and a favourable brand attitude, and to lead to the website, S2C or a call, depending on the stage of the campaign. For these emails, it is important to find the right contact person and to tailor the information accordingly.

To support recall brand awareness, display ads are used in order to increase frequency and to raise awareness of the sub-category and the brand, associating both in the main copy line. They are placed on websites of magazines related to fleet management or on LinkedIn, targeted at people with a current position in fleet management.

9.4.9 Budget Break Down and Campaign Schedule

The budget for the campaign was set using the objective-and-task method (Rossiter and Percy 1997; Avery and Teixeira 2016). Of the 318,000€ for the 2-years launch campaign, 99,000€ are attributed to 2018, 150,000€ to 2019, and 69,000€ to 2020. 25% are allocated to primary media, 2% to secondary media, and 9% to content creation. As elaborated above, personal contact is very important for *EDP Frota Verde's* service. Therefore, 64% of the campaign budget are allocated to events for senior management and conferences (Appendix 67). Furthermore, sales people are an important cost factor in the overall marketing budget and are accounted for in section 11 Profit and Loss Statement. In the same section, the marketing budget for the years after the launch campaign is displayed (Appendix 86).

The launch campaign of *EDP Frota Verde* is split in two cycles. In the first year, only large companies are targeted. In the second year, the launch campaign for SMEs starts, accompanied by a phasing out of the launch campaign for large companies. However, some communication channels and media used are the same for both targets, which is why they are present in both phases of the campaign. Both cycles start in July, taking into account that typically, budget allocations for the following year are defined in the end of the year. Therefore, the goal is to generate high frequency during the launch for the corresponding target in order to create awareness, followed by continuously staying on their minds to create the link between the sub-category and *EDP Frota Verde* so that they will think of the brand when planning to electrify their fleets and include the costs in the budget – or even only get this idea due to the campaign. The detailed campaign schedule can be seen in Appendix 68.

9.4.10 Campaign Tracking

Tracking and evaluation of a campaign are important to ensure that all communication activities contribute to achieving the intended goals of the campaign and to make appropriate adjustments, if necessary (Rossiter and Percy 1997). For this purpose, key performance indicators (KPIs) need

to be defined and measured before, during, and after the campaign (Percy and Elliott 2016). One of the most important KPIs for the launch campaign of *EDP Frota Verde* are the sales generated due to the effects of the campaign. Furthermore, the achievement of the penetration rates defined in section 9.4.1 Marketing Objectives need to be followed up on. In addition, levels of (recall) brand awareness need to be measured. Other KPIs serve to measure the direct response of prospects to the campaign: the number of calls, the number of people that fill in the contact form on the webpage, and the number of companies that download a proposal from S2C. Furthermore, measuring conversion rates is valuable to analyse the effectiveness of different stages, such as click-through rates for paid search and display ads, the ratio of users that visit the webpage and then download a proposal on S2C, and the number of companies that are interested in more information and sign up for the service in the end. Further measures are traffic on the website and the number of leads generated by the presence at conferences and other events, at workshops, breakfasts, and seminars, as well as how many of these companies request services.

9.5 Process

The design of a service's process is vital so that a promised value proposition can be delivered with excellence and the customers may have the experience they were looking for (Wirtz and Lovelock 2016). If poorly designed, service processes can generate ineffective service delivery and lead to unsatisfied customers as well as damage frontline employees' productivity and cause failures (Wirtz and Lovelock 2016). In order to design *EDP Frota Verde's* processes, both a flowchart and a blueprint were developed.

9.5.1 *EDP Frota Verde* Flowchart

A flowchart is a tool used to describe the steps completed by a customer when using a certain service, providing a full overview of the total service experience (Wirtz and Lovelock 2016). Although *EDP Frota Verde* addresses two different target segments, only one flowchart was developed. The steps that each target will need to follow are similar, the main difference being

the sales people responsible for each one. The process may start with the prospect's interest that can be showed by filling in a contact form on *EDP Frota Verde's* webpage, on the S2C platform or by calling EDP's call center. Afterwards, the prospect will receive a call from a sales person (internal key account managers for large companies and external dedicated account managers for SMEs) in order to clarify the prospect's questions and for the sales team to qualify them. This step may also work as an entry point, meaning that the process may also start here, as the sales team also performs cold calling. In this case, they would present *EDP Frota Verde* to current and potential customers. If still interested, the prospect will receive more information (via email or meeting). Afterwards, the prospect will receive a call from the responsible sales person to check further interest. If interested, the prospect should provide additional detailed information about the company's fleet and needs (by call or email). Moreover, if logging in to S2C, the previous steps can be eliminated (works as a third entry point) because the prospect may feel it has all the necessary information about *EDP Frota Verde* and automatically fills in the detailed questionnaire (Appendix 69) so that the proposal may be created. As soon as all the information is collected, the expert team will be able to analyze it and elaborate the consultancy proposal. After receiving the proposal (via email or S2C), the terms can be negotiated between the customer and the respective sales person. The following step is the signature of the contract, followed by the consultancy service that consists on the expert team going to the customer's premises. Afterwards, the customer receives the detailed consultancy report stating the optimal mobility solution, after which the bill is received and paid (if only consultancy). The customer analyses the report and the terms can be negotiated again. When all details are settled, a modified contract is signed (if needed) and the customer receives the products (either the installation of the chargers and/or PEVs from *EDP Frota Verde's* suppliers) and/or the agreed services. The bill is received and paid in total or in monthly installments. If a contract breach occurs for products, the customer will have to pay a respective sanction and can choose to buy the chargers. For the complementing services,

no sanction is applied. When the contract ends, either for the complementing services or the renting of chargers, the customer is contacted by its respective sales person in order to infer if the contract will be renewed or not. Depending on the decision, several situations may occur as detailed in Appendix 70.

9.5.2 *EDP Frota Verde* Blueprint and Main Attributes

A service blueprint is a more complex tool and should provide all details of the customers' experience including all visible (front-stage) and invisible (back-stage) steps for them, including possible fail points and steps in which the customers may wait an excessive time (Wirtz and Lovelock 2016). Once again, only one blueprint that covers both targets, with the previously mentioned differences regarding the sales team, was designed (Appendix 71). Moreover, while designing *EDP Frota Verde*'s offering, two attribute maps were created, one for large companies and another for SMEs, in order to compare how *EDP Frota Verde* and its competitors perform on the attributes most valued by customers (Tybout and Calder 2010). As there is not a true competition for *EDP Frota Verde*, in some dimensions, it was compared with competitors that offer separated services (like PEVs or chargers). For both targets, *EDP Frota Verde* excels in convenience (due to the one-stop shopping) and cost savings. For large companies, it is important to have a turnkey solution and for SMEs the unbundled services are vital. *EDP Frota Verde* underperforms in the fast acquisition process dimension, which is the least valued by both targets (see Appendix 72 to see all attributes of *EDP Frota Verde*).

9.6 Physical Evidence

EDP Frota Verde is a quality service that is tailor-made to the customers' needs and requirements. This must be reflected in the equipment provided, in the deliverables, in the service environment and in the chosen partners (Wirtz and Lovelock 2016).

As tangible evidence, *EDP Frota Verde* has the following features: the wide range and quality of the provided charging posts; the quality of the PEVs available for operational leasing

through a partnership with a market leader; the consultancy report delivered with a professional outlook and design, printed in high quality materials, with relevant content and written by experts in electric mobility and the promotion materials, such as brochures, presentations and *EDP Frota Verde's* stand, that will also be of high quality and with a superior design (Appendix 73).

The intangible evidence will include both the online channels and the service environment. Considering the first, the website will have an area dedicated to *EDP Frota Verde* that can be accessed under the tabs “Empresas” and “Corporate” in the services area (“*Serviços*”) (Appendix 74). This area will include relevant information such as an exact description of the service and the possible solutions offered, how to acquire, success cases, advantages of the services, savings comparisons, downloadable materials and a video that summarizes all the mentioned information. Moreover, this offer will also be included in EDP’s S2C platform (Appendix 75). As for the second, service environment, it is very important that both the sales and the expert team are fluent, articulated and approachable as well as trained and completely informed. Furthermore, the employees should always present themselves professionally, complying with a formal dress code.

9.7 People

People are crucial in determining the success of a service business which involves all service players, including customers (Wirtz and Lovelock 2016). For *EDP Frota Verde*, there is a process of co-creation with its customers who have a moderate level of participation in the services’ process because they can be the ones initiating it and are the ones providing all necessary information so that *EDP Frota Verde's* team can create an optimal customized outcome. Moreover, customers need to be set up not to fail and for that, the sales team plays a crucial role helping them providing vital information (Frei and Morriss 2012). Employees' quality can truly dictate if customers are properly served or not, thus constituting a source of loyal customers and a competitive advantage (Wirtz and Lovelock 2016). As per the service personnel, it is crucial to also set them up for success and for

that the three steps of the Service Talent Cycle should be respected: hire the right people, enable your people and motivate and energize your people (Wirtz and Lovelock 2016).

9.7.1 Hire the Right People

Due to the high level of expertise required, a new team, designated as expert team, needs to be created for *EDP Frota Verde*. The ideal profile for these employees would be someone with an engineering background, previous working experience in a leasing company (or similar) that deals with PEVs, additional working experience with charging stations and/or knowledge about the electric mobility market as a whole. This team will be working in EDPC's services department for the B2B market, and will be responsible for analyzing customers' needs, creating a tool in collaboration with the R&D department in order to elaborate the most appropriate consultancy report for the customers, deliver the service and providing specific training to the sales team. For 2018, three employees will be hired and two more will join the team in 2019. Moreover, due to the continuous growth of the projects, two other experts will join the team in 2024, summing a total of seven experts by then. This team will be supervised by a team leader that will be a current employee of EDP with expertise in the B2B market and a consultancy background. The main functions of the team leader will focus on supervising and assisting the expert team's job and on decision making processes.

Besides the creation of this new team, two additional internal key account managers (KAM) will be recruited and added to the existent 12 (responsible for large companies) in the B2B Sales Department (one for the North and one for the South). Furthermore, one more KAM will be recruited in 2023 and another one in 2027, summing a total of four additional KAMs. The KAMs will keep their function of acquiring new customers and supporting current ones regarding electricity and gas, but also in what specifically concerns *EDP Frota Verde*. Moreover, for SMEs (only on the second year - 2019), two external dedicated account managers will be recruited to join the current team of 19 employees (responsible for SMEs) and afterwards, an additional one

will be hired every year until 2023. The same will happen after 2024. In 2028, this team will have nine additional employees (Appendices 76 & 77). The external managers will have the same job content as the KAMs. Furthermore, high quality suppliers will be subcontracted to provide the chargers and the PEVs. Moreover, the current outsourced call center used by EDP will also be working with *EDP Frota Verde* in order to fill in a customer contact form so that they can then be contacted by a specific sales person.

9.7.2 Enable Your People

When managing employees, one of the most crucial activities to keep them up to the challenge is to provide them continuous training (Wirtz and Lovelock 2016). Training helps employees achieving higher performance levels as well as accomplishing their task of providing an excellent service to customers (Wirtz and Lovelock 2016). This being said, all *EDP Frota Verde* employees (except the outsourced ones) should complete 35 hours per year as a mandatory training requisite. The training should include certain specific topics such as: EDP's organizational culture, purpose and strategy and interpersonal and technical skills. Furthermore, as *EDP Frota Verde* requires a high level of expertise and a whole new knowledge related to electric mobility, training should be provided by the expert team to both internal KAMs and the external dedicated account managers. Detailed information about the service should be provided during a one-day session, twice a year.

9.7.3 Motivate and Energize your People

Motivation is an indispensable tool to retain and to keep employees satisfied and a wide range of non-monetary and monetary rewards can be used in order to do so (Wirtz and Lovelock 2016). Feedback and recognition should be given by a team leader on a regular basis so that employees feel supported and constantly improve the activities performed. Moreover, their job content should be designed in a satisfying way so that employees can feel that their job is meaningful and can truly have an impact on customers' lives. Furthermore, incentive systems based on performance can be provided. For the expert team and the internal KAMs, yearly performance bonuses (corresponding

to half of their salary) will be given starting six months after their hiring. In what regards the external dedicated account managers and the call center, as it concerns outsourced employees, the incentive system (if existent) should be designed and delivered by the corresponding companies.

10. Key Success Factors

Key success factors are the set of factors, that all companies should have, which are critical for the success in a business (Sousa n.d.). The first competence, which is required to stay competitive in the electric mobility solutions sub-category, is a good **brand reputation**, assuring the brands' bargaining power with manufacturers and/or suppliers, as well as creating a good brand image. Furthermore, **sub-category acceptance** is also necessary since companies need to be open to the new technologies and to be educated in what regards electric mobility solutions for businesses. In addition, **service experience and an adequate high-quality product and service offering**, as well as an excellent **distribution channel**, are critical for the future success of the business.

11. Profit and Loss Statement

A Profit and Loss Statement (P&L), also known as Income Statement, sums up the revenues, costs and expenses of a project when they are incurred and not when the money is exchanged - accrual accounting (Investopedia n.d.b). The outcomes of *EDP Frota Verde*, according to the marketing mix decisions previously stated, were projected for the next 10 years in Appendix 78. The assumptions made and the final results are presented in the following sections.

11.1 Main Assumptions

The assumptions made are supported by information provided by EDPC, the company's 2016 annual report and other primary and secondary data collected. The main variation arises from the structural and needs differences between large companies and SMEs and the distinct *EDP Frota Verde* service offers.

11.1.1 Revenues

The revenues item was divided in large companies and SMEs. For each, the income from new contracts and renewals, contract breaches and additional energy sales was computed. To facilitate the calculations, company profiles were created as detailed in Appendix 79 for large companies (medium and complex profile) and SMEs (simple, medium and complex profile). Besides, due to differences between these two segments, it was also assumed a different acceptance of the services offered as detailed in Table 12.

New Contracts	
Large Companies	SMEs
Consultancy	
40% Medium 60% Complex	20% Simple 75% Medium 5% Complex
Out of which: 10% take no further action	
Charging Stations	
10.5% Buy 19.5% Buy + additional charging services contract (4 years) 70% Renting (4 years)	25% Buy 25% Buy + additional charging services contract (4 years) 50% Renting (4 years)

Table 12 - Assumptions regarding new contracts

Taking into consideration the assumptions discriminated above, the company profiles and the pricing defined in the marketing mix, the revenues from sales and new contracts were computed (Appendices 80 & 81). For the first year after the launch (starting in July 2018), the market penetration considered was 2% of the large companies and 0.5% of the SMEs (starting in July 2019) for a total of 60 large companies and 135 SMEs from a market of 3,000 large companies and 27,000 SMEs⁴². The growth of sales to large companies was expected to be 7% for the first 3 years, then 5% for 2 years and expected to stabilize at 2%. For SMEs, the growth rate is expected to be 15% in the first 3 years, 10% for the next 2 years and to then stabilize at 5%. Regarding contract renewals, another set of assumptions was defined: after 4 years, for a complementary services contract, 70% of both large companies and SMEs are expected to renew the contract. Regarding the renting solution, 3% of large companies (vs. 10% of SMEs) are expected to buy the

⁴² Based on the criteria defined for the segmentation, market data and data provided by EDPC.

charging posts at a lower price than market value, 7% (vs. 10%) are expected to not only buy the stations but also request the additional complementing services, 20% (vs. 30%) are expected to keep the same charging posts but pay a lower monthly rent, the majority, 65% (vs. 45%) are expected to request the upgrade of the charging posts to a more recent model and keep paying the same rent and 5% are expected to quit and do not renew the contract (Appendices 82 & 83). Another item considered in the revenues, is “Contract Breaches” that accounts for breaches in the complementary charging services contract and in the renting contract. The assumptions made were a churn rate of 5% and that the breach can only happen in the middle of the contract (after 2 years). In the case of breaching a complementing services contract in the first 4 years, the customer has to pay a fee that covers the remaining consultancy payment. In the case of a renting contract, besides covering the outstanding consultancy payment, the customer has two options: the first is to buy the charging stations for their remaining value plus a small additional fee and the second is to pay a fee that accounts for the charging stations' value still not depreciated – the purpose is that most companies choose the option “buy”, which was assumed to happen in 80% of the cases. All the values for the different renewal alternatives, breach fees and prices of the charging stations can be reviewed in section 9.2 Price.

Finally, the item “Additional energy sales” was also added to the revenues. To calculate these values, a value of 80% was assumed in the first two years for the ratio of customers that have EDP as an energy supplier. This percentage decreases to 60% in the following years. For each additional PEV considered in the company profiles, an average of 100km per working day was assumed, which in the liberalized market corresponds to an average price of 1.33€ for BTE and MT clients⁴³ (Appendix 84).

⁴³ For this calculation, Renault ZOE was the BEV considered with a battery of 41kW and autonomy of 300km. The energy prices considered are the ones stated in ERSE for the regulated market with a margin of 2.6% according to EDPC. To travel 300km, a Renault ZOE owner pays 3,99€. (ZEEV n.d.b; ERSE 2017b; EDU SU 2017a&b).

11.1.2 Cost of Goods Sold (COGS)

The COGS were calculated from market benchmarks together with information provided by EDPC. For charging stations, the COGS were only calculated for the companies buying the charging posts. Considering the different charging stations in the product offer, it was assumed that the majority of companies will choose a 22kW charger while the rest will prefer the cheaper 11kW chargers. After doing a weighted average of these posts' costs according with the presumed preferences, the installation and transportation costs were also included for a total cost of 3,449€ per charger. Therefore, for a large company (medium profile, with 12 charging posts), the COGS add up to 41,388€. The COGS are fully included in the P&L in the first year in which the chargers are bought. For the complementary charging services, there is an annual cost of 560€ per charger, computed for the duration of both the services and renting contracts. For the consultancy service, a cost of 50€ was assumed for the transportation of the expert per day and it is included in the first year of each contract (Appendix 85). The costs are further discussed in section 9.2 Price. For the renting solution, since the ownership of the chargers is not transferred to the end-user, the expenses were accounted differently as explained in section 11.1.4 Depreciation Expenses.

11.1.3 Operating Expenses

Operating expenses are commonly referred to as selling, general and administrative expenses and include sales, marketing and compensation-related expenditures (Investopedia n.d.b.).

The item 'Marketing costs', translates the marketing objectives, the IMC plan, and the respective budget set in section 9.4 Communications Plan. The expenditures cover the selected media and events cost per year as defined in the timeline in Appendices 51 or 52 and the respective cost of content creation including material design, brochures, and stands used for conferences and events, accounting for 27,950€ in the first year and decreasing to 20,000€ every 2 years, for a total marketing expenditure of 98,968€ in the first year (Appendix 86).

The item 'Operating Expenses' (Appendix 87), was computed according with the sales force calculations (Appendix 76) and section 9.7 People. For the new expert team of 3 people hired in the first year, a monthly salary of 3,500€ and 4,500€ for the experts' team leader, was assumed. Two additional KAMs are also hired with an expected salary of 2,500€. In the second year, a 2-people addition to the experts' team, to the internal sales team and to the external sales team (with a salary of 1,260€) was forecasted. In addition to the salaries, a 23,75% social security tax⁴⁴ and a salary-based insurance assumed to be 1%⁴⁵ of the total value were added. Concerning the food allowance, a daily value of 7.23€ offered in tickets⁴⁶ per working day per person was computed plus the additional fee for the tickets' usage of 0.4%⁴⁷. Furthermore, the training expenses were also calculated and account for an annual value of 525€ per person (EDP n.d.i).

11.1.4 Depreciation Expenses

Regarding the charging stations purchased by *EDP Frota Verde* for the renting solution, in order to match the accounting period when they are *used* (4 years) instead of the period when they are *paid* for, their cost will be accounted as a depreciation expense (1/4 of the total cost) for a period of 4 years, equivalent to an annual value of 862.25€ per charger. At the end of the 4-year period, the charger will have no economic value for *EDP Frota Verde* (Appendix 88).

11.1.5 CAPEX

Capital expenditures (CAPEX) represent cash flows used to undertake new projects of investments by firms (Investopedia n.d.b). Since the charging stations used for the renting solution can be considered equipment for this service, their cost was accounted as CAPEX. Thus, the item 'Equipment' reports all new chargers bought each year by *EDP Frota Verde* as new renting contracts are signed. Moreover, in the first year, 150,000€ for development costs such as for the

⁴⁴ Social Security tax for companies (Segurança Social 2017).

⁴⁵ Average of company's insurance to employees (Saldo Positivo 2014).

⁴⁶ Maximum level tickets of food allowance not taxable (Ordem dos Contabilistas Certificados 2016).

⁴⁷ Fee paid to the company Ticket Serviços (Ticket Serviços n.d.).

consulting tool and the changes to S2C and 160,000€ for GPS devices and software to be used in the consulting services were also considered (Appendix 89).

11.1.6 Other Assumptions

The corporate tax rate applied was 21% plus *derrama*, a city tax of 1.5%⁴⁸. For evaluating the potential investment in *EDP Frota Verde*, a capital budgeting analysis was performed for which a 6.4% discount rate was assumed according to EDPC. Furthermore, since EDP has enough financial resources to fund this project on equity without raising debt, interest expenses were not considered in the P&L.

11.2 Results

Taking into consideration all assumptions previously stated together with the requirements of the service mix, a P&L was put together followed by a capital budgeting analysis. The output can be consulted in Appendix 90 together with this section. The gross revenue (Revenues – COGS) is positive for the totality of the project, amounting to 185,665€ in 2018 and reaching 18,529,799€ in 10 years. For the first year, the gross margin is 13%, reaching 32% in 2024 from when on it stabilizes. So, the revenues are always higher than the COGS as the bigger portion of COGS accounted only includes the chargers that were bought upfront. The revenues are expected to be 57,059,395€ in 2028 from 117 new contracts with large companies and 373 with SMEs as well as from previous contracts, renewals and breaches. As for the operating cash flow that sums cash inflows and outflows related with the activity, it starts with a negative value of – 76,213€ in the first year, but soon turns positive and achieves a value of 17,652,062€ in 2028. In the capital budgeting analysis, CAPEX from buying the chargers for renting is taken into account and the net income or free cash flow (FCF) has a negative value of –1,555,424€ that remains negative until 2023 when it turns to 979,073€ and accrues 6,780,430€ in 2028. After discounting the FCFs using the discount rate mentioned above, the investment has an estimated NPV of 5,568,709€ and an

⁴⁸ Ofício Circulado N° 20186/2016 (Direção de Serviços do IRC 2016).

IRR of 15%, which means a good investment opportunity. Also, to get a better understanding of the potential returns by 2020 despite the large CAPEX, an analysis of the prospective project's cash inflows from the remaining renting contracts as of that year that still have 1, 2 and 3 years of annual payments were accounted for in the item 'Liquid Assets Value' displayed in Appendix 91. In this analysis, the NPV increases to 11,621,354€ and the IRR to 20%.

12. Control Measures: Key Performance Indicators

KPIs measure and control company performance. They need to be aligned with strategic goals and are unique to each company and strategy, allowing companies to compare their performance with competitors. Several KPIs were selected in order to measure *EDP Frota Verde's* performance during its implementation and development.

Regarding financial performance indicators, it is important to control the profitability of *EDP Frota Verde* through the **gross profit margin**. Furthermore, **revenue growth** is also essential to track the success for each segment. As *EDP Frota Verde* will have a big CAPEX in the beginning of each product and service lifecycle, it is crucial to understand the annual cost evolution to control if the final price of each solution is adequate. Moreover, EDP wants to increase its **market share** in the B2B segment. Thus, it is important to track this measure in order to understand if *EDP Frota Verde* is contributing to accomplishing this goal. In what concerns customers performance metrics, it is essential to evaluate customers' behavior regarding *EDP Frota Verde*. One way to measure **Customer Satisfaction and Retention (CSR)** is to track **contract renewals** in order to register how many customers are continuing with *EDP Frota Verde*. Furthermore, the **Sales Teams' response** will be evaluated internally to determine how these teams are dealing with and solving customers' problems. Since they will be divided by region, it will be important to follow which region is facing more or less problems with *EDP Frota Verde's* implementation.

13. Contingency Plan

A contingency plan was defined for *EDP Frota Verde* in case unanticipated situations that could threaten the business' success occur. Thus, several possible events were predicted to understand the consequences on *EDP Frota Verde's* development and to create an appropriate reaction.

Possible Events	Possible Impact	Action Plan
Low revenues growth	• Market share decreases • Market penetration is not achieved • Gross profit margin can become negative	Analyse the market to understand the cause for the negative results and to identify which part of the offering and/or external factors have a negative impact on <i>EDP Frota Verde's</i> offering. Increase marketing efforts and understand how the service can be improved.
Low customer satisfaction and retention (CSR)	• Increase in the number of contract breaches • Decrease in the number of contract renewals • Damaged brand reputation	Improve customer service by reviewing the current sales teams' performance and changing the incentives if needed. Perform customer satisfaction surveys and understand how to better achieve customers' expectations.
Service (including PEVs) is not embraced by the B2B segment	• Low number of customers • Low sales volume • Low profit margins	Understand what is failing by performing surveys to current and potential customers and focus groups. Readjust the offering according to the results and find new communication ways in order to emphasize even more the offering's most valued benefits.
No adequate leasing company can be found as a supplier	• Changes in the offering	Adjust the offering to only provide charging solutions and consultancy services. No PEVS would be offered.

Table 13 - Contingency plan

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APPENDIX

Appendix 1 – Today's Powertrain Portfolio

Today's powertrain portfolio

Defined as EV in this report ✓ Primary ✓ Secondary

... To a portfolio of powertrains				Propulsion		Energy generation/source		
				ICE	E-motor	ICE ¹	Plug-in ²	Fuel Cell ³
From one technology...  Internal combustion engine	ICE  Volkswagen Golf	Internal Combustion Engine	Driving with conventional combustion engine only	✓		✓		
	HEV  Toyota Prius	Hybrid Electric Vehicle	Driving with combustion engine and/or e-motor	✓	✓	✓		
	PHEV  Mitsubishi Outlander PHEV	Plug-in Hybrid Electric Vehicle	Driving with combustion engine and/or e-motor, plug-in to recharge battery		✓ ⁴	✓	✓	
	REEV  BMW i3 with range extender	Range Extended Electric Vehicle	Driving with e-motor only, ICE & plug in (or fuel cell) used to recharge battery		✓	✓	✓	✓ Currently in pilots
	BEV  Nissan LEAF	Battery Electric Vehicle	Driving with e-motor only and storing energy in battery		✓		✓	
	FCEV  Hyundai ix35 fuel cell	Fuel Cell Electric Vehicle	Driving with e-motor only and storing energy in hydrogen		✓		✓	✓

¹ In HEV, PHEV and REEV, energy is also generated through regenerative braking

² To charge battery

³ Usually generates electricity that directly powers drivetrain; alternative concepts in discussion (e.g. fuel cell as range extender or FCEV with plug-in)

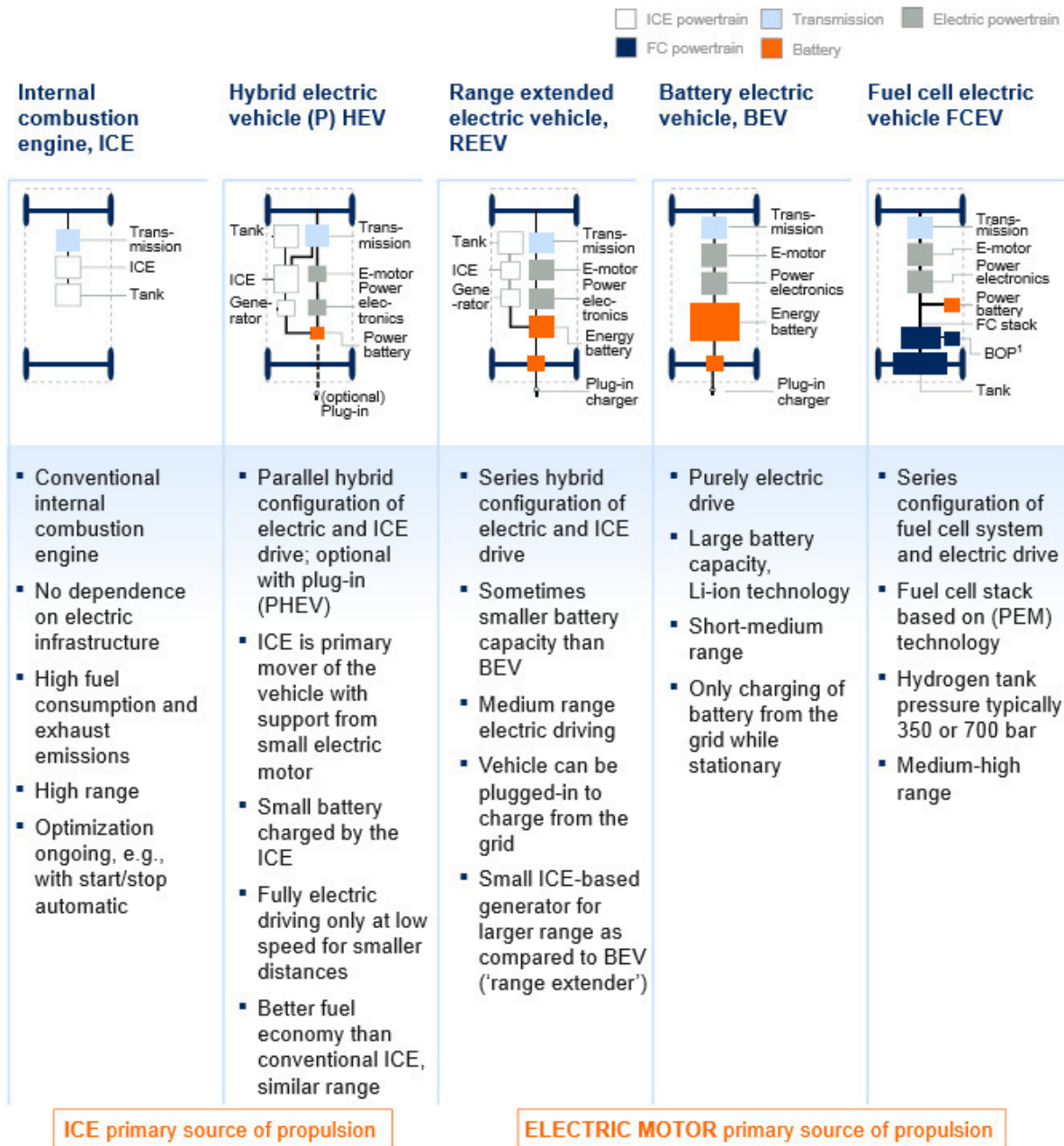
⁴ Primacy of ICE or E-motor in PHEV varies across models

SOURCE: McKinsey

Source: ARF and McKinsey (2014)

Appendix 2 – Different Powertrain Technologies in Detail

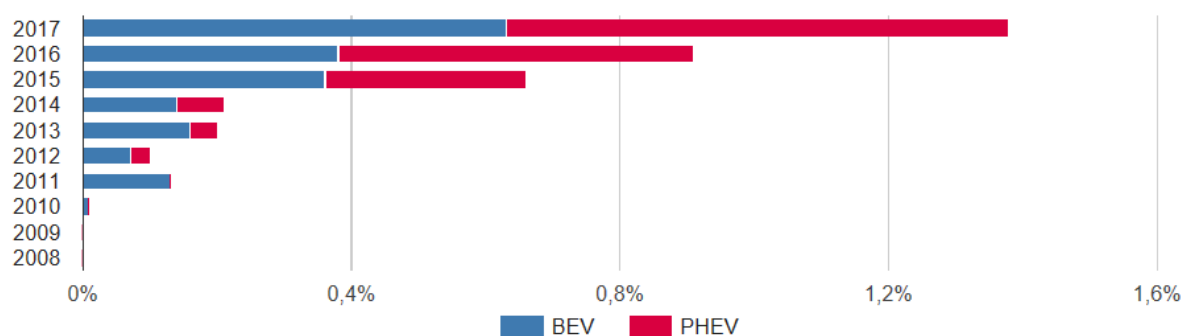
Different powertrain technologies in detail



¹ Balance of plant-various required support components (eg. humidifier, pumps, valves, compressor)

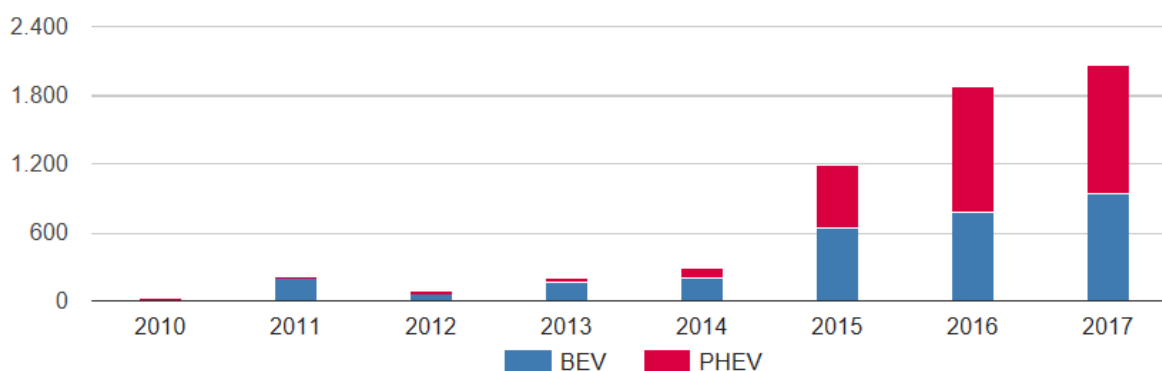
Source: ARF and McKinsey (2014)

Appendix 3 – BEV and PHEV Market Share in Portugal (New Registrations)



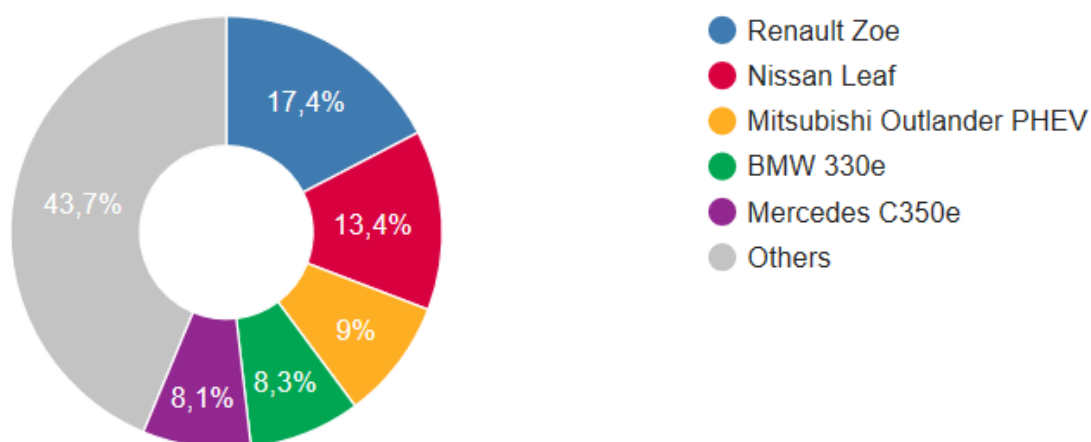
Source: EAFO (n.d.)

Appendix 4 – BEV and PHEV New Registrations in Portugal



Source: EAFO (n.d.)

Appendix 5 – Top 5 Bestselling EV Models in Portugal



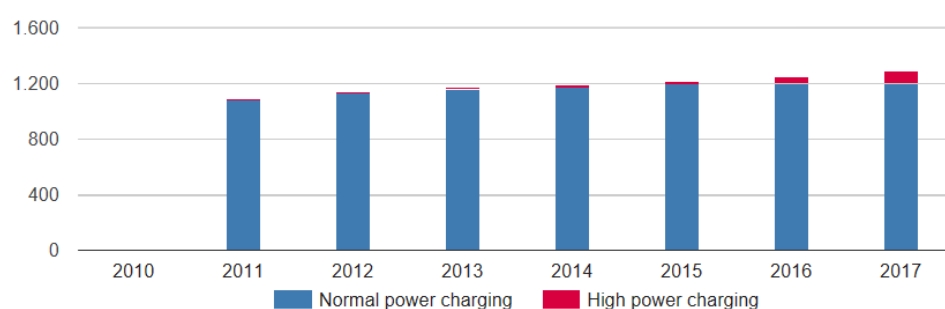
Source: EAFO (n.d.)

Appendix 6 – Classification of Charging Stations

Classification	Current	Power	Charging Time
Slow chargers	AC	3.7 kW	6-8h for 80%
	AC	7.4 kW	5-6h for 80%
	AC	11 kW	3-4h for 80%
Semi-fast chargers	AC	22 kW	1-3h for 80%
Fast chargers	DC	>22 kW	10-30min for 80%

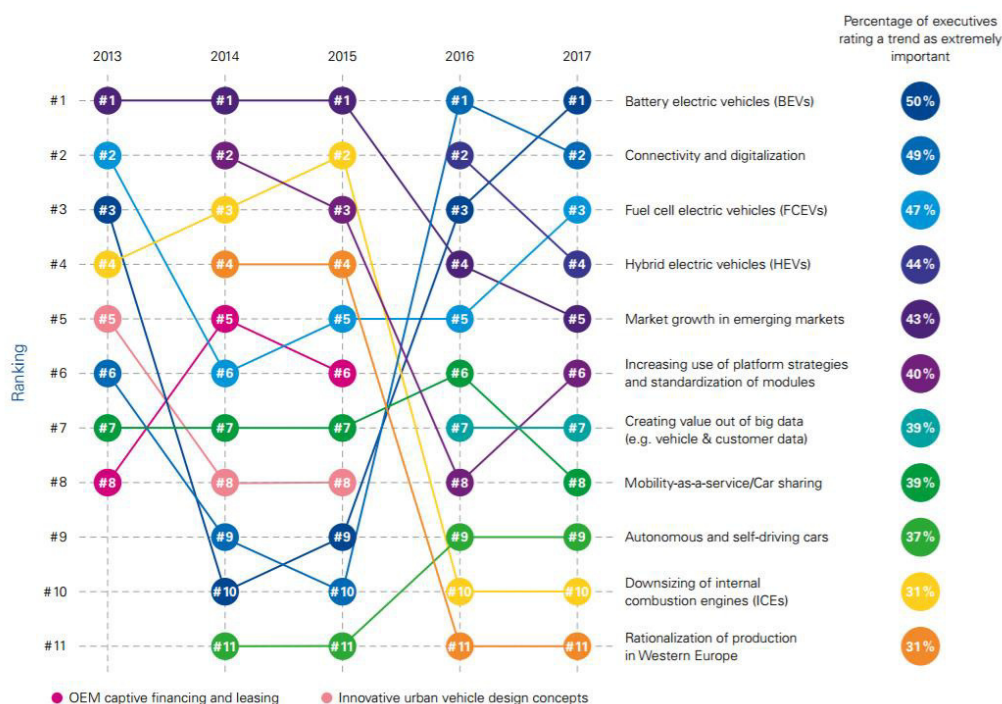
Source: IEA (2017); Mobi.e (n.d.)

Appendix 7 – Number of Publicly Accessible Charging Stations in Portugal



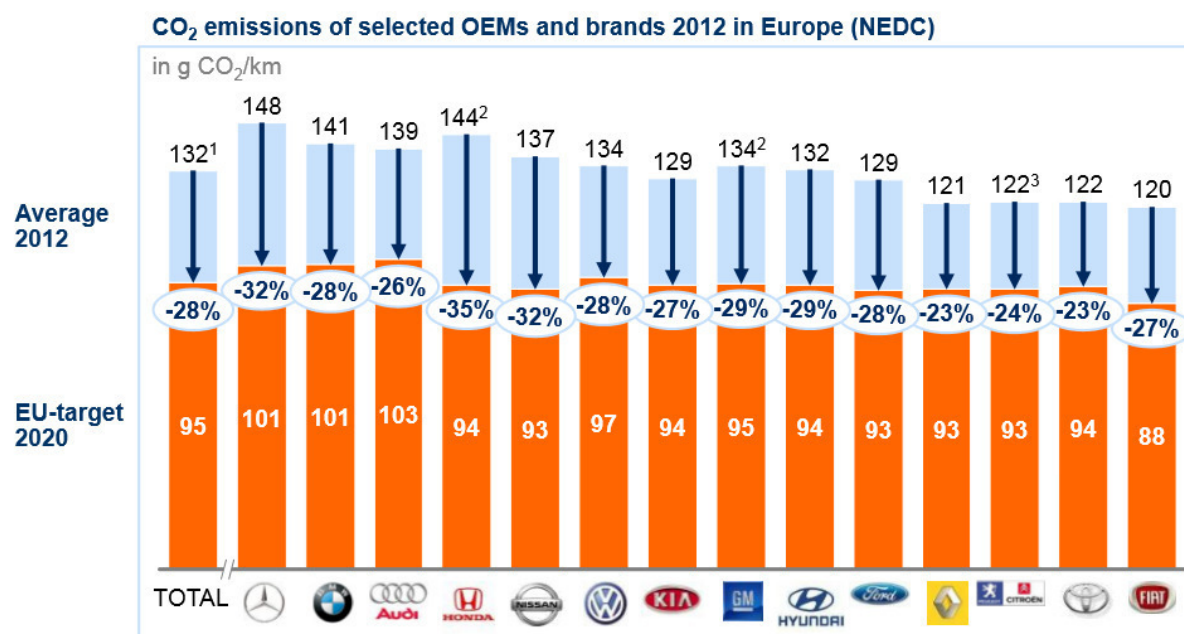
Source: EAFO (n.d.)

Appendix 8 – Key Trends in the Automotive Industry Until 2025



Source: KPMG (2017)

Appendix 9 – Required Cuts of Fleet Emissions of Major OEMs



1 Average of top 20 brands

2 Data from 2011; 2012 numbers not officially published yet

3 Average of Peugeot 121.2 and Citroen 122.0 and average difference Peugeot -7.3 and Citroen -3.4

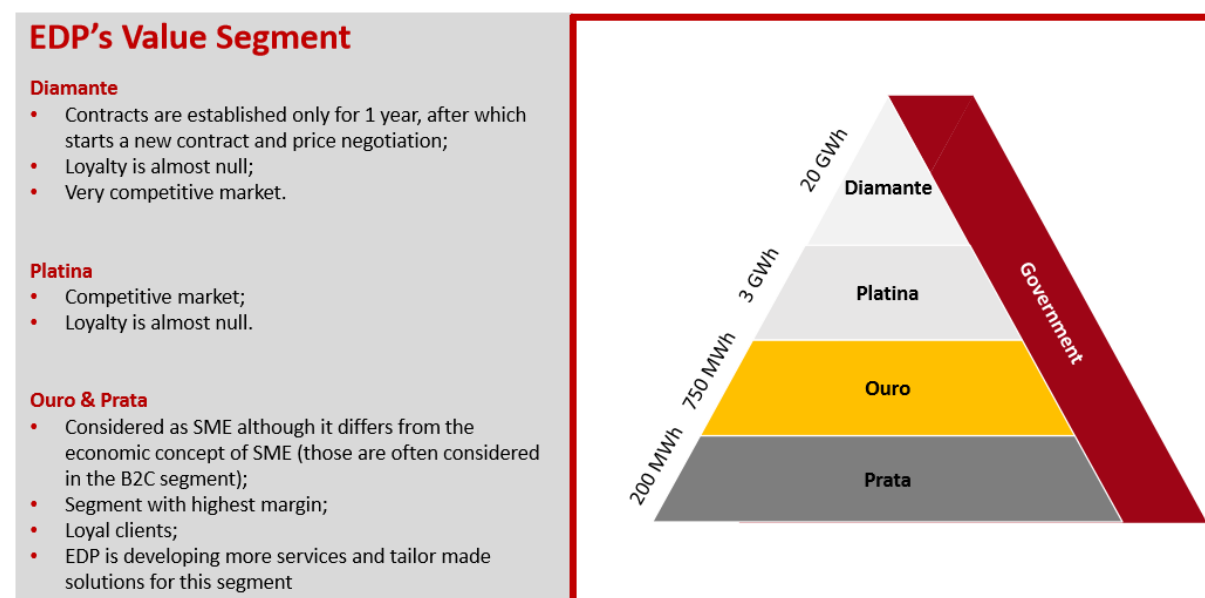
Source: ARF and McKinsey (2014)

Appendix 10 – Veículo Elétrico - A escolha Certa para a sua Empresa

Limites Máximos	C. I.	Híbrido Plug-In	Elétrico
Depreciação em 4 Anos	25% com limite máximo de 25 000 €	25% com limite máximo de 50 000 €	25% com limite máximo de 62 500 €
Poupança IRC Taxa 21%	5 250 €	10 500 €	13 125 €

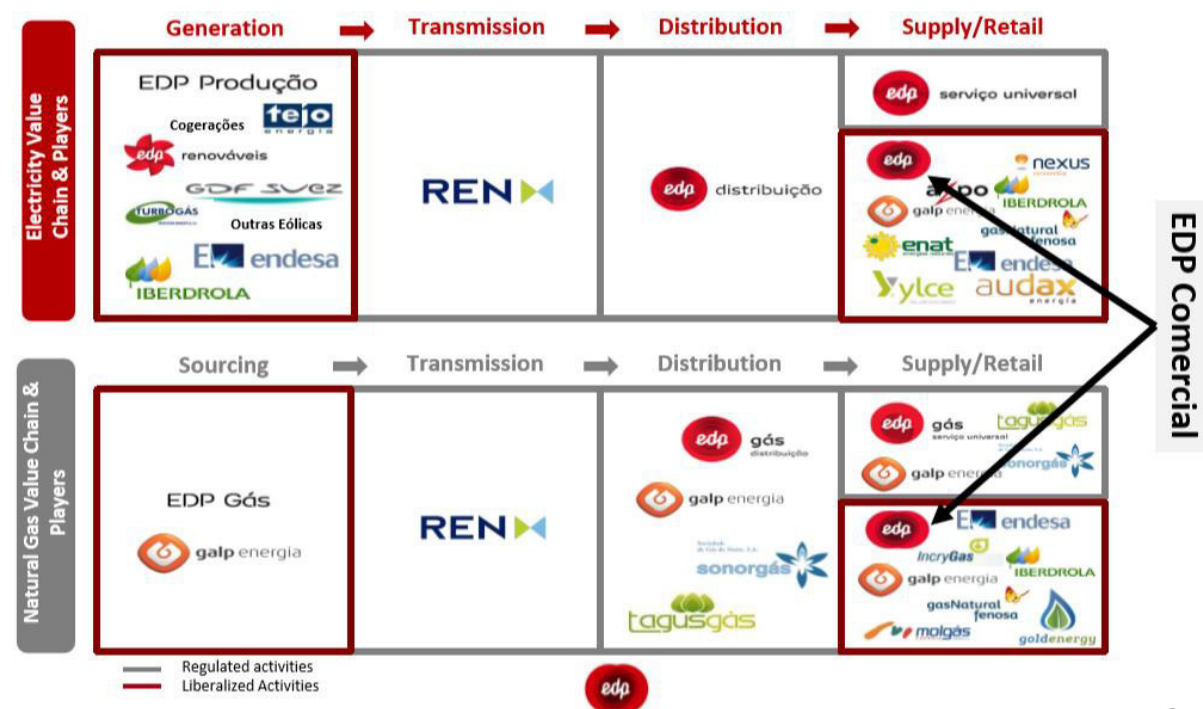
Source: Associação Utilizadores de Veículos Elétricos (2016)

Appendix 11 – EDP B2B Clients Segmentation



Source: EDP DCMK (2017)

Appendix 12 – EDP's Value Chain and Players



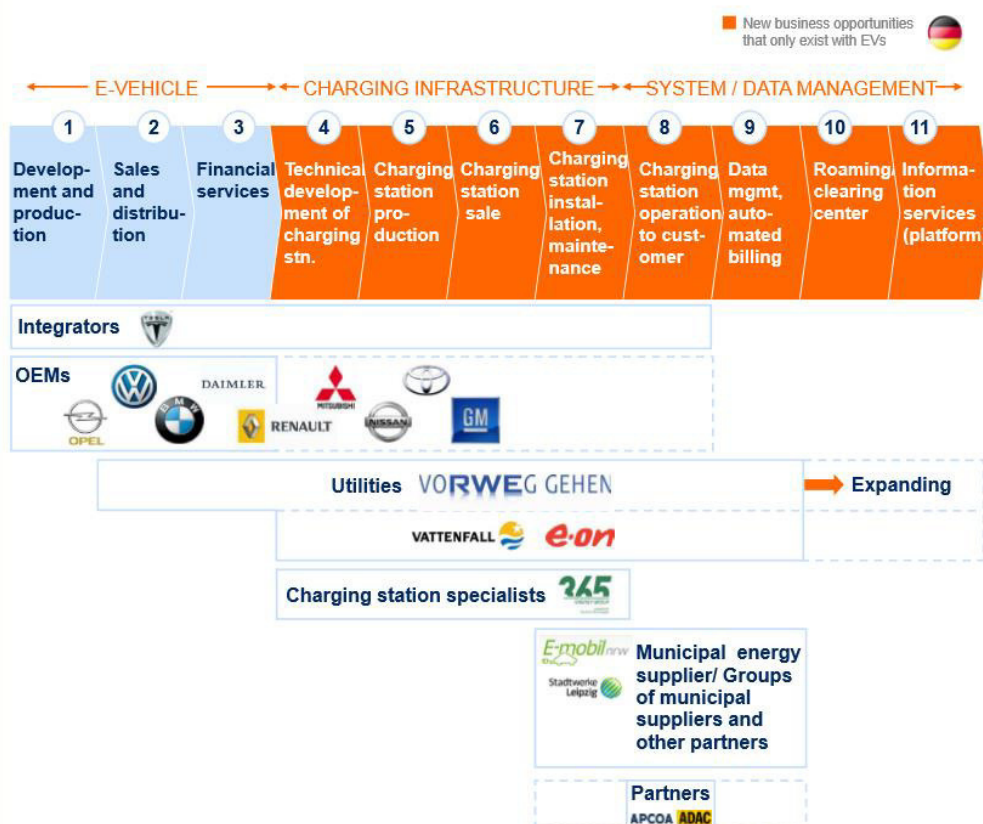
Source: EDP DCMK (2017)

Appendix 13 – Impact of Powertrain Transformation on Value Chain



Source: ARF and McKinsey (2014)

Appendix 14 – Incumbents and New Entrants are Trying to Capture New Opportunities along the EV Value Chain that did not Exist with ICE



Source: ARF and McKinsey (2014)

Appendix 15 – Competitors for Mobility Solutions

Services	Competitors	Description
Carsharing	AlphaCity	corporate carsharing services
	DriveNow	corporate carsharing services with the option of choosing EVs
	CityDrive	carsharing for individuals and companies
	24/7 City by Hertz	24/7 carsharing service mainly targeting businesses
Scooter sharing	eCooltra	sharing scooters with individuals and companies
Ride Hailing	Uber	transportation technology ride hailing company for businesses and individuals
	Cabify	transportation network ride hailing company for businesses and individuals
Leasing & Fleet Management	LeasePlan	large leasing company with a wide range of fleet management and mobility solutions including PEVs
Other Services	Taxis	transportation services

Sources: Authors' Own Creation according to AlphaCity (n.d.); DriveNow (n.d.); City Drive (n.d.); 24/7 City by Hertz (n.d.); eCooltra (n.d.); Uber (n.d.); Cabify (n.d.); LeasePlan (n.d.)

Appendix 16 – Advantages and Disadvantages of the Potential Business Models

Business Model	Main Advantages	Main Disadvantages
EDP Charging Power	• Turnkey solution • One-stop shopping • Parts of the equipment are already available • Some of the necessary processes are already in place	• Companies need to be convinced of the advantages of EVs first • Relatively high (future) market concentration expected
EDP Frota Verde	• Turnkey solution • One-stop shopping • Potential to boost current low adoption of EVs by companies • Cross-selling opportunities • 1st mover advantage	• Dependence on partners for the fleets • Need for new processes
EDP Commercial	• Air pollution and noise produced by commercial	• Currently, many suitable vehicle models are not

Electrification	vehicles would be reduced → important for cities • EVs would be very suitable for certain areas of commercial transport/delivery → lower TCO due to intensive usage of vehicles • New customer segment for electric mobility	available in Portugal • Dependence on partners for the fleets • Need for new processes
EDP V2B	• Customers could reduce their electricity costs • Solution can be extended to B2C customers • Reduces grid stabilization costs • Cross-selling opportunities • Facilitates transition towards sustainable energy and an emissions-free future	• High dependency on partners (e.g., car manufacturers) for technical prerequisites • Technology only exists in pilot projects • Cars would need to spend a relatively high amount of time on company premises • Small market for now
EDP V2G	• Could make electric mobility cheaper for companies (might be able to earn money by providing their cars as mobile storage units) • Solution can be extended to B2C customers • Reduces grid stabilization costs • Facilitates transition towards sustainable energy and an emissions-free future	• Legal issues with feeding energy back to the grid • High dependency on partners (e.g., car manufacturers) for technical prerequisites • Technology only exists in pilot projects • Cars would need to spend a relatively high amount of time on company premises • Small market for now
EDP Battery Swapping	• Reduces charging time to approx. 5 minutes • Addresses limited autonomy of EVs • No space for charging stations on company premises necessary • Swapping stations could also be used for B2C customers • Constant stream of payments for EDP	• High upfront investment in swapping stations • High dependency on others (e.g., car manufacturers) for technical prerequisites • Cannibalization of existing product offering (charging stations) • Uncertainty about winning technologies in batteries and charging

EDP Re-Battery	• Flexible, additional storage option for companies with solar panels • The secondary usage of older batteries reduces the TCO of batteries and thereby EVs • As an energy utility, EDP would be skilled to reuse older batteries	• Potentially dangerous to have a large number of batteries in the same place • Need for specialized people to handle and control batteries • Price of batteries is expected to decrease • Relatively easy to copy for competitors
EDP E-Carsharing	• Addresses trend of mobility as a service • Very convenient for customers • No high initial investments for customers • Decreases barriers to EV adoption • Flexible reaction to technological advancements in batteries and charging solutions possible	• Not all vehicle segments are offered in Portugal yet • Potentially relatively high dependence on partners • Danger of being copied by car rental or carsharing companies → more experience & infrastructure in this area

Source: Authors' Own Creation

Appendix 17 – Category Attractiveness Matrix: Risk Assessment

Risk			Business Models							
CRITERIA	MEASURE	WEIGHT	EDP Charging Power	EDP V2B	EDP V2G	EDP Battery Swapping	EDP Re-Battery	EDP E-Carsharing	EDP Full Power	EDP Commercial Electrification
Upfront investment	high = 5, medium = 3, low = 1	20%	2	3	0	5	2	3	3	3
(Future) Market concentration	high = 5, medium = 3, low = 1	10%	4	2	0	1	3	4	3	2
Technology materialization	technology ready for execution = 1, completely new development necessary = 5	20%	2	4	0	5	3	2	2	4
Ease of implementation (for EDP)	need for new processes/departments etc. = 5, processes already exist = 1	20%	2	4	0	5	4	3	3	4
Easy to copy for competitors	very difficult = 1, very easy = 5	10%	4	3	0	2	5	4	3	3
(Potential) substitutes	other products/services offer the same benefits = 5, unique = 1	10%	2	3	0	5	3	5	2	2
Dependency on others	highly dependent on others = 5, very low dependence on others = 1	10%	4	5	0	5	4	4	5	5

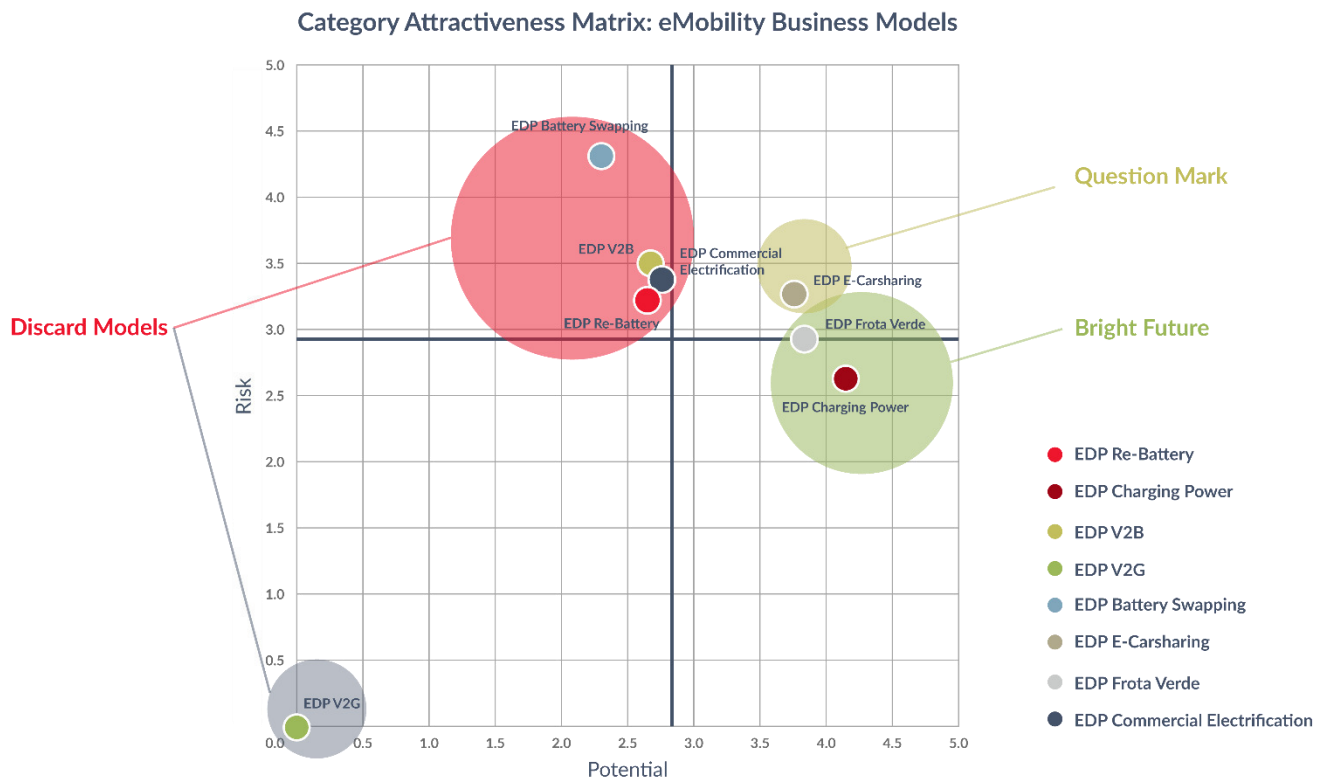
Source: Authors' Own Creation

Appendix 18 – Category Attractiveness Matrix: Potential Assessment

Potential			Business Models							
CRITERIA	MEASURE	WEIGHT	EDP Charging Power	EDP V2B	EDP V2G	EDP Battery Swapping	EDP Re-Battery	EDP E-Carsharing	EDP Full Power	EDP Commercial Electrification
Time to market	<0,5 years = 5, 0,5-1 year = 4, 1-1,5 years = 3, 1,5-2 years = 2, >2 years = 1	15%	5	2	0	1	1	4	3	1
Profitability/potential savings for EDP in other areas	high = 5, medium = 3, low = 1	5%	3	1	0	1	1	3	4	2
Market size	large = 5, medium = 3, small=1	10%	4	2	0	2	1	4	4	1
Innovation potential	very high innovation potential = 5, very low innovation potential = 1	10%	3	5	0	4	2	3	4	4
Potential for adoption by consumers	willingness of consumers to adopt solution: high = 5, medium = 3, low = 1	20%	5	2	0	3	4	3	4	2
Alignment with market trends	very high alignment = 5, very low alignment= 1	10%	4	3	0	2	2	5	4	4
Ease of use (for consumers)	difficult to use/very complex = 1, very easy/intuitive to use = 5	20%	4	3	0	3	5	4	4	4
Cross-selling opportunities	Potential sales of other products/services: high = 5, medium = 3, low = 1	10%	3	3	0	1	1	4	4	4

Source: Authors' Own Creation

Appendix 19 – Category Attractiveness Matrix eMobility Business Models B2B Segment



Source: Authors' Own Creation

Appendix 20 - Interview Guide All (Other) Companies

INTERVIEW GUIDE V1_EN (All companies except the ones offering mobility solutions)

Warm-up:

Good morning/afternoon. My name is _____ and I am currently a student at the NOVA School of Business and Economics. I am currently developing my Master's Thesis with a team of 5 people in partnership with EDP. Currently, we are conducting a research related with mobility solutions.

This interview will take around 30 minutes to one hour, and the method used is called in-depth exploratory interview, meaning you are free to say whatever comes to your mind after I introduce the topic. There are no right or wrong answers.

Later towards the end of the interview, I will ask you some more direct questions.

For analyzing this interview later, I would like to record this interview. It will of course remain anonymous and confidential and you will not be contacted for this project past this conversation. Would that be ok?

PRE-RECRUITING QUESTIONNAIRE

(Filter 1) Does your company have a fleet?

YES (GO TO NEXT QUESTION)

NO (START INTERVIEW TARGET A)

(Filter 2) Does your company have Electric Vehicles (EVs) in its fleet?

YES (START INTERVIEW TARGET B)

NO (START INTERVIEW TARGET C)

LOGIC	TARGET	MARK (check the box)
If F1= NO	Target A: does not have a fleet	
If F1= YES and F2= YES	Target B: has a fleet and already uses EVs	
If F1= YES and F2= NO	Target C: has a fleet and does not use EVs yet	

INTERVIEW SCRIPT AND GUIDELINES

TARGET A

PART 1: If the company does NOT have a fleet

1.Can you tell the reasons why your company does not have a fleet? (high investment, maintenance, not necessary, ...)

2. Is your company considering having a fleet in the future?

If YES:

- Reasons for considering having a fleet in the future
- Time horizon
- Composition (ICE, hybrid, EVs)

- Which purposes would the cars be used for (sales fleet, personal fleet etc.)
- Higher probability of owning or renting/leasing a fleet
- Do they have a parking lot/parking garage?

PART 2: Mobility solutions in general

1.Can you tell me about which modes of transportation you use to get to meetings, clients etc.? (taxis, Uber, rental cars, trains, planes, ...)

- Type of transportation
- Frequency of use
- For which purposes are each of the different types of transportation used (to get from one site to the other, to go to clients, ...)
- Similar routes
- Long or short distances
- Type of cars needed (small cars, vans, ...) → a lot of different types?
- If they need a different car model than the ones that are available in the fleet, how do they organize it
- Experience - advantages and disadvantages
- Do they have a garage/parking space? Or where do they park rental cars etc.?

2.Have you ever used a *carsharing* service?

If YES:

- Brand
- Frequency
- Price
- Purpose
- Experience

If NOT: Have you ever considered using a carsharing service? Why/Why not?

- Opportunities and obstacles/challenges
- Under which circumstances would they be open to using it (if it reduces transportation costs, more convenient than current modes of transportation, ...)

PART 3: Charging stations for employees or customers

1. Do you have charging stations for your employees or customers that own EVs?

If YES:

- Advantages and disadvantages
- Experiences so far → worth it? Impact on how the company is perceived?
- Composition and features → numbers, brand, type/models, ...
- How long does it take to charge the cars → normal (3,7kWh; 6-8h), semi-fast (22kWh; ~1h) or fast (20-30')
- Did they buy the charging stations or are they renting them?
- Complementing services (how are they operated etc.)
- Energy provider
- Location
- For which reasons (company image, attracts additional customers, ...)
- Are employees and/or customers supposed to pay for the energy in the future?

If NOT: Would you consider offering charging stations for your employees or customers in the future? Why/why not? Which features/circumstances would be important

PART 4: Renewable Energies

1. Does your company have energy provided by renewable energies?

If YES: Can you please tell me about the experience of having renewable energies?

- What kind?
- Buying drivers
- Main advantages and disadvantages

- Energy provider

If NO:

- Main obstacles/challenges
- Future situation

TARGET B

PART 1: If the company already HAS a fleet

1.Can you tell me about the fleet of your company?

- Composition (ICE, hybrid, EVs) → numbers
- Models of the cars → do they use different types of cars
- Which purposes are the cars used for (sales fleet, personal fleet etc.)
- Long or short distances
- Do they own the cars or do they lease them (leased from which company? Have they been working with this company for a long time?)
- Advantages and disadvantages of owning/leasing the cars
- How/by whom is the fleet managed (maintenance etc.)
- How regularly do they change/update their fleet?
- Do they see any problems with their fleet (inefficient use of cars etc.)
- Are the cars assigned to specific employees or used by several employees?
- Do they have their logo or other things on the cars to increase/generate visibility?
- Do they have a parking lot/parking garage?

2.Can you tell me more about how you choose the cars for your fleet?

- Buying drivers (price, availability, recommendations, ...)
- Decision making process (how is the decision made, who makes the decision, ...)

PART 2: If the company already USES EVs

1.Can you tell me about your experience with using EVs in the company fleet?

- Composition (models, number of cars, ...) → **if not specified in Part 1**
- Who is using the cars (sales people, managers, cars for the personal fleet etc.)
- For which purpose are the cars used
- Advantages and disadvantages → positive/negative experiences

2.Can you tell me more about how you chose the electric cars that are part of the fleet?

- Buying drivers (price, availability, recommendations, environmental reasons, ...)
- Decision making process (how is the decision made, who makes the decision, ...)

3.Can you tell me about your experiences with charging solutions for EVs?

- Composition and features → numbers, brand, type/models, ...
- How long does it take to charge the cars → fast or slow charging?
- Did they buy the charging stations or are they renting them?
- Complementing services (how are they managed, operator (OPC) etc.)
- Advantages and disadvantages
- Energy provider
- Location
- Are employees and customers allowed to use these or are there additional charging stations for personal cars?
 - For which reasons (company image, attracts additional customers, ...)
 - Are they supposed to pay for the energy in the future?
 - Experiences so far --> worth it? Impact on how the company is perceived?
 - If additional charging stations: how many? Type? What is important?

4.Can you tell me more about how you chose the charging solutions you are currently using?

- Buying drivers (price, availability, recommendations...)

- Decision making process (how is the decision made, who makes the decision...)

PART 3: Mobility solutions in general

1.Can you tell me about which modes of transportation you use to get to meetings, clients etc.? (taxi, Uber, rental cars, trains, planes, ...)

- Type of transportation
- Frequency of use
- For which purposes are each of the different types of transportation used (to get from one site to the other, to go to clients, ...)
- Similar routes
- Long or short distances
- Type of cars needed (small cars, vans, ...) → a lot of different types?
- If they need a different car model than the ones that are available in the fleet, how do they organize it
- Experience - advantages and disadvantages
- Do they have a garage/parking space? Or where do they park rental cars etc.?

2.Have you ever used a *carsharing* service?

If YES:

- Brand
- Frequency
- Price
- Purpose
- Experience

If NOT: Have you ever considered using a carsharing service? Why/Why not?

- Opportunities and obstacles/challenges

- Under which circumstances would they be open to using it (if it reduces transportation costs, more convenient than current modes of transportation, ...)

PART 4: Renewable Energies

1.Does your company have energy provided by renewable energies?

If YES: Can you please tell me about the experience of having renewable energies?

- What kind?
- Buying drivers
- Main advantages and disadvantages
- Energy provider

If NO:

- Main obstacles/challenges
- Future situation

TARGET C

PART 1: If the company already HAS a fleet

1.Can you tell me about the fleet of your company?

- Composition (ICE, hybrid, EVs) → numbers
- Models of the cars → do they use different types of cars
- Which purposes are the cars used for (sales fleet, personal fleet etc.)
- Long or short distances
- Do they own the cars or do they lease them (leased from which company? Have they been working with this company for a long time?)
- Advantages and disadvantages of owning/leasing the cars
- How/by whom is the fleet managed (maintenance etc.)
- How regularly do they change/update their fleet?
- Do they see any problems with their fleet (inefficient use of cars etc.)?

- Are the cars assigned to specific employees or used by several employees?
- Do they have their logo or other things on the cars to increase/generate visibility?
- Do they have a parking lot/parking garage?

2.Can you tell me more about how you choose the cars for your fleet?

- Buying drivers (price, availability, recommendations, ...)
- Decision making process (how is the decision made, who makes the decision, ...)

PART 2: If the company does NOT USE EVs yet

1.Have you ever considered adopting EVs in the future? Why/why not?

- Opportunities and obstacles/challenges
- Would it have an impact on how the company would be perceived by customers
- Time horizon for possible adoption

2.Do you have charging stations for your employees or customers that own EVs?

If YES:

- Composition and features → numbers, brand, type/models, ...
- How long does it take to charge the cars → fast or slow charging?
- Did they buy the charging stations or are they renting them?
- Complementing services (how are they managed etc.)
- Advantages and disadvantages
- Energy provider
- Location
- For which reasons (company image, attracts additional customers, ...)
- Are employees and/or customers supposed to pay for the energy in the future?
- Experiences so far → worth it? Impact on how the company is perceived?

If NOT: Would you consider offering charging stations for your employees or customers in the future? Why/why not? Which features/circumstances would be important

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If YES:

- Brand
- Frequency
- Price
- Purpose
- Experience

If NOT: Have you ever considered using a carsharing service? Why/Why not?

- Opportunities and obstacles/challenges

- Under which circumstances would they be open to using it (if it reduces transportation costs, more convenient than current modes of transportation, ...)

PART 4: Renewable Energies

1.Does your company have energy provided by renewable energies?

If YES: Can you please tell me about the experience of having renewable energies?

- What kind?
- Buying drivers
- Main advantages and disadvantages
- Energy provider

If NO:

- Main obstacles/challenges
- Future situation

DIRECT QUESTIONS: For all targets

1. If your employees work late hours, is the company providing transportation services?
2. How many of the employees' commute using public transportation and how many use their own vehicle?
3. Have you already implemented any initiatives related to "greener operations" or are you aware of some initiatives done in your company (does not have to be related with transportation)?

(Renewable energies, energy efficiency, etc.)

If YES: Which?

If NOT: Are you considering implementing any initiatives related to "greener operations"?

Examples.

4. Can you please tell me which company is currently your energy provider? Why?
5. Do you have any additional information that you would like to add?

WRAP-UP

For the purpose of characterizing the whole sample of respondents, could you just indicate the following:

- Number of employees in Portugal
 - 1
 - 2 - 10
 - 11 - 50
 - 51 - 200
 - > 200
- Sector (Fill in yourself)
 - Accounting & Consulting
 - Automotive
 - Banking & Finance
 - Energy & Utilities
 - FMCG
 - HORECA
 - Insurance
 - IT
 - Law firm
 - Manufacturing
 - Media & Entertainment
 - Real Estate
 - Retail
 - Science & Pharmaceuticals
 - Telecommunications

- Transports and Logistics
- Travel
- Other
- Number of offices
 - 1
 - 2 - 3
 - 4 - 5
 - > 5
- Location(s)

LOCATION	MARK (check the boxes)
Lisbon	
North of Portugal	
Center of Portugal	
South of Portugal	

Thank you very much for your time and feedback – your opinions are really important to make improvements and we value them a lot! Have a great day!

Source: Authors' Own Creation

Appendix 21 – Interview Guide Leasing and Fleet Management Companies

INTERVIEW GUIDE V3_EN (Fleet Management/Leasing companies)

Warm-up:

Good morning/afternoon. My name is _____ and I am currently a student at the NOVA School of Business and Economics. I am currently developing my Master's Thesis with a team of 5 people in partnership with EDP. Currently, we are conducting a research related with mobility solutions.

This interview will take around 30 minutes to one hour, and the method used is called in-depth exploratory interview, meaning you are free to say whatever comes to your mind after I introduce the topic. There are no right or wrong answers.

Later towards the end of the interview, I will ask you some more direct questions.

For analyzing this interview later, I would like to record this interview. It will of course remain anonymous and confidential and you will not be contacted for this project past this conversation. Would that be ok?

INTERVIEW SCRIPT AND GUIDELINES

PART 1: Company's own fleet

1.Can you tell me about the fleet of your company?

- Composition (ICE, hybrid, EVs) → numbers
- Models of the cars → do they use different types of cars
- Which purposes are the cars used for (sales fleet, personal fleet etc.)
- Long or short distances
- How/by whom is the fleet managed (maintenance etc.)
- How regularly do they change/update their fleet?
- Are the cars are assigned to specific employees or used by several employees?
- Do they have their logo or other things on the cars to increase/generate visibility?
- Do they have a parking lot/parking garage?

2.Can you tell me more about how you choose the cars for your fleet?

- Buying drivers (price, availability, recommendations, ...)
- Decision making process (how is the decision made, who makes the decision, ...)

PART 2: EV usage

PART 2.1: If the company uses EVs

1.Can you tell me about your experience with using EVs in the company fleet?

- Composition (models, number of cars, ...) → **if not specified in Part 1**
- Who is using the cars (sales people, managers, cars for the personal fleet etc.)
- For which purpose are the cars used
- Advantages and disadvantages → positive/negative experiences

2.Can you tell me more about how you chose the electric cars that are part of the fleet?

- Buying drivers (price, availability, recommendations, environmental reasons, ...)
- Decision making process (how is the decision made, who makes the decision, ...)

3.Can you tell me about your experiences with charging solutions for EVs?

- Composition and features → numbers, brand, type/models, ...
- How long does it take to charge the cars → fast or slow charging?
- Did they buy the charging stations or are they renting them?
- Complementing services (how are they managed, operator (OPC) etc.)
- Advantages and disadvantages
- Energy provider
- Location
- Are employees and customers allowed to use these or are there additional charging stations for personal cars?
 - For which reasons (company image, attracts additional customers, ...)
 - Are they supposed to pay for the energy in the future?
 - Experiences so far → worth it? Impact on how the company is perceived?

- If additional charging stations: how many? Type? What is important?

4. Can you tell me more about how you chose the charging solutions you are currently using?

- Buying drivers (price, availability, recommendations...)
- Decision making process (how is the decision made, who makes the decision...)

PART 2.2: If the company doesn't use EVs

1. Have you ever considered adopting EVs in the future? Why/why not?

- Opportunities and obstacles/challenges
- Would it have an impact on how the company would be perceived by customers
- Time horizon for possible adoption

2. Do you have charging stations for your employees that own EVs?

If YES:

- Composition and features → numbers, brand, type/models, ...
- How long does it take to charge the cars → fast or slow charging?
- Did they buy the charging stations or are they renting them?
- Complementing services (how are they managed etc.)
- Advantages and disadvantages
- Energy provider
- Location
- For which reasons (company image, attracts additional customers, ...)
- Are employees and/or customers supposed to pay for the energy in the future?
- Experiences so far → worth it? Impact on how the company is perceived?

If NOT: Would you consider offering charging stations for your employees or customers in the future? Why/why not? Which features/circumstances would be important

PART 3: Clients' Fleets

1. Can you please tell me what kind of services you offer to your clients?

- Relation between the company and the clients
- What's included in the deal (management, maintenance, choice of cars, inspection...)

2. Can you please tell me about the fleets of some companies you work with?

- Name of the companies (clients)
- Composition (ICE, hybrid, EVs) → numbers
- Models of the cars → do they use different types of cars
- Which purposes are the cars used for (sales fleet, personal fleet etc.)
- Who does the maintenance (if not answered above)
- Long or short distances
- How long have they been working with these companies?
- How regularly do they change/update their fleet?
- What services are offered (if not answered above)
- Are the cars assigned to specific employees or used by several employees

3. Can you tell me more about how the cars for the companies' fleets are chosen?

- Buying drivers (price, availability, recommendations...)
- Decision making process (how is the decision made, who makes the decision...)
- Companies' Policies

PART 3.1: If the clients use EVs

1. Can you tell me about your experience with managing fleets with EVs? / Can you tell me about your experience with leasing/renting EVs? (for leasing/renting companies)

- Demand and feedback from clients

- Composition (models, number of cars, ...)
- For which purpose are the cars used
- Advantages and disadvantages → positive/negative experiences

2.Can you tell me more about how the EVs that are part of the fleet(s) were chosen?

- Buying drivers (price, availability, recommendations, environmental reasons...)
- Decision making process (how is the decision made, who makes the decision...)

3.Can you tell me about your experiences with charging solutions for EVs? Do you manage them as well for companies?

- Composition → numbers
- Features (brand, type/models, ...)
- How long does it take to charge the cars → fast or slow charging?
- Did they buy them or are they renting them?
- Complementing services (how are they managed etc.)
- Advantages and disadvantages
- Energy provider
- Location

4. Can you tell me if you are also responsible for choosing the best charging solutions for your clients?

(And if YES) Can you please tell me more about how you choose those charging solutions?

- Buying drivers (price, availability, recommendations...)
- Decision making process (how is the decision made, who makes the decision...)

PART 3.1: If the clients don't use EVs

1.Have you already considered using Evs on your clients' fleets in the future? Why/Why not?

- Challenges and Obstacles
- Would it have an impact on the companies' perception/image?
- Timeline for possible adoption

PART 4: Mobility solutions in general

1. Can you tell me about which modes of transportation you use to get to meetings, clients etc.? (taxis, Uber, rental cars, trains, planes, ...)

- Type of transportation
- Frequency of use
- For which purposes are each of the different types of transportation used (to get from one site to the other, to go to clients, ...)
- Similar routes
- Long or short distances
- Type of cars needed (small cars, vans, ...) → a lot of different types?
- If they need a different car model than the ones that are available in the fleet, how do they organize it
- Experience - advantages and disadvantages
- Do they have a garage/parking space? Or where do they park rental cars etc.?

2. Could you tell me if you offer any service/cars when your clients need or when, in a special occasion, they need a specific type of car other than the ones your company offers?

3. Do you offer any kind of carsharing solution to your clients?

PART 5: Renewable Energies

1. Does your company have energy provided by renewable energies?

If YES: Can you please tell me about the experience of having renewable energies?

- What kind?
- Buying drivers
- Main advantages and disadvantages
- Energy provider

If NO:

- Main obstacles/challenges
- Future situation

DIRECT QUESTIONS: All Targets

1. If your employees work late hours, is the company providing transportation services?
2. How many of the employees' commute using public transportation and how many use their own vehicle?
3. Have you already implemented any initiatives related to "greener operations" or are you aware of some initiatives done in your company (does not have to be related with transportation)?

(Renewable energies, energy efficiency, etc.)

If YES: Which?

If NOT: Are you considering implementing any initiatives related to "greener operations"?

Examples.

4. Can you please tell me which company is currently your energy provider? Why?
5. Do you have any additional information that you would like to add?

WRAP-UP

For the purpose of characterizing the whole sample of respondents, could you just indicate the following:

- Number of employees in PT
 - 1
 - 2 - 10
 - 11 - 50
 - 51 - 200
 - > 200
- Sector: Fleet Management
- Location(s)

LOCATION	MARK (check the boxes)
Lisbon	
North of Portugal	
Center of Portugal	
South of Portugal	

Thank you very much for your time and feedback – your opinions are really important to make improvements and we value them a lot! Have a great day!

Source: Authors' Own Creation

Appendix 22 – Interview Guide Taxi, Bus, and Car Rental Companies

INTERVIEW GUIDE V2_EN (Companies offering mobility solutions)

PRE-RECRUITING QUESTIONNAIRE

(Filter 1) Does your company offer services including Electric Vehicles?

YES (START INTERVIEW TARGET A)

NO (START INTERVIEW TARGET B)

LOGIC	TARGET	MARK (check the box)
If F1= YES	Target A: already uses EVS	
If F1= NO	Target B: does not use EVs yet	

Warm-up:

Good morning/afternoon. My name is _____ and I am currently a student at the NOVA School of Business and Economics. I am currently developing my Master's Thesis with a team of 5 people in partnership with EDP. Currently, we are conducting a research related with mobility solutions.

This interview will take around 30 minutes to one hour, and the method used is called in-depth exploratory interview, meaning you are free to say whatever comes to your mind after I introduce the topic. There are no right or wrong answers.

Later towards the end of the interview, I will ask you some more direct questions.

For analyzing this interview later, I would like to record this interview. It will of course remain anonymous and confidential and you will not be contacted for this project past this conversation. Would that be ok?

INTERVIEW SCRIPT AND GUIDELINES

TARGET A

PART 1:

1. Can you tell me about the fleet of your company?

- Composition (ICE, hybrid, EVs) → numbers
- Models of the cars → do they use different types of cars
- Which purposes are the cars used for (private or corporate customers)

- Long or short distances (**for taxis, ...**)
- How/by whom is the fleet managed (maintenance etc.)
- Do they see any problems with their fleet?
- Do they own the cars or do they lease them (leased from which company? Have they been working with this company for a long time?) → **taxi companies**
- Advantages and disadvantages of owning/leasing the cars
- Do they have their logo or other things on the cars to increase/generate visibility?
- How regularly do they change/update their fleet?
- Do they have a parking lot/parking garage?

2. Can you tell me more about how you choose the cars for your fleet?

- Buying drivers (price, availability, recommendations...)
- Decision making process (how is the decision made, who makes the decision...)

PART 2: If they already use EVs

1. Can you tell me about your experience of using EVs in the company fleet?

- Composition (models, number of cars) → **if not specified in Part 1**
- For which purpose are the cars used → **do not ask taxis**
- Advantages and disadvantages → positive/negative experiences

2. Can you tell me more about how you chose the EVs that are part of the fleet?

- Buying drivers (price, availability, recommendations, environmental reasons...)
- Decision making process (how is the decision made, who makes the decision...)

3. Can you tell me about your experiences with charging solutions for EVs?

- Composition → numbers

- Features (brand, type/models, ...)
- How long does it take to charge the cars → fast or slow charging?
- Did they buy them or are they renting them?
- Complementing services (how are they managed etc.)
- Advantages and disadvantages
- Energy provider
- Location
- Are employees allowed to use these or additional charging stations for personal cars?
 - For which reasons (company image, ...)
 - Are they supposed to pay for the energy in the future?
 - Experiences so far → worth it? Impact on how the company is perceived?
 - If additional charging stations: how many? Type? What is important?

4.Can you tell me more about how you chose the charging solutions you are currently using?

- Buying drivers (price, availability, recommendations...)
- Decision making process (how is the decision made, who makes the decision...)

PART 3: Renewable Energies

1.Does your company have energy provided by renewable energies?

If YES: Can you please tell me about the experience of having renewable energies?

- What kind?
- Buying drivers
- Main advantages and disadvantages
- Energy provider

If NO:

- Main obstacles/challenges
- Future situation

TARGET B

PART 1:

1. Can you tell me about the fleet of your company?

- Composition (ICE, hybrid, EVs) → numbers
- Models of the cars → do they use different types of cars
- Which purposes are the cars used for (private or corporate customers)
- Long or short distances → **taxi companies**
- How/by whom is the fleet managed (maintenance etc.)
- Do they see any problems with their fleet?
- Do they own the cars or do they lease them (leased from which company? Have they been working with this company for a long time?) → **taxi companies**
- Advantages and disadvantages of owning/leasing the cars
- Do they have their logo or other things on the cars to increase/generate visibility?
- How regularly do they change/update their fleet?
- Do they have a parking lot or a parking garage?

2. Can you tell me more about how you choose the cars for your fleet?

- Buying drivers (price, availability, recommendations...)
- Decision making process (how is the decision made, who makes the decision...)

PART 2: If they do not use EVs yet

1. Have you ever considered adopting EVs in the future? Why/why not?

- Opportunities and obstacles/challenges
- Would it have an impact on how the company would be perceived by customers
- Time horizon for possible adoption

2. Do you have charging stations for your employees or customers that own EVs?

If YES:

- Composition and features → numbers, brand, type/models, ...
- How long does it take to charge the cars → fast or slow charging?
- Did they buy the charging stations or are they renting them?
- Complementing services (how are they managed etc.)
- Advantages and disadvantages
- Energy provider
- Location
- For which reasons (company image, attracts additional customers, ...)
- Are employees and/or customers supposed to pay for the energy in the future?
- Experiences so far --> worth it? Impact on how the company is perceived?

If NOT: Would you consider offering charging stations for your employees or customers in the future? Why/why not? Which features/circumstances would be important

PART 3: Renewable Energies

1. Does your company have energy provided by renewable energies?

If YES: Can you please tell me about the experience of having renewable energies?

- What kind?
- Buying drivers

- Main advantages and disadvantages
- Energy provider

If NO:

- Main obstacles/challenges
- Future situation

DIRECT QUESTIONS: For all targets

1. If your employees work late hours, is the company providing transportation services?
2. How many of the employees' commute using public transportation and how many use their own vehicle?
3. Have you already implemented any initiatives related to "greener operations" or are you aware of some initiatives done in your company (does not have to be related with transportation)? (Renewable energies, energy efficiency, etc.)

If YES: Which?

If NOT: Are you considering implementing any initiatives related to "greener operations"?

Examples.

4. Can you please tell me which company is currently your energy provider? Why?
5. Do you have any additional information that you would like to add?

WRAP-UP

For the purpose of characterizing the whole sample of respondents, could you just indicate the following:

- Number of employees in PT
 - 1
 - 2 - 10
 - 11 - 50
 - 51 - 200
 - > 200
- Sector (Fill in yourself)
 - Car Leasing/rental
 - Transports and Logistics
- Location(s)

LOCATION	MARK (check the boxes)
Lisbon	
North of Portugal	
Center of Portugal	
South of Portugal	

Thank you very much for your time and feedback – your opinions are really important to make improvements and we value them a lot! Have a great day!

Source: Authors' Own Creation

Appendix 23 – Transcripts of Interviews

[SECTOR | NR OF EMPLOYEES | NR OF VEHICLES IN THE FLEET | NUMBER OF EVs]

- **AUTOMOTIVE | [500; 2.000[Employees | 20 – 200 vehicles in the fleet | NO EVs**

“(…) É um benefício da pessoa (…) mas não deixa de ser uma viatura da companhia. (...) (...) Fazemos o *leasing* à empresa que nos apresentar melhor cotação. (...) As locadoras pronunciam-se, dão um preço, e depois basicamente ao melhor preço, optamos por essa locadora. Portanto eu não trabalho com uma, mas trabalho com várias locadoras. (...) (...) Isso é uma questão que hoje não está integrada porque o custo desses veículos (elétricos) é superior aos veículos de motor normal, motor de combustão. Porque ainda não existem soluções que sejam verdadeiramente vantajosas para ocupar essas funções. Como temos

maioritariamente carros que são entregues de uma forma de benefício, há um valor associado aquele carro, e que a pessoa gere esse valor, ... cada pessoa tem um plafond, o elétrico não lhe dá qualquer benefício, porque o custo das baterias... basicamente é o custo do *renting* das baterias que é significativo, e se compararmos com o custo do combustível... o carro depois não tem autonomia para determinadas viagens, portanto ainda está um bocadinho aquém daquilo que é necessário. (...) Embora se fale colocar VEs na fábrica para serviços pool, portanto para serviços do dia-a-dia não são carros que estejam designados a ninguém, apenas por uma questão de imagem e junto da população local mostrarmos também que somos amigos do ambiente, mas nada mais do que pequeno marketing. (...)

(...) Isso é uma questão que levanta alguns pressupostos que podem ser mal interpretados. Como sendo isto uma companhia, e somos todos tratados da mesma forma, dentro das devidas aspás claro, se nós colocarmos aqui postos de eletricidade para os colaboradores que têm carros elétricos poderem carregar o seu veículo, porque é que não damos também um determinado valor a pessoas para as pessoas que não têm VEs pagarem combustível? Portanto, mantém-se cinzenta e não esse benefício a ninguém. Nem eletricidade nem vales de combustível. Mas temos uma coisa muito boa, temos uma excelente exposição solar, e que quem quiser trazer painéis solares para carregar as suas baterias pode trazer. (...) Cada carro coloque cada painel solar em cima de cada carro não é. (...)

(...) Conheço esse conceito que existe na Alemanha (*carsharing*). As pessoas alugavam o carro por um período de tempo muito reduzido, 2h, 4h, uma deslocação entre cidades, sim tens um valor associado a isso, e podes desde já levar o carro daqui para outra cidade e deixas o carro lá. E já sei que acontece o mesmo com bicicletas, podes fazer o mesmo com bicicletas. (...) Julgo que da *BMW*. Que tinhas um contrato com eles, e deslocavas-te no centro da cidade. Podias ir de um azul e vir num vermelho. (...) Há no meio de tudo isso uma responsabilidade associada, que eu não sei que tipo de seguro ou modalidade de seguro é que o *carsharing* tem disponível, quando falamos em *carsharing* eu pressuponho que o carro é utilizado por várias pessoas que nada têm a ver umas com as outras nem que esteja relacionado com a mesma entidade patronal. Se eu chamo um Táxi para transportar os meus colaboradores para casa ou para a empresa, eu tenho uma responsabilidade neste transporte, eu não posso ter consciência de que seguro é que os está a proteger. Portanto não sei como é o seguro do *carsharing*, enquanto as pessoas se deslocam para casa ou de casa para o trabalho, aí já é uma responsabilidade do empregador, a proteção dessas pessoas. Não quer dizer que isto não evolua nesse sentido, mas até à data o único transportes que nos dão essa garantia é os táxis. Nem se quer *UBER*. (...)

(...) Arranjem-me *motosharing*, *bikesharing*, *carsharing*, e elétricos. E baratos e acessíveis. Porque, eu abduco do meu carro hoje. Não quero o carro para nada. Mas eu pontualmente preciso de me deslocar, não tenho condições... já pensei trocar o meu carro por um carro elétrico, mas não consigo carregá-lo à porta de casa porque não me parece que os vizinhos aceitem ter uma extensão esticada desde o meu andar até ao rés-de-chão. (...)"

- **BANKING | [500; 2000] Employees | 21 - 200 vehicles in the fleet | NO EVs**

"(...) Temos monomarca neste momento é a Audi (...) utilizados para serviço (...) para uso pessoal quando há possibilidade ou necessidade mas a viatura não está alocada ao colaborador (...) será o primeiro responsável a pessoa que mais conduz a viatura mas se alguém necessitar a viatura estará lá disponível (...) Pela quilometragem diria que as distâncias percorridas são curtas (...) Temos uma empresa que gere que é a Leaseplan (...) normalmente temos contratos de 4 anos, conforme forem terminando logo se vê depois se há necessidade de renovar ou não (...) umas vezes precisamos mais, outras menos (...) Principalmente a

vantagem é ter alguém que nos gere e estar tudo incluído, não temos de nos preocupar com manutenções, com seguros, com tudo o que os carros envolvem (...) basta ir buscar a chave e eles tratam de tudo (...) desde os impostos, os seguros, essas coisas todas, verdade seja dita nós temos apenas de nos preocupar com o pagamento (...) Desvantagem não vejo assim muita (...) não encontro assim nenhuma que eu diga que seria melhor se fosse uma gestão interna até porque o fim deste tipo de empresas que gere a frota dos clientes é mesmo esse, o cliente só tem de se preocupar em pagar no fim! Eles dão um número e esse número serve para tudo (...) nós só sabemos de vez em quando o que se está passar (...) Não utilizamos nenhum logo nas viaturas (...) O que temos mais em conta normalmente é o preço (...) dizemos mais ou menos o tipo de veículos que queremos, eles fazem uma grelha de várias marcas e valores e depois a administração decide quais é que encaixam melhor nos perfis necessários (...) nós sabemos mais ou menos ao determinarmos o balcão, a área, os quilómetros que irá fazer aquela viatura, se compensa ou não (...) há sítios em que se calhar compensa muito mais alugar porque só tem de ir uma vez a algum lado, nesses casos mais vale alugar um dia à Europcar (...) cada caso é um caso! (...)

(...) Já se pensou nisso mas todas as simulações que fizeram os valores da renda e as autonomias acabavam muito por ficar sempre aquém do resto (...) com base nas propostas das marcas depois a LeasePlan faz os cálculos, a nós chega-nos o valor final da renda e é o que nos interessa (...) Teremos veículos eléctricos assim que houver possibilidade e os critérios se encaixarem com o que queremos (...) quando as rendas ficarem mais acessíveis (...) passa mais de metade do valor da renda dos outros mas também nós renovamos de 4 em 4 anos, estamos a falar de um espaço temporal muito grande, a nossa realidade pode estar um pouco desfasada (...) se tudo correr bem 2018 será um ano de renovações e se calhar hoje em dia já mudou tudo, até as autonomias e tudo, já deve estar tudo mudado (...) estou a falar num contexto de há 3 anos atrás e nesse tempo muda muita coisa (...)

(...) Claro bastava termos um veículo desses para avançarmos com isso até porque para nós acabava por ser mais vantajoso se os colaboradores em vez de gasolina pudessem abastecer aliás carregar seria sempre mais compensatório para nós (...) temos uma área de clientes onde podem estacionar, se assim fosse não íamos privar os clientes de utilizar o carregador (...) Temos um cartão frota da GALP (...) eu não estou a par de como é feito para os eléctricos, até já ouvi dizer que é tudo feito via aplicação (...)

(...) Normalmente utilizamos a viatura da empresa que esteja disponível ou então tem que ser táxi ou metro (...) acho que deve ser o mais utilizado ou os uberes e coisas assim (...) tudo para reuniões e mais para curtas distâncias (...)"

- **BANKING | [>2000 | Employees | 200 – 650 vehicles in the fleet | NO EVs**

“(...) Não temos nenhum veículo eléctrico, tirando os empilhadores do armazém (...) O banco disponibiliza um plafond de combustível anual para uso pessoal (...)

(...) Negociamos o pacote de gestão oficial (...)

(...) Os nossos carros estão sempre na estrada (...)

(...) Viaturas a gasóleo, todas de 5 portas, carros ou carrinhas, cores discretas porque geralmente poderão ter que transportar clientes ou convidados. Não aceitamos carros desportivos, nem jipes (...)

(...) Temos patamares financeiros e consoante a categoria contratual da pessoa. Quanto maior a categoria, melhor o carro (...)

(...) As características do carro. No patamar onde meto um Renault Megane a gasóleo, só consigo encaixar um ZOE eléctrico. E a pessoa, que tem uma opção de escolha, nunca vai

para um Zoe que é pequeno, é utilitário. (...) Carros eléctricos pequenos, combatem diretamente com carros do segmento médio a gasóleo (...) Depois é a autonomia desses carros, tirando raras exceções não consigo ir de Lisboa/Oeiras a Faro ou ao Porto diretamente (...) Um banco não deduz IVA (...)

(...) Está em projeto muito avançado a colocação de postos de carregamento quer no interior das nossas instalações para colaboradores quer no exterior para os clientes. (...)

(...) Temos uma regra interna que de cada vez que um colaborador precise de se deslocar a uma distância superior a 75km, é obrigado a utilizar uma viatura de rent-a-car. Ou seja, não vai no seu próprio carro fazer kms (...) Sempre que há reuniões de terreno, há sempre uma organização do carro. Vai sempre a lotação máxima no carro (...) Porto-Lisboa aconselhamos a utilização do comboio ou avião low-cost (...)

(...) Temos um serviço que é o Camionete Sharing. Temos uma empresa que todos os dias de manhã vem uma da Gare do Oriente, uma das Amoreiras, uma de Sete Rios, outra do Campo Grande e outra de Santa Apolónia e trazem os colaboradores para o Tagus Park e ao final do dia levam (...) Uma média de 50 pessoas por camionete (...)

(...) Temos de responder a índices de sustentabilidade no final do ano”

- **CAR RENTAL | [200; 500[Employees | 20 – 200 vehicles in the fleet | NO EVs**

" (...) Temos todo o tipo de viaturas como possa imaginar, alugamos desde o carro mais pequenino a gasolina até às comerciais até 3.500 kg, temos o sector dos comerciais de ligeiros passageiros e temos o dos comerciais. *Viaturas Especiais* onde se enquadram os *Eléctricos*. (...)

(...) Estamos agora a pensar na possibilidade (...) dos nossos comerciais de todos eles andarem com viaturas eléctricas, quer por uma questão de otimização de custos quer por uma própria proteção do ambiente. (...) em todo o meu processo de decisão quando compro o fator da poluição e do CO2 também é tomado em consideração, se eu tiver uma proposta que não seja substancialmente diferente de preço de um carro similar a outro, a opção recai sobre a que tem menos emissões. É verdade também, que esta questão dos eléctricos não pode ser projetada a limites impensáveis, a estimativa para 2025 é que haja cerca de 20% de eléctricos, não é uma coisa que vá tomar conta do Mundo. Não sei se viu alguma entrevista recentemente (...) do Carlos Tavares o Presidente do Grupo PSA, o Grupo PSA-Citroen, (...) ah em que ele diz que o problema do lítio, e em primeiro lugar se há lítio suficiente para deixarmos os eléctricos crescerem indefinidamente, e no caso disso acontecer, o que é que se faz às baterias em fim de vida, se calhar é um problema maior que o CO2, isto há uma mudança da organização do mundo um bocadinho... Nós... qual é a nossa visão? Nós achamos que mais do que o carro eléctrico... o carro eléctrico vai-se centrar mais nas áreas das grandes cidades, do *carsharing*, do *carpooling*, tudo isso bom são áreas de desenvolvimento, mas também temos que ter os pés assentes no chão de que isso ainda hoje não vale 5%. E nós numa empresa desta dimensão não pode começar a despende 90% do tempo numa coisa que só vale 5% do negócio. Agora, que é um potencial de crescimento grande? Sim. (...) E uma das conclusões que eles têm que nos parece mais ou menos real, muito mais do que a evolução dos carros eléctricos, é que em 2000... Você lembra-se como é que uma pessoa há 200 anos conseguia ir de um sítio para o outro, como é que ia? Ia de cavalo. Quando você se precisa de mover hoje, pensa ir de cavalo? Em 2030 o carro não será tanto não usar o carro porque vai usá-lo, mas provavelmente você vai usar um carro que não é seu, em 2030 possuir vai ser uma coisa quase tão raro como possuir um cavalo. Você vai ter um carro autónomo que não precisa de condutor, você vai através de uma aplicação chamar um táxi que vem ter consigo sem

condutor, porque é um carro autónomo, já não tem se quer... já vem sozinho, isto já existe. A *Tesla* já tem carros destes. Sim e hoje em dia o *Tesla* já é um carro que não precisa de condutor. Em 2030 você quer um táxi e um táxi aparece-lhe à sua porta sem ter ninguém com quem falar é só através da aplicação, você entra e quando sai do carro e fecha a porta aciona o pagamento que sai na sua conta automaticamente porque você fez um contrato há 5 anos atrás a esse tipo de serviços. O carro não vai desaparecer, mas a mobilidade vai-se mudar constantemente, e progressivamente. Em 2030 provavelmente você não vai ter nos centros das cidades, nos centros das cidades você vai ver bicicletas, vai ver alguns meios de transportes coletivos e alguns carros autónomos elétricos. Porque os carros elétricos vão-se resumir um bocadinho a estes grandes centros. Depois, hão de continuar o aluguer de automóvel. Qual é a grande mudança do futuro? Com esta alteração toda que está a haver, das empresas de *carpooling* em que as pessoas partilham o seu próprio carro, partilham o carro e fazem *pooling*, quer dizer a pessoa... Hoje já há um bocadinho disso. Se você quiser ir de Faro para Lisboa vai à net e já consegue arranjar que lhe está a oferecer boleias e você paga o valor, contribui com o valor e já vai. Essa partilha do próprio carro reduziria para 1/4 o número de carros nas filas de trânsito. Se você considerar que tenha bons transportes, umas boas vias de bicicleta, você vai olhar para as cidades e (...) vão estar desertas de carros, isso vai ser o futuro. Agora... vai demorar. Ainda vai demorar. (...)

(...) E eu penso que inclusivamente será um mercado que crescerá mais forte que o elétrico (híbridos) (...)

(...) As nossas estações principais já estão equipadas com postos de carregamento, as estações principais. E depois a falta de crescimento deste mercado também tem um bocadinho a ver com a falta de soluções. Nós tivemos agora dois clientes que nos alugaram carros elétricos de Lisboa e que foram para Faro, e tiveram uma dificuldade enorme em conseguir carregar o carro. Pronto, acabaram por ir carregar o carro às nossas próprias instalações que estão devidamente equipadas, mas não é uma solução que permita que o mercado cresça. Porque, ninguém aluga um carro para ir de Lisboa a Lagos e em Lagos diz 'Olha preciso de carregar o carro e tenho que ir a Faro'. Quer dizer não, não faz sentido. Portanto há uma aposta que o Governo também tem que ter. (...)

(...)No edifício que a gente está há varias empresas, se eu tiver a gastar muita luz para carregar um carro (...) Eu na minha casa, tenho um contador dentro do... para o meu espaço, pedi à EDP para o fazer. (...) O que é preciso fazer é, contratar um eletricista que vá ao andar onde eu moro, utilizar a mesma tubagem por onde passam os cabos elétricos e fazer (...) do meu contador da minha própria casa vem-me um fio e aparece-me uma tomada junto do lugar onde eu estaciono que está ligado ao meu próprio contador que é para não ao ir contador dos reservatórios comuns. (...)

(...) Isso há uma empresa ou duas que fazem isso (...) EFACEC e Mobi.E. (...)

(...) O futuro não vai ser determinado ou comandado por quem é uma empresa de aluguer de automóveis ou por quem é uma empresa de aviação ou por quem é uma (...) empresa de aluguer de bicicletas. O futuro vai ser determinado pelas empresas que detiverem a posse do cliente. Você, você vai deixar no futuro de pensar 'eu quero ir de Lisboa a Faro, e então vou alugar um carro', o seu pensamento vai deixar de ser esse, o seu pensamento vai passar a ser 'eu quero ir de Lisboa a Faro ponto.'. Não vai pensar 'vou alugar um carro'. Vai entrar na sua aplicação, vai entrar numa empresa, e vai dizer 'eu quero ir de Lisboa a Faro', e o que é que lhe pode acontecer, pode acontecer que essa empresa lhe mande via aplicação um conjunto de vouchers em que diz 'então você vai sair da porta da Rua Avenida 25 de Abril número 27 que é a sua casa, vai pegar na bicicleta que está a 1 min a pé...vai a pé até à bicicleta que está a 1 min da sua casa, pega na bicicleta e faz 2 km até à estação de metro, no metro sai na paragem

nr tal,...' e você tem isto tudo pago. (integra os serviços todos) Todos. Por isso, quem é que vai dominar o mundo, quem tiver o cliente. E qual vai ser a grande guerra das empresas, das o serviço de 360graus, não deixar que o cliente precise de um serviço que ele próprio não forneça. Se o cliente quiser ir para a China, eu tenho que lhe organizar o percurso desde o momento que sai da porta de casa dele até à China, incluindo avião, barco se for caso disso, bicicleta, scooters, carros, ... o que for! Se eu deixar fazer isso, alguém vai fazer por mim, (...) e eu posso incluir o aluguer de carros neste processo, em determinada altura o cliente vai ter que andar num carro, mas é só um uma pequena parte da sua viagem. Mas eu vou gerir a totalidade da viagem. Vou deixar de ser uma mera empresa de aluguer de automóveis, para ser uma empresa completamente global, e eu vou deixar de fornecer um carro para as pessoas se deslocarem, e vou oferecer uma solução de mobilidade. Passo a ir do ponto A ao ponto B ponto. E esse é o futuro, e é um futuro que está a uma curta distância. (...) É a detenção do cliente, a fidelização do cliente que vai ser a chave do futuro. Esqueça a empresa de rent-a-car, esqueça a empresa de scooters, você qualquer necessidade que você tenha de necessidade você vai ser agarrada no ponto onde você entrar, no ponto de entrada, *entry point*, se for da X perfeito, eu vou agarrá-lo como cliente e depois cabe a mim fazer com que você fique satisfeita e que você nunca precise de contratar nenhum outro serviço de mobilidade fora, porque se for contratar um serviço fora da X, eles vão fazer o mesmo que eu faço. Vão tentar fazer-lhe um pacote completo e você vai deixar de precisar de mim. (...)

(...) daqui a 10 anos importa muito que você seja cliente da X, mas eu não lhe posso só dar um serviço de aluguer de automóveis porque eu vou perdê-la. (...)"

"Os fatores a ter em conta para o *TCO* são variadíssimos começa logo com a tipologia do carro e com o seu Valor Residual. Como uma empresa como a nossa, não é muito importante saber quanto é que o carro custou, porque na realidade o que me interessa é qual é o valor que o carro deprecia enquanto estiver comigo, ou seja, se eu comprar um carro por 20 ou por 40 para mim é completamente indiferente, o que me interessa é se passado um ano por quanto é que eu o vendo, e a diferença entre o valor que eu o compro e o valor que eu vendi vai ser o meu custo da retenção da viatura, *Total Cost of Ownership*, e o *Cost of Ownership* significa exatamente o tempo que o carro está na minha propriedade. O custo do *ownership* não é... é o custo de ter a viatura. E o ter comigo, não é o custo que ela vale! Eu posso ter um *A4* mais barato que um *Mini*, posso ter um *A4* mais barato que o *Peugeot 108*, porque se eu comprar um *Peugeot 108* por 10 e o vender passado um ano por 8, custou-me 2. E posso comprar um *A4* por 50 e vendê-lo por 49, e ele só me custou 1. Os fatores que eu tenho em conta para isto, são o Valor Residual do carro, e estou-lhe a dar um exemplo muito claro. Se eu comprar um *Dacia* é um carro que desvaloriza muito, eu compro por 10 porque o carro é muito barato, custa pouco dinheiro, é muito investimento, e passado um ano tenho que o vender por 7. Se eu comprar um *Audi* com um Valor Residual muito alto, isto acontece exatamente o oposto, compro muito mais caro mas vende-o muito mais caro, e a diferença acaba por ser mais barato com um *Audi* do que com um *Dacia*. Pronto, temos em consideração esse valor, o valor residual dos carros no final da vida e na minha posse, e depois temos em consideração as questões contratuais com as marcas. Eu quando compro um carro e vou devolver à marca passado um tempo, a marca dá-me um determinado número de quilómetros para fazer, e se eu fizer mais 15 km com o carro vou pagar pelo excesso de quilómetros à marca. Mas se a marca me der por exemplo por cada mês de utilização 3.000 km e outra me der 5.000 km eu tenho que considerar o custo de ultrapassar essa quilometragem no valor do *ownership*. Ou seja, eu tenho um carro que pode ser muito barato, mas a seguir vou pagar em quilómetros, e pago à outra e o carro pode ser mais barato, e vice-versa. Portanto temos em consideração o período de retenção da viatura, o valor do carro em si do bem enquanto está comigo, temos em consideração as emissões poluentes de CO₂, porque isso mexe nas taxas, nomeadamente naquilo que também é custo meu o IUC (Imposto Único de Circulação), é um custo meu

durante o tempo que o carro está comigo, porque se o carro for muito poluente tenho um custo acrescido. Se você me perguntar, ‘Se você tem muita atenção à questão poluente?’, não tenho muitas hipóteses de argumentar em relação à questão poluente porque eu compro 14.000 carros e compro quase tudo o que o mercado me oferece, mas ... mas tenho atenção porque o fator custo pesa-me na decisão. A partir do momento que tenho um carro mais poluente que custa mais, eu também tenho isso em consideração. Depois disso, temos em consideração também quanto é que eu tenho que pagar à marca pelos danos que o carro tiver quando for devolvido porque os critérios de marca para marca diferem, chamamos a isso o custo de recondição, no fundo é por o carro novamente nas condições iniciais e é um custo muito relevante, um custo importante. Depois temos em consideração as mais valias que vamos fazer nos carros, (...) se o carro tem uma imobilização ao final muito grande, há carros que durante o período de um ano estão aqui quase que não vão oficina, há outros que têm uma imobilização muito alta, porque têm que ser limpos, porque têm isto e aquilo, porque são mais sensíveis. Temos em conta os custos de manutenção, (...) reparações, nas reparações é mais na questão das peças, há carros que têm a reposição de peças quando têm um acidente muito caras, há outras marcas o custo das peças é muito mais barata, temos um rácio de quer de manutenção quer de acidentes em relação a estas viaturas. Temos em consideração fatores de segurança, (...) fatores de imagem, (...) fatores por exemplo de roubos, isto parece que a gente não pensa, mas por exemplo o *Fiat* é muito mais fácil de roubar que o *Volkswagen*, pronto e uma empresa com 18.000 carros tem vários carros com vários danos, e temos esse tipo de considerações. (...) Tudo isto acontece praticamente em todos, a esmagadora maioria baseadas em custos, porque a própria imobilização do carro também se reflete em custo, se eu tiver um carro que não posso alugar é custo para mim.

(...) Temos 15 veículos elétricos e o tipo de consumidor é o curioso. É o curioso. Não posso descrever de maneira melhor. A maioria são portugueses. O propósito para querer utilizar normalmente é curiosidade, para ver, ou porque leu na imprensa, ou porque leu nos *social media*, ... ele percebe que há aqui um *trend* e depois quer experimentar. Mas é uma frágil muito pequenina de clientes. (...)

- **CLEANING | [50; 200[Employees | <20 vehicles in the fleet | NO EVs**

“(...) Ao fim do leasing, como temos opção de ficar com o veículo, e as viaturas estão em bom estado pois fazemos a manutenção regularmente, preferimos o leasing (...)

(...) Quando se compra um carro para a frota temos sempre o cuidado de dizer a medida do interior para caber o máximo possível da carga (...) Verificamos a cilindrada, a potência e os consumos dos veículos. E também, claro, o preço (...)

(...) Era uma mais valia a frota ter elétricos (...) É o futuro (...) Não há oferta para as nossas necessidades. (...) O veículo tem de estar sempre a funcionar para trabalhar com a plataforma elevatória e o veículo tem de estar a funcionar. É muito consumo (...)

(...) A maioria [colaboradores] vive aqui em redor, muito perto (...)

(...) Tudo o que é danificado, em relação às roupas, são para reciclar. Vão para uma empresa que faz aproveitamento do algodão (...)

(...) Usamos um sistema de localização GPS para efeitos de comunicação”

- **ENGINEERING | [51; 200[Employees | 21 - 200 vehicles in the fleet | NO EVs**

"(...) Temos 34 viaturas ligeiros de mercadorias da Citroen e Volkswagen (...) são utilizadas tanto para serviço como para uso pessoal (...) tanto para longas como curtas distâncias (...)

são todas alugadas em regime de leasing (...) e os contratos são de 4 anos (...) o mais importante na escolha é o preço e a marca (...) Não temos carros elétricos mas queremos ter num futuro próximos e ainda só não temos por causa da autonomia (...) também não temos carregadores mas no futuro também queremos ter (...) Para além das viaturas da empresa utilizamos o metro para curtas distâncias (...) Nunca utilizámos carsharing (...) Diria que 20 trabalhadores utilizam transportes públicos, os outros 34 têm carro da empresa (...)

(...) Utilizamos a EDP (...) nenhuma razão em especial."

- **FLEET MANAGEMENT | [1; 10[Employees | NO vehicles in the fleet | NO EVs**

“(...) Estamos entre o Cliente e as Locadoras para assegurar que tudo corre pelo melhor para os clientes e que o contrato é. (...) Somos a ponte. O nosso foco é sempre o cliente. Nós somos a ponte entre o Cliente e a Locadora. O Cliente é que decide os fornecedores (fabricantes automóveis), e nós ficamos sempre entre o cliente. Nós somos praticamente o *front-line* do cliente, para o cliente estar um pouco mais liberto, por assim dizer, não ter uma pessoa dedicada à gestão da frota. (...)

(...) São os clientes que decidem, atualmente é o cliente em si, quando nós entramos no cliente, o cliente já tem uma gama de fornecedores, mas atualmente a maioria dos nossos clientes trabalha com a *ALD Automotive*, *Leaseplan*, *Arval*, ... e basicamente estas são as grandes empresas de *leasing* ou locadoras a nível de Portugal. (...)

(...) É sempre o cliente que decide, depende da *car policy* de cada cliente. (...)

(...) Temos alguns clientes que fazem a manutenção fora da locadora, mas normalmente quando o contrato da viatura é negociado, é negociado também a manutenção da viatura.

(...) Esse cálculo não é feito por nós (TCO) é feito pelas locadoras. Eu não tenho aqui uma regra por assim dizer para lhe dizer ‘Olhe utilizamos isto e assim e assim, para chegarmos ao TCO.’. Não. Nós já recebemos essa informação por parte das locadoras. (...)

(...) Isso ainda é muito recente e posso-lhe dizer que a nível de todos os nossos clientes, neste momento ainda não temos nenhum cliente (veículos elétricos) (...) Até agora não existiu interesse por parte do cliente, já foi feita análise para alguns clientes, mas ainda não existiu vantagem face ao gasto que o cliente tem (...) nem híbridos. (...)

(...) Como é sempre o cliente a decidir, nós apresentamos sempre propostas face ao mercado e às novidades do mercado, e apresentamos sempre a ideia, depois cabe sempre ao cliente se quer ou não avançar com essa análise.(...)

(...) Se o cliente adquirir ou colocar na sua frota um carro elétrico, o carregamento e todo o processo para o possível carregamento, ou seja, a aquisição do cartão, a responsabilidade do carregamento, ..., é tal e qual como um abastecimento. Ou seja, é feito só pelo cliente e pelo condutor específico da viatura. E todo o controlo ou toda a programação para possível carregamento no exterior, se for preciso a aquisição de um cartão, se é preciso aqui uma série de coisas, é feita exclusivamente pelo cliente. (...)

(...) Não é a X que decide, é o cliente. (*charging solutions*) (...)

(...) Tendo em conta os nossos condutores, provavelmente será a autonomia. Portanto estamos a falar de condutores que passam o dia inteiro na estrada. E não podem estar por vezes a despendar de X tempo que a viatura carregue, apesar de ser possível fazê-lo de noite, há condutores que fazem o país e à noite se for possível ainda estão na estrada. Se calhar o cliente pensa muito nisso. (...)

(...) EDP, mas não somos nós que escolhemos é o *Business Park* onde estamos (...)

(...) Temos sempre o cuidado de apresentar modelos e viaturas que venham a reduzir significativamente a emissão de CO2, para precisamente tentar sensibilizar aqui também os clientes para isso, uma que são carros também que circulam muito, cada vez mais tentamos modelos que a emissão de CO2 seja o mais reduzido possível. (...)

- **FLEET MANAGEMENT | [50; 200[Employees | 51 - 200 vehicles in the fleet | EVs**

“(...) Atualmente a nossa frota está definida por níveis; tipo hierarquias. (...)

(...) Nós temos uma área específica de negociação automóvel. (...)

(...) Isto é tão dinâmico, a questão dos veículos eléctricos que o que hoje é verdade, amanhã já não é (...) essencialmente porque a oferta está cada vez mais alargada (...) Até 2021 a nossa frota será 100% eléctrica (...) Estamos a começar por cima para dar o exemplo da parte da direcção para baixo (...) E essencialmente porque existe maior oferta nesses segmentos [gama alta] (...) Um colaborador tem um plug-in e consegue andar em modo eléctrico durante a semana toda (...) Está a adorar a experiência (...) Casa-trabalho-trabalho-casa”

(...) O mercado vai ditar muito essas regras (...) Nós fazemos uma shortlist para determinada função tem de existir um carro que corresponda aquelas necessidades. Se não houver nenhum eléctrico que corresponda aquelas necessidades, vai ser difícil conseguirmos implementar; (...) Apesar de cada vez mais nos termos mais soluções (...)

(...) O utilizador carrega o carro quando chega aqui e essa carga eléctrica que ele coloca permite-lhe ir para casa e voltar para o trabalho (...) A instalação de um poste de carregamento é uma coisa muito simples (...) A maioria dos carregamentos são todos lentos. Lentos poderão ir até 22 kW/h. Há desde 7,4 até 22 kW. (...) Um ZOE tem 40 kW portanto com um carregador de 22kW demorava 2h (...) Um carregador de 22kW também vai requerer muito mais potência (...) Temos 2 de 7,4 e uns que são tomada de rede. Super-lento. (...)

(...) A instalação dos postes de carregamento é uma coisa muito simples! (...)

(...) Um carregador lento deve começar nos 800€ e um rápido pode ir até aos 2000€ (...) Temos um contador dedicado, eles veem qual é a contagem e depois pagamos a quem nos aluga o edifício (...) Iremos ter um cartão para pagar em casa e na rua onde a conta irá directamente para a empresa. Terá que se ter um plafond tal e qual como temos em litros, mas em kW (...)

(...) A questão da infraestrutura dentro do edifício. Nós temos que solicitar porque estamos num espaço alugado, portanto, temos algumas restrições (...) Também tem a ver com o custo porque nós conseguimos negociar muito bem os carros e é difícil haver um construtor automóvel que nos consiga negociar 100 carros eléctricos em termos de buy-back (...) Temos que ter um perfil de condutor adaptável ao veículo 100% eléctrico”

- **FMCG | [50;200[Employees | 20 – 200 vehicles in the fleet | NO EVs**

“(...) *(vantagem das empresas comprarem ou fazerem aluguer de longa duração dos veículos)* não tens obrigações depois, e não tens mais um imobilizado. São contratos de aluguer, não ficas agarrada ao pescoço com um carro. Porque o teu negócio depois não é vender carros. O teu negócio é o negócio da empresa. (...) E os carros só dão é problemas, não é. (...) Desvantagem não há nenhuma. (...)

(...) Só quando houverem em aluguer de longa duração (veículos eléctricos). Nós não utilizamos porque ainda não está no mundo de aluguer de longa duração. Para mim era ótimo porque poupava em gasolina, poluía menos (porque sou uma empresa preocupada com isso), e poupava em termos de gasolina. No dia em que houver veículos... porque esta empresa não

utiliza porque não há em aluguer de longa duração. Porque senão era certinho e direitinho. Mesmo que pagasse mais por mês, percebes. Fazia todo o sentido. E eu acho que é por aí que vem o futuro também. (...)

(...) (se a garagem tem ou não postos de carregamento para veículos elétricos) Aliás quando eu entro na garagem há sempre 2 ou 3 carros a serem carregados. Este parque já está preparado para carros elétricos. (...)

(...) Eu acho que vai ser o futuro realmente a utilização de energias renováveis, mas as empresas que vendem os carros vão ter um papel crucial nisto não é, e as que alugam também não é, e os transportes públicos também... deviam ser quase todos obrigados a ter. Não faz sentido tu estares a utilizar energias renováveis e um táxi não ser obrigatório ser elétrico percebes. (...)"

- **FMCG | [200; 500] Employees | 200 – 650 vehicles in the fleet | EVs (3: 1 BEV, 2 Plug-In, 4 W/out Plug In)**

"(...) Queríamos ter mais (veículos elétricos), mas a nível comercial e financeiro ainda não há muita oferta nesse sentido, acho que daqui a 2 anos 3 anos é capaz de virar um bocado a página. Mas neste momento não há muitas opções. (...)

(...) Mesmo que... eu não tenho carro da companhia e vou a uma reunião, o meu colega do lado do meu departamento, o meu chefe, já aconteceu, (...) tem o carro aqui parqueado. Posso levar o seu carro? Claro! Vou à reunião e venho. Portanto utilizo o carro dele. O carro dele que o carro não é dele, é da nossa empresa, todas as viaturas são do pool, todas. Neste momento a viatura A está com o Manuel, a viatura B está com o Joaquim. Mas... no dia a seguir, pode ser utilizado por outra pessoa. Portanto fazemos um género de *carsharing* dentro da empresa. (...)

(...) Só temos um elétrico, completamente só um, que é um *Renault Kangoo*. Os híbridos Plug-In (*BMW Serie 7* do nosso *Chairman*) só temos 2, e híbridos sem ser plug-in temos 4.

(...) (*Renault Kangoo*) Que está na nossa fábrica, porque como as autonomias não são grandes coisas não é... (...) E precisamente por essa falta de autonomia, é a viatura que nós temos lá para circular entre fábricas, e faz assim essas voltinhas (...)

(...) Nós temos um carregador lá montado, aliás nós aqui na nossa garagem também temos. Nosso mesmo, fomos nós que instalámos. (...) temos um aqui à entrada da garagem, (...) para já o nosso CEO o nosso *Chairman* tem híbrido, e quando a carrinha a nossa elétrica vem cá a Lisboa também pode carregar ali, é mesmo posto nosso montado por nós. (...)

(...) Tencionamos (futuramente ter mais elétricos), aliás ainda ontem tivemos uma reunião, porque nós temos muitas reuniões com as marcas e ainda ontem tivemos precisamente uma reunião com a BMW e foi a primeira coisa que lhes questionámos 'E então e elétricos?', estamos sempre atentos porque queremos ter elétricos, mas neste momento não temos mais por dificuldades. (...)

(...) Essa carrinha que nós temos elétrica a *Renault Kangoo* foi-nos oferecida pela *Renault* quando fizemos um negócio com eles, ou seja, em vez de fazerem um desconto ofereceram um *free car*. E nós pensámos 'OK vai ficar aqui em Lisboa para o nosso estafeta, que nós temos estafeta, todos os dias vai fazer as voltas aqui em Lisboa (...), depois vai à fábrica, e vai ao Carregado, porque nós temos lá um Entrepasto, e ele vai ficar aqui.'. Mas depois... nada! E, portanto, acabou por ter de ir para a fábrica porque não dava, porque depois telefonava 'Olha afinal é preciso ir ao Carregado', Oi? E agora? Portanto, logisticamente não dá. Portanto, acabou por ficar lá. Enquanto que não houver essa solução, e as marcas já começam a investir, mas neste momento... eu acredito que daqui a 2 anos o panorama vai ser diferente, e daí

também, para além de as rendas ficarem mais baratas neste momento a 12 meses a nós também nos convém. Nós não sabemos como é que daqui a ... se tivéssemos contratos de 24 ou até 36 ou *whatever*, se tivéssemos contratos maiores nós não sabíamos como é que o mercado está nessa altura. E se calhar estávamos a perder dinheiro. Portanto, dá muito mais trabalho, dá... dá Embora dê muito trabalho... Não (os carros não chegam todos na mesma altura do ano), não, é faseado. Mas nós quando negociamos é por um período de 12 meses. Ou seja, eu neste momento fechei o negócio para as viaturas de 2017/2018, de Setembro a Setembro, é assim que funciona. (...) porque daqui a 24 meses o panorama poderá ser completamente diferente (...) temos muito mais agilidade. (...)

(...) (Buying Drivers) Autonomia e os preços das rendas, porque as locadoras estão a cotar muito alto (...) acaba por não compensar de maneira nenhuma. Se a diferença ainda fosse pouca, pronto era um *check* na nossa lista temos estamos mais verdes, não é. Mas a diferença é muito grande, as diferenças das rendas são muito grandes ainda. (...)

(...) E nós queríamos ter mais, mas não há no mercado neste momento que seja rentável (...) não é o carro ser caro, também é a renda, portanto o conjunto... imagine, eu consigo ter o meu *Seat Leon* por 180 €/mês, e eu um elétrico não tinha por menos de 400, 500, 700. Por isso é que eu digo, se a diferença fosse pequena até, não era por aí, se a diferença fosse pequena até optávamos por aí, só que a diferença é enorme! Neste momento o mercado ainda não está... as locadoras... tem mais a ver com o valor residual das viaturas eu acho. Portanto as locadoras estão a cotar muito alto e não compensa de maneira nenhuma. Aquele que nós temos, o único elétrico que nós temos é nossa propriedade. (...) os híbridos são *renting* (...).

(...) Por enquanto ainda não (é comprado carregadores elétricos), por isso, a não ser que a empresa vá ter montes deles, e aí teremos que repensar. (...)

(...) Depende (como vão a reuniões fora da empresa). Há sempre alguém que tem carro da companhia. Vocês viram o nosso edifício são 10 andares, somos quase 300 pessoas (...) Normalmente há uma pessoa que leva o carro. Eu ontem fui ao *AlfraPark*, e um colega levou o carro e eu fui com ele (...) Nós não utilizamos *UBER*, Taxis sim, *UBER* não. Por questões de segurança a nível internacional, porque repare uma coisa, nós quando se solicitamos um serviço da *UBER*, nós não sabemos se aquela pessoa está qualificada para conduzir um funcionário nosso, quanto muito um Taxi. (...) Nós temos uma preocupação muito grande com a Segurança, e na nossa empresa não se usa *UBER* precisamente por isso, porque não temos garantia de que a pessoa que está a conduzir aquele carro tem formação para estar a fazer o serviço. (...) Depende das circunstâncias. Depende onde é a reunião, se é perto se não é perto, se se leva 2 carros se se leva 3 carros, depende. (...)

(...) Não porque ainda não houve essa necessidade, ainda não sentimos essa necessidade. Exatamente porque fazemos esse *carsharing* cá dentro. (...) E para além disso, eu também tenho 1/2 viaturas no Pool, ou seja, estão aqui de parte, estão aqui guardadas, amanhã uma colega vai a uma reunião e já me pediu 'Posso levar a viatura que está aí para levar para uma reunião de manhã?' Pode. Entrego-lhe a chave, fica registado e ela leva a viatura. As viaturas do *pool* servem também para isso. (...)"

- **FMCG | [200; 500[Employees | 20 – 200 vehicles in the fleet | NO EVs**

“(...) Sim porque é futuro (se no futuro consideram ter veículos elétricos), e temos que ter essa consciência a X é uma empresa ecológica. A eletrificação do automóvel é uma certeza, cada vez mais as baterias de carros utilitários vão ter uma maior autonomia e cada vez mais as marcas estão a apostar na renovação do sistema de recarga. (...)

(...) Consideramos ter estações de carregamento quando houver carros elétricos, que justifique para os funcionários poderem carregar. (...)

(...) (caso a empresa necessite de outro tipo de transporte para se deslocar) neste momento, inclusive a ALD Automotive consegue fornecer esse serviço. (...) Utilizamos também táxi, Aluguer de Automóvel, Comboio, Avião,... Depende da distância, dentro do país utilizámos carro de aluguer, táxi, comboio; e no estrangeiro avião. (...)

(...) Não, nunca consideramos acho que nunca pensamos nisso talvez não seja prático. (*carsharing*) (...)"

- **FMCG | [200; 500[Employees | 20 – 200 vehicles in the fleet | NO EVs**

"(...) O gasto que temos com as viaturas vai a custos operacionais. Não vai aos activos das empresas. (...)Eu pago por um serviço (...)

(...) A pessoa não detém a viatura. A viatura é lhe alocada. Se for necessário podemos trocar a viatura entre os colaboradores (...)

(...) A viatura mais barata, raramente é a mais económica (...)

(...) *Plafond* por cargo que tem um valor de renda e uma tipologia de viatura e a partir daí procuramos as melhores alternativas no mercado (...) É a empresa que vê a vantagem em termos de TCO e em função disso definimos duas opções"; "Colaborador só escolhe uma das opções e a cor (...)

(...) Forçámos as opções. Ou híbrido ou híbrido. (...) Um Classe E 350 E ou um GLC 350 E (...) os funcionários não conhecem (...) Trouxemos um para experimentar e as pessoas gostaram (...)

(...) Têm vantagens fiscais. É o IVA, a tributação autónoma... (...) Só nos compensa para os segmentos mais altos (...) Dá outro tipo de imagem à empresa. (...)

(...) Pela autonomia que as viaturas têm, não sentimos que consiga responder às nossas necessidades. (...) Por ser a gasolina, tem custos mais elevados. São ligeiramente compensados pela parte eléctrica (...)

(...) Vamos instalar aqui [os postos de carregamento], (...) Vão ter o *plafond* de gasolina (...)

(...) Temos uma preocupação extrema com a segurança dos nossos funcionários (...)

(...) No turno da noite, temos um serviço de táxi que recolhe as pessoas (...)

(...) Há um imposto específico para os grandes consumidores que não estejam registados no SGCIE"

- **INSURANCE | [51; 200[Employees | 20 – 200 vehicles in the fleet | NO EVs**

"(...) Em regime de aluguer de longa duração" (= Renting = Operational Leasing); "Administração não tem *plafond* de kms, aos outros atribuímos um *plafond* de acordo com o segmento do utilizador (...) As viaturas da pool são utilizadas pelos colaboradores que não têm viatura própria e precisam de se deslocar em serviço (...)

(...) Combustível temos galp frota e via verde (...)

(...) Foi uma opção de gestão, (...) Vantagens financeiras são idênticas (...) Já tivemos viaturas próprias mas neste momento já não temos nenhuma (...) Ao fim dos 4 anos eram vendidas e adquiríamos outra (...)

(...) [Colaboradores] contatam com a LeasePlan primeiro e depois vêm no mercado. (...) Depois comunicam à LeasePlan e comunicam-nos a nós. (...)A última palavra é da nossa (...) Só Volkswagen Golf. Foi uma questão de robustez, fiabilidade... (...)

(...) Já contactámos a LeasePlan nesse sentido [eletrificação da frota], já foram feitos estudos
(...) Não um eléctrico puro, mas os híbridos (...)

(...) A única questão neste momento é a questão do valor da renda. São carros muito mais caros e não têm tanta autonomia (...) Não há tantos postes neste momento de recarga como há de abastecimento de combustível (...) É uma opção das pessoas (...)

(...) O parque onde estacionamos não tem essa modalidade (...) O parque não é nosso (...)

(...) Temos as viaturas da pool e é muito raro termos de alugar uma viatura (...)

(...) Envia um pedido e é-lhe atribuída uma viatura [Pool cars] (...) Desde que ele justifique e haja uma autorização leva a viatura de pool [para casa] (...) Se não, terá de se deslocar pelos próprios meios (...) A companhia paga o valor do passe (...)

(...) Fazemos um controlo de médias com de quilometragem. Como cada pessoa tem um plafond, as que ultrapassam têm de reembolsar a empresa na proporção do combustível.”

- **IT | [200; 500] Employees | 20 – 200 vehicles in the fleet | NO EVs**

" (...) Na política de compra dos carros há um máximo de CO2 que nós admitimos. É assim, os carros não podem ter uma emissão de CO2 superior a 130 gr/km, e isto, os 130 gr/km, (...) No fundo também acaba por ser um benefício que se dá às pessoas, mas não enquadra em termos de IRS e nada disso, como é *renting* não está no meu contrato, a qualquer altura eles também podem mudar isto, tanto que agora mudaram a política. (...)

(...) Alinhado com a política global da empresa (escolha dos veículos). (...)

(...) (vantagem em utilizar *renting* e não comprar os veículos) Isto para já é a melhor forma de contabilizar, a parte fiscal, a parte contabilística da coisa, um custo mensal, um FSE. Claro que isto tem uma parte fiscal, porque isto tem uns limites e não sei quê, uma parte que tem tributação autónoma (...). Isto como é uma frota, depois comprar obrigava aqui a ter nova gestão quase, para depois vendermos os carros (...) assim é a gestora de frota que trata disto, e quase todas as empresas fazem *renting* ou *leasing*. É menos uma coisa, e a parte para tratar é muito mais fácil, e depois estes *renting's* têm lá está o seguro, os seguros contra todos os riscos, as manutenções, troca de 8 pneus no período todo dos 4 anos de. É mais vantajoso sendo assim. (...)

(...) (quem gere a frota) É um fornecedor externo (...) não é preciso grande ligação porque eles têm o procedimento todo (...) a única coisa que o Diretor Financeiro por exemplo (...) faz é assina o contracto (...) mais nada, eles tratam de tudo tudo tudo (...) Eles é que gerem tudo. Eles é que fazem os contractos com as locadoras, com o *renting*, com... tudo! É tudo gerido por eles! E eles contactam diretamente os colaboradores. Eles só contactam aqui a área Financeira e os Recursos Humanos só para coisas muito pontuais, e eles fornecem *reporting* com os custos mensais para a Contabilidade e isso tudo, eles fazem tudo. (...)

(...) Política como é que é... Há uma grelha, que conforme o nível da pessoa e o nível vai desde o X até ao Y+, mas a partir de Y é o máximo de plafond, há plafond por mês. (...) E depois aquilo é um *renting*, o *renting* inclui seguro, troca de pneus, inclui as revisões, inclui isso tudo. E os contratos são de 4 anos, 100 mil km, se não me engano. (...)

(...) Híbridos imensos (...) porque agora quase todas as marcas fazem isso porque é por causa daquela questão do CO2. (...) uma carrinha (...) só que tem este sistema, que gasta menos e polui menos. (...)

(...) Eu ouvi mais no género pessoal, do género das pessoas fazerem *carsharing* por exemplo para ir para as universidades, ou até mesmo do género de pessoas que vêm trabalhar para

Lisboa e que moram fora de Lisboa, de fazerem *carsharing*... as pessoas particulares, não é, que combinam (...)

- **IT | > 200 Employees | 21 - 200 vehicles in the fleet | NO EVs**

"(...) Temos principalmente frotas de passageiros, temos poucas viaturas comerciais e as que temos estão alocadas a projetos (...) metade são benefício e metade porque é necessário à sua função (...) Temos 142 viaturas (...) Há 4 anos alterámos o nosso modelo de gestão e optamos por passar a ter só duas marcas (...) Opel e depois BMW para cargos de direção (...) Todas podem ser utilizadas a nível particular, não há restrição por exemplo ao fim de semana tirando as comerciais (...) temos um contrato de aluguer operacional por isso não podem haver pessoas nomeadas mas não costumam haver trocas, cada funcionário é responsável por um carro (...) Fazemos entre 90000 e 120000 km em 4 anos em média (...) Negociamos diretamente com a marca e depois vamos às locadoras ver quais têm o melhor preço e neste momento a Leaseplan é com quem temos o maior número de contratos mas temos também ALD Automotive e Arval (...) As vantagens são que não estamos a incrementar o nosso *asset* e depois porque poupamos recursos e no final do contrato trocamos, não temos de estar a pensar em vender a viatura (...) acho estranho ainda haver muitas empresas que têm as suas próprias viaturas (...) ainda por cima como temos carros de gama alta, permite-nos pagar o valor do carro menos o valor residual o que quer dizer que as rendas são mais apelativas, ter melhores carros e deixar as pessoas mais satisfeitas (...) Os carros comerciais têm todos logotipos (...)

(...) O preço é um fator bastante importante mas para além do preço avaliamos o status, não queremos que os técnicos vão a um cliente de BMW porque pode passar a ideia de que a nossa empresa é riquíssima (...) em geral queremos que as pessoas gostem dos carros que utilizam (...) Já que não podem escolher o carro, deixamos que escolham os extra (...)

(...) Valor do carro, manutenção (...) substituição dos carros é com outra empresa (...) seguro também está fora do aluguer operacional porque para nós é mais vantajoso (...) gestão de combustível negociamos diretamente com a GALP e com a PRIO, também é melhor para nós e os pneus também está fora do contrato porque assim pagamos só o que necessitamos (...) Com a análise que fazemos também temos em atenção a fiscalidade nomeadamente a tributação autónoma e por isso limitámos o valor máximo do custo de venda da viatura para 25,000 euros para uma categoria e 35,000 para outra (...) e também temos em atenção as emissões CO2 (...) neste caso é o nosso departamento de qualidade que faz uma análise (...)

(...) É assim aquilo que foi feito foi uma coisa muito recente (...) atualmente como disse não temos veículos elétricos mas é um tema que estamos a ponderar (...) Já pedimos uma análise à LeasePlan (...) poderão ser introduzidos elétricos ou *plug-ins* (...) vamos ter de analisar novamente mas neste caso penso que teria de passar por uma decisão do colaborador e não da empresa (...) teria um impacto para nós (...) a nossa empresa já prima por ser *green* e as nossas políticas internas também são verdes por isso penso que seria positivo termos veículo elétricos (...)

(...) Isso é um problema um bocadinho ainda mas é um problema que também já está encaminhado porque já falámos com o senhorio e ele também já nos perguntou se queríamos postos de carregamento (...) já existe um mas está destinado a uma viatura (...) o senhorio perguntou-nos, ok mas quantas viaturas elétricas é que pensam que vão ter? e essa informação ainda não tenho disponível para lhe dar (...) e nós somos os únicos, há outras entidades que também já abordaram o senhorio nesse sentido (...) o problema maior aqui ainda será em casa para as pessoas que não tenham garagem ou que não tenham um posto de abastecimento perto (...) também poderiam carregar aqui mas teríamos de ter imensos postos porque realmente

temos muitas viaturas (...) para cliente não porque só temos um lugar de visitas mas de resto não temos lugares para clientes e nós é que vamos ao cliente, não é ele que vem cá (...)

(...) Têm todos um cartão da GALP e têm um acesso via pin telemóvel para abastecer na PRIO e todos os colaboradores têm um plafond correspondente à sua categoria (...) trimestral e que é avaliado pelo chefes e se o valor for ultrapassado terão de pagar (...) mas pode ser usado para pessoal e serviço (...) mas nem sequer tem o nome da pessoa, o cartão é da viatura (...)

(...) Nós deslocamo-nos muito de avião para o estrangeiro mas aqui em Portugal utilizam as viaturas próprias (...) se for aqui em Lisboa possivelmente utilizam o táxi mas mesmo para ir ao Porto levam o carro, pontualmente podem ir de comboio mas é muito raro (...) Se precisarmos de um modelo diferente recorremos a um rent-a-car! Já aconteceu para ir a reuniões ou assim alugámos aquelas carrinhas de 9 lugares ou por vezes quando vem alguém de fora também (...)

(...) Que eu tenha conhecimento não (...) não sei se algum colaborador usou carsharing mas certamente se o fez não deve ter carro da empresa (...) também é uma coisa recente (...)

(...) Painéis solares não (...) As instalações não são nossas, temos de nos adaptar às condições do prédio (...)

(...) O nosso fornecedor de energia é a EDP (...)"

- **JUSTICE & LAW | [200; 500[Employees | <20 vehicles in the fleet | 1 - 5 EVs**

"A nossa frota tem neste momento 19 viaturas, sendo que domina a marca Mercedes (...)

(...) Marcas tipicamente premium, gama média alta (...)

(...) As viaturas servem para (...) as pessoas se deslocarem no âmbito das reuniões que têm com os clientes, por isso normalmente percorrem distâncias curtas (...)

(...) Estão todas as viaturas em renting. Não queremos ter a propriedade das viaturas, nem chatices com a gestão da frota, nem levar as viaturas à oficina (...)

(...) Não temos de gerir o valor residual das viaturas no final de contracto e trocamos as viaturas a cada 4 anos (...)

(...) Não há propriamente uma alocação específica a uma pessoa, se bem que tradicionalmente as pessoas acabam por utilizar o mesmo veículo (...)

(...) As viaturas vão ser utilizadas por sócios e portanto acaba por ser um pouco definir determinadas categorias (...)

(...) Nunca considerámos veículos eléctricos porque ainda não há provavelmente soluções que garantam questões de autonomia e de fiabilidade de viaturas. Não é propriamente uma tecnologia que já esteja completamente afirmada no mercado. Nós somos um pouco conservadores aqui e portanto continuamos com os motores de combustão. O híbrido foi uma oportunidade que surgiu motivada também pela questão fiscal (...)

(...) O híbrido foi uma oportunidade que surgiu motivada também pela questão fiscal (...)

(...) Tenho ideia de que nunca foi colocada a questão de instalar postos de carregamento (...)

(...) Assinámos um protocolo com a uber há pouco tempo para facilitar a gestão e o pagamento do serviço (...)

(...) Começámos a utilizar a Uber porque foi o primeiro a aparecer com uma solução business (...)

(...) A DriveNow ainda pratica preços muito elevados para businesses e não cobre muitas áreas de Lisboa (...)

(...) Nunca pensámos muito em energias renováveis (...)

(...) A empresa por vezes paga os transportes aos funcionários se estes estiverem a trabalhar fora do horário normal de trabalho. Mas não há propriamente uma medida definida (...) é uma questão de bom senso (...)

(...) Temos 93 colaboradores e mais ou menos 70 usam os transportes públicos (...)

(...) Temos soluções e temos um programa muito activo de responsabilidade social. Uma delas é exactamente sobre eficiência energética. E temos tomado muitas medidas nomeadamente a redução do consumo de papel, instalação de LEDs, reciclagem, instalação de um sistema centralizado de ar condicionado para evitar o desperdício energético nessa matéria (...)

(...) EDP é o nosso fornecedor de energia (...) é também o nosso principal cliente."

- **PHARMA | [50;200[Employees | 20 – 200 vehicles in the fleet | NO EVs**

(...) Já! Ainda agora estou a avaliar a compra de 50/60 carros. Mas ainda não compensa. Não compensa a nível financeiro, ainda não fazem quilómetros suficientes para virem a ser utilizados numa frota comercial. Apesar de terem algumas bonificações a nível de impostos, em Portugal é sempre um risco muito grande porque o Estado pode decidir a meio tirar as bonificações e depois há custos muito grandes. Mas não vamos avançar para aí. (...)

(...) Nós temos comerciais que andam a vender que andam de carro todo dia fazem muitos quilómetros, e as baterias dos carros elétricos ainda são muito insuficientes. Provavelmente a que terá mais autonomia anuncia com 400 km, mas depois dificilmente lá chega. (...)

(...) Se eu atribuir um carro elétrico tenho que ter condições na empresa, mas tenho que saber que esse colaborador também tem condições em casa, ou junto a casa. (...)

- **REAL ESTATE | [51; 200[Employees | 20 – 200 vehicles in the fleet | NO EVs**

"(...) Quando lhes é atribuída uma viatura da empresa, as pessoas têm liberdade para escolher o carro que pretendem (...)

(...) Temos 4 que denominamos de pool car que estão ao serviço de todos para que os usem no âmbito profissional. Se precisam de ir a uma reunião, em vez de irem de táxi, vão de carro (...)

(...) [EVs] Se calhar foi algo que nunca teve na equação. (...) Não tenho conhecimento

(...)[EVs] Sei que são carros um pouco mais caros que os outros. Por isso acabam por limitar a escolha de acordo com o plafond (...)

(...) O edifício não é nosso. Portanto seria algo que o proprietário do edifício é que poderia responder. Não é uma decisão que passa por nós. (...)

(...) Podem usar o taxi e depois apresentar as despesas (...)

(...) Acabámos com os copos de plástico, fazemos a separação de lixo"

- **RESTAURANTS & DELIVERIES | [500; 2000[Employees | 21 - 200 vehicles in the fleet | NO EVs**

"(...) Temos 98 viaturas e são utilizadas tanto para uso pessoal como para serviço (...) tanto para longas distâncias como para curtas (...) são alugadas (...) utilizamos a Leaseplan, ALD

Automotive e a Arval (...) Está tudo incluído no contrato por isso é um descanso para nós(...) e temos uma oferta muito superior ao que seria se fossemos nós a tratar de tudo (...) Temos carros espalhados por todo o país por causa da nossa atividade e é mais fácil assim (...) Os contratos que fazemos para as viaturas costumam ser de 48 meses e 160000km mas também podem ser de 54 ou 36 meses dependendo da utilização que prevemos para a viatura (...) Sim, temos uma garagem que dá para 110 trabalhadores (...) O preço nunca foi um dos principais fatores (...) apostamos na diferenciação por isso é que também queremos incluir veículos elétricos e híbridos plug-in (...) Para além do valor da renda consideramos o TCO, onde incluímos os níveis de CO2, os níveis de consumo, a segurança, a tributação autónoma (...) Para a escolha dos modelos todos os anos revemos a frota e vemos se existe alguma viatura que possa ser descontinuada (...) e temos de ter a certeza que podemos manter a mesma renda ao longo do ano (...) Nós temos 6 escalões e dentro de cada escalão temos 3 modelos e o colaborador pode escolher um deles (...)

(...) Já realizámos um estudo porque queremos que os veículos elétricos se tornem realidade em 2018 (...) fizemos também uma experiência com colaboradores em que tiveram a oportunidade de experimentar veículos elétricos (...) percebemos também qual o perfil dos colaboradores que poderiam ser integrados neste tipo de viaturas (...) e já recebemos feedback de outras empresas que nos disseram que o custo de carregar é mesmo reduzido (...) Um dos principais problemas dos elétricos é que ainda não existem postos de carregamento suficientes e por exemplo na A5 há filas de espera (...) os postos de carregamento precisam de manutenção (...) e a autonomia ainda não é a ideal (...) Já temos um posto de carregamento num restaurante em Guimarães mas queremos que todos os restaurantes venham a ter e também já falámos com o senhorio para que fossem instalados postos aqui na garagem do escritório (...) Ainda não sabemos como funcionará com o carregamento, temos de analisar e ver a questão do operador (...) para as viaturas que temos agora os colaboradores têm 3 cartões, GALP frota, BP e Repsol e utilizam o que quiserem consoante os descontos que possam encontrar (...) Normalmente usamos sempre os carros da empresa mesmo quando temos eventos organizamo-nos e tentamos ir todos nestes carros (...) tiramos mesmo o máximo de partido dos carros da empresa (...) às vezes também poderemos utilizar o comboio (...) Os horários são flexíveis por isso há pessoas a entrar às 8h e sair às 17h, 9h às 18h e 10h às 19h por isso quando é preciso há sempre alguma alma caridosa que consegue dar boleia (...) Alguns restaurantes utilizam painéis fotovoltaicos (...) também utilizamos as águas pluviais para regar os jardins e o óleo resultante dos restaurantes para abastecer os carros (...)"

- **RETAIL | [2000; +[Employees | >650 vehicles in the fleet | NO EVs**

“(...) Temos vários tipos de viaturas. Temos a frota de serviço: os carros que estão ao serviço das pessoas para o trabalho e os carros que os diretores/administradores têm. São todos carros ligeiros, normais, e nenhum deles elétrico. São apenas permitidos carros a gasóleo e acho que a partir de um determinado nível se pode escolher carros a gasolina.(...)

(...) A transportadora faz a manutenção toda e não temos de nos preocupar com isso e nós tratamos da gestão da frota. Eles é que são especialistas em formar os condutores. (...)

(...) Cada trabalhador tem um nível e pode escolher um veículo dentro de um leque de opções. E depois temos os carros de serviço. Se eu agora precisasse de ir trabalhar no Porto, teria direito a um carro para fazer as deslocações. Esse carros também têm um certo patamar e são escolhidos, normalmente comprados em bolo, para que tenham preços mais baixos. A escolha dos camiões tem características mais técnicas, tais como a capacidade de carga, ser

refrigerador e o limite de emissões. Exigimos que os camiões tenham uma idade inferior a 6 anos. (...)

(...) Por motivos de custos essencialmente, os carros que podem ser escolhidos são todos a gasóleo. Para além disso os nossos camiões fazem vários quilómetros por dia em sistema de rotatividade. Os carros elétricos ainda estão muito longe de oferecer a fiabilidade que se quer num carro desta natureza. Por uma questão de potência e sobretudo autonomia. O custo é elevado, o payback é duvidoso, e mesmo que consigamos assumir que ao fim de 3/4 nos recuperamos o diferencial do investimento, há dois temas muito operacionais, que são a autonomia e os meios para carregar. (...)

(...) Temos dois ou três centros de escritórios onde poderíamos implementar postos de carregamento elétricos. (...)

(...) Temos os carros de serviço que são utilizados por colaboradores diferentes, quando precisamos de uma viatura para nos deslocarmos, podemos recorrer a estas viaturas. (...)

(...) Sim, se ficarmos a trabalhar até mais tarde e já não houver transportes a empresa oferece os transportes para casa. (...)

(...) Há muitas iniciativas de reutilização de desperdício alimentar, poupança de água e energia nas lojas, etc. Por exemplo agora substituíram as lâmpadas todas por LEDs."

- **TAXIS | [11; 50[Employees | < 20 vehicles in the fleet | NO EVs**

"(...) Temos 10 taxis, todos a diesel que circulam na área de Lisboa (...) temos veículos de 2007 mas também de 2017 (...) temos trocado a cada 10 anos (...) Já tivemos carros a gás natural mas desistimos porque tinham uma autonomia baixa, de 120 km quando os carros fazem uma média de 250 km por dia e os postos de abastecimento eram poucos, gostávamos, era mais económico mas devido à falta de abastecimento (...) e limitações de carregamento ao fim de semana, desistimos (...)

(...) Estamos com vontade de abordar outro tipo de viaturas nomeadamente as elétricas que também os que nos faz ainda não ter é a autonomia. Estamos a aguardar que existam mais postos porque é um carro de trabalho que tem de ser abastecido todos os dias (...) Sem dúvida uma das maiores condicionantes dos veículos elétricos é a autonomia e os postos de abastecimento (...)

(...) Trabalhamos neste momento com a Volkswagen e Citroen e vamos apostar mais em Citroen porque é um carro mais económico e tem uma manutenção mais económica também. Costumamos ser fieis porque quantos mais carros mais facilmente temos stock de material, temos mais descontos e facilidades dentro da marca (...) Os carros são todos nossos, já tivemos leasing mas não era muito fácil para estes carros que são táxis, era muito caro e ao comprar temos o reembolso do IVA por isso é muito melhor (...)

(...) Os táxis estão sempre a trabalhar e estamos um bocado apreensivos em mudar porque não sabemos como é que os custos de manutenção dos elétricos vão ser e como é que as coisas vão evoluir (...) estamos à espera que mais pessoas utilizem para termos mais feedback (...) Já ouvimos dizer que os carros já estão melhores e que têm mais autonomia mas também quanto mais autonomia mais caros são (...) Estamos a ver qual a reacção das pessoas mas sem dúvida que os carros elétricos são o futuro! (...) O carro elétrico tem mais possibilidade de se impor nas próximas décadas face aos diesel ou gasolina (...)

(...) Avaliamos não só o preço mas também a durabilidade. Por exemplo os Dacia seriam mais baratos mas tentamos arranjar um meio termo preço-qualidade para dar um preço harmonioso (...) Os táxis só têm licença para trabalhar em Lisboa. Só pagamos da residência

para trabalho e vice-versa, com os elétricos seria a mesma coisa (...) Cada trajeto são relativamente poucos km porque o mais longe que pode fazer é ir a cascais por isso mais ou menos 30 km. Mas o mais frequente são curtas distâncias (...)

(...) Não porque das energias que poderíamos ter seria a solar mas no nosso espaço não seria fácil, não há espaço. Dentro de Lisboa rodeado de casas não deve dar até porque rodeado de prédios perde-se as sombras (...) Em 10 motoristas, dois utilizam transportes, os outros têm carro (...)"

- **TRANSPORTATION & SHIPPING | [500; 2.000[Employees | > 650 vehicles in the fleet | NO EVs**

“(...) Comprar uma viatura na Holanda é completamente diferente de comprar uma viatura para a Serra da Estrela (...) ou para a Guarda. (temos que estar adaptados ao tempo) temos que estar completamente. Porque temos temperaturas muito frias (...) não precisas de janelas muito grandes, e não precisas de um motor muito forte. Porque aquilo não te obriga a grande esforço, porque aquilo é plano. Enquanto que em Portugal, imagina (...) vais fazer uma carreira para 'um sítio muito alto,' ela (camioneta) não tem motor para aquilo. (...) há sítios muito mais frios que precisam de outro tipo de viaturas (...) e que sejam adaptadas para o nosso clima. (...)”

(...) O futuro é elétrico não é?! Não é hidrogénio, não é nada disso, é elétrico não é? Agora os preços são altíssimos ainda e as autonomias são muito pequenas. A grande questão, como toda a gente sabe é as autonomias e o preço. Cada vez mais as empresas estão a apostar, as empresas... os fabricantes, estão a apostar na redução de custo (...) para depois darem um preço, porque depois não se consegue comprar as viaturas! Como tu deves saber, na Dinamarca/Noruega o Estado está a dar grandes incentivos por causa dos elétricos, porque mesmo lá as pessoas não é fácil as pessoas comprarem um carro com mais 20 ou 10.000 ou não sei (€), quanto mais aqui num país mais pobre, não sei! (...) A solução por esta via é o híbrido. Também já há. Mas para o autocarro é muito complicado. Eu acho que há muitas empresas mesmo as marcas estão numa ‘lufa lufa’ muito grande para criarem uma coisa que seja apetecível para as empresas no fundo comprarem com um custo um bocadinho mais alto. Mas isso também tem que haver um empenho muito grande do estado, porque o estado tem que alavancar essas soluções mais verdes, pelo menos, para que seja viável no mais curto espaço de tempo. (...)”

(...) Parece que seja ao mais viável (híbrido) (...)”

- **TRANSPORTATION & SHIPPING | [500; 2000[Employees | 20 – 200 vehicles in the fleet | NO EVs**

“(...) Temos viaturas de função e operacionais (...)”

(...) Operacionais são de acordo com as necessidades que há na altura. Pode ser uma carrinha, de caixa aberta...”; “Os de função são atribuídos aos colaboradores e por norma são todos da mesma gama. A pessoa só escolhe a cor”

(...) [EVs] Foi um projeto que nunca chegou a avançar. (...) Levantaram-se outras prioridades (...) Autonomia e preço (...) Também precisávamos do aval da empresa-mãe (...) Autonomia hoje em dia já seria mais fácil de contornar (...)

(...) Teria de criar um local de estacionamento próprio para isso (...) O nosso estacionamento pertence a outra empresa (...) Teríamos que negociar com eles (...)

(...) Por norma utilizamos a viatura de serviço, ou utilizamos o nosso serviço de shuttle (estafeta) (...) A carrinha é nossa e o estafeta faz parte da empresa de segurança (...)

(...) Diria que 85% usa viatura própria”

- **TRAVEL | [500; 2000[Employees | 21 - 200 vehicles in the fleet | NO EVs**

“Ainda não temos veículos elétricos na frota. Já ponderámos, mas ainda não era competitivo. (...)

(...) Está tudo incluído neste tipo de planos, desde pneus, riscos, embates... Enfim não temos custos de manutenção. (...)

(...) Em 30 e tal carros são dos gerentes de loja. Na estrutura do Porto temos uma garagem alugada. Temos também um outro parque de estacionamento enorme. (...)

(...) O fator económico é muito importante, bem como não ter custos de manutenção.; “É algo entre custo de manutenção e preço base mais competitivo. (...)

(...) É fazer uma pesquisa muito forte. Em função do grupo funcional que vai adquirir o carro, temos um certo número de propostas de carros e procuramos o mais barato.; “O melhor negócio para nós é comprar carros que vão ser substituídos no mercado (...)

(...) Ainda não temos veículos elétricos na frota. Já ponderámos, mas ainda não era competitivo. Estamos num processo de alterações na gestão da frota para aumentar a sua eficiência. Em Linda-a-Velha temos cerca de 500 colaboradores num escritório e estamos a pensar ter uma pool de carros onde gostaríamos de ter um ou dois veículos elétricos. (...)

(...) Há um problema nos carros elétricos que é a bateria. Temos dois modelos, ou compramos a bateria e o carro deixa de ser competitivo, ou não compramos bateria, descontamos no IVA, mas depois alugamos a bateria. Só que o aluguer da bateria era maior do que o preço que gastava no gasóleo para um outro carro. (...)

(...) A regra é partilha de carros e carros da empresa quando precisamos de nos deslocar para algum lado. Quando é muita gente utilizamos autocarros. (...)

(...) Estamos a pensar instalar microgeração. Não tenho conhecimento de outras iniciativas para além da microgeração e da implementação de veículos elétricos.”

- **OTHER SECTOR | [1; 10[Employees | <20 vehicles in the fleet | 6 - 10 EVs**

“Hoje para nós, a nossa escolha da mobilidade elétrica não é um fator de rentabilidade extra, muito pelo contrário. Mas traz-nos outras oportunidades, como custo de manutenção reduzido e gestão mais eficiente da operação. No entanto, acreditamos que com o tempo, provavelmente em breve, esta balança vai inverter-se. (...)

(...) Os nossos veículos são utilizados para promover a mobilidade elétrica. Nós oferecemos serviços tais como passeios turísticos, bem como ativamos marcas de empresas. A ideia é juntar num só negócio carros elétricos, redes sociais, e conectividade num geral. (...)

(...) Nós não teríamos preocupação nenhuma durante o dia se tivéssemos carros a combustão. Um depósito daria para 3 ou 4 dias. Para além disso também teríamos mais negócio porque poderíamos fazer tours muito mais longas: para Sintra, Cascais, etc. (...)

(...) Ninguém conhece bem os veículos elétricos, nem mesmo aqueles que os estão a desenvolver. (...)

(...) Em média gastamos 50€ por cada revisão e apenas vamos lá uma vez por ano. (...)

(...) Tenho de confessar que o modelo que queríamos comprar era o Citroën e-Mehari, mas como o carro não chegou a Portugal e queríamos mesmo entrar no mercado em 2017, optámos pelos twizy, por serem elétricos, bem sucedidos em Portugal e acessível em termos monetários. (...)

(...) Subcontratamos uma garagem para fazer os carregamentos dos carros. Já usamos postos de carregamento públicos mas com a reabilitação dos postos de carregamento públicos estão a retirar-nos a possibilidade de carregar os twizy porque é um carro que carrega em trifásica. No entanto, se quisermos avançar com a instalação teremos de contratar uma empresa especializada em postos de carregamento elétricos. (...)

(...) Habitualmente utilizamos o Zoe. Quando não é possível muitas vezes uso metro ou Uber. Às vezes utilizo o metro porque é mais rápido devido ao trânsito em Lisboa e o Zoe posso estacionar sem pagar parquímetro. (...)

(...) Nós oferecemos serviços de carsharing, faz sentido que também utilizemos. De momento um carro é suficiente para todos nós, não faz sentido ter mais, gasta-se mais dinheiro e o carro fica parado o dia inteiro.(...)

(...) Durante a noite grande parte da energia fornecida para os carros em Portugal é energia renovável. (...)

(...) Acreditamos que o futuro andar de mão dada com a sustentabilidade e nós somos uma empresa pelo ambiente. É por isso que investimos neste negócio de mobilidade elétrica. Para além disso tentamos utilizar o mínimo de papel possível e evitamos desperdiçar material. (...)

(...) As baterias que nós utilizamos são de lítio, não têm chumbo. Ao nível da reciclagem isso é uma responsabilidade da marca, não é nossa, porque apenas alugamos as baterias. (...)

(...) Está a faltar vários postos de carregamento disponíveis pelo país."

- **OTHER SECTOR | [10; 50] Employees | <20 vehicles in the fleet | NO EVs**

"(...) São opções da administração. (...) A propriedade de um veículo implica sempre uma transação no final, tem um tipo de custos completamente diferente de um aluguer de longa duração: manutenção, gestão da viatura. (...). Porque assim as empresas não adquirem a propriedade do veículo. Depois teriam um certo tempo de vida e têm custos completamente diferentes de um aluguer de longa duração. Porque há manutenção, gestão de frota... É muito mais fácil porque assim quem faz a gestão da viatura é a locadora e nós só temos de tratar da utilização. (...)

(...) Normalmente são decisões que estão ligadas aos cargos das pessoas. A empresa tem definidos os cargos das pessoas e os veículos que lhes estão associados em termos de valor do veículo que podem selecionar. (...)

(...) Foi algo que considerámos principalmente numa altura em que foram criados uma série de incentivos fiscais. Abordou-se essa questão na altura, já foi para aí há uns 2 ou 3 anos, mas esses veículos ainda tinham preços bastante elevados. (...) Ainda rondavam os 50.000€ para cima. (...) Com a situação atual penso que é uma hipótese que vai acabar por se pôr. (...)

(...) Sempre que carrega o carro, está a fazer com que a térmica de Sines, que está a queimar carvão, funcione (...)

(...) Não estamos a instalar em termos de execução física já no terreno (...) Está em estudo a instalação de postos de carregamento (...) Vamos instalar privados (...) Temos tido vários pedidos. É quase diário (...) Já andamos nisto há mais de 2 anos (...)

(...) A instalação destes postos é muito complexa e depois obriga-nos a ser os operadores, coisa que ninguém quer ser. (...) Não conseguimos convencer os operadores a colocar os seus postos aqui porque entendem que ainda não têm um volume de utilização que justifique. E essa é a dificuldade básica que existe hoje. (...) Como é que faturamos? (...)

(...) Já há pessoas com carros eléctricos no parque. Já que está a aumentar a procura vamos tentar instalar um posto de carregamento ou dois aqui no parque, mas depois deparamo-nos com a dificuldade de convencer um operador a instalar. (...) Estes postos de carregamento são para utilização das nossas empresas. (...) Os trabalhadores pedem-nos para instalarmos postos de carregamento.

(...) Nós instalámos o carsharing aqui mas depois acabou por não resultar. Instalámos o posto mobishare mas depois não resultou e acabámos por descativar. Para aí à dois anos (...)

(...) Este parque é muito mal servido em termos de transportes públicos. De um modo geral quase todas as pessoas trazem carro. Se calhar talvez 80% ou 90% das pessoas que trabalham neste parque."

- **OTHER SECTOR | [10; 50[Employees | NO FLEET**

"(...) Não temos frota por motivos de otimização mas não lhe consigo dizer muito mais (...) não sei quando viremos a ter carros (...) É mesmo com o carro do colaborador ou por exemplo o comboio para ir ao Porto porque nós temos clientes no Porto e em Braga (...) mas normalmente é mesmo o carro (...) ou avião do Porto para Lisboa (...) táxi também para distâncias mais curtas (...) Uber também já utilizámos mas não tanto por causa da questão do contribuinte e tudo mais (...)

(...) Carsharing nunca utilizámos (...) poderia ser uma hipótese, nunca excluímos mas acho que seria só mesmo em último caso, nós normalmente quando vamos para um cliente já temos definido qual o percurso que vamos fazer, como é que vamos fazer, se vamos precisar de táxi então acaba por não ser tão eficiente porque lá está não temos esses carros em todo o lado (...) alguns clientes não são tão no centro da cidade e acaba por não ser uma solução eficaz (...)

(:) Temos dois lugares mas são alugados (...) aliás um nosso e outro é alugado (...)

(...) Nós por acaso já falámos, acho que como toda a gente, de carros eléctricos e tudo mais mas nunca considerámos carregadores eléctricos porque pronto não temos e acho que clientes não sei dizer se algum tem (...)

(...) Não temos nenhuma energia renovável mas é num prédio por isso não sei se será fácil (...)

(...) É a EDP (...) não houve assim uma razão muito específica, a EDP é a EDP (...) é mesmo pelo conhecimento e pelo nome também."

- **OTHER SECTOR | [51; 200[Employees | NO FLEET**

"(...) Nós somos uma startup e para nós significaria um grande investimento ter uma frota mesmo que fosse renting (...) Ainda não compensa porque temos outras áreas como o marketing onde temos de investir o dinheiro (...) Não me parece que tenhamos no futuro (...) Nós subcontratamos para as entregas e para reuniões vamos geralmente de uber ou automóvel do colaborador e a empresa ajuda nos custos e também usamos o avião para o estrangeiro (...) Não temos garagem, as pessoas estacionam onde houver lugar (...)

(...) Nunca ouvi falar de carsharing aqui na empresa, se alguém já utilizou não sei (...) há casos em que é melhor carsharing porque mesmo para transportar coisas dava jeito (...)

(...) Não, não temos nada de energias renováveis porque esse tipo de coisas ainda não é grande preocupação para nós (...) Dos 110 trabalhadores que temos em Lisboa, a grande maioria vai de transportes (...) diria que menos de 10 usam o próprio meio seja mota ou carro (...) Acho que é a EDP (...) não tenho a certeza absoluta mas há-de ser a mais barata."

- **OTHER SECTOR | [51; 200[Employees | 21 - 200 vehicles in the fleet | NO EVs**

"(...) Mais de 70% são ligeiros de mercadorias para os técnicos que andam na rua para dar assistência aos nossos clientes, os outros são ligeiros de passageiros para técnicos de venda e quadros superiores da empresa (...) Volkswagen Scadi e algumas Renault Kangos, Hyundai 20, 30, Seat Leon, Nissan Qashqai e Ibizas (...)

(...) Temos de tudo, quem percorra muitas distâncias e quem percorra curtas (...) As viaturas são atribuídas a trabalhadores específicos (...) Sim nós gerimos a frota toda (...) os carros são de uma empresa de renting mas eles apenas fazem o aluguer, nós gerimos tudo o resto (...) Depende dos quilómetros mas de 3 em 3 ou 4 em 4 anos renovamos (...) Os colaboradores levam-nas para casa-emprego, fins de semana tudo o que é ligeiros de passageiros os trabalhadores podem ficar com as viaturas (...)

(...) O principal é o preço depois tem a ver com o interesse em determinado modelo em determinada marca (...) Dizemos ao renting o que queremos, a decisão está tomada, é uma decisão interna (...) avaliamos o mercado (...) Elétricos ainda não, num futuro próximo mas de momento não(...)o preço das viaturas e a autonomia são mesmo um entrave (...) Sustentabilidade, preocupamo-nos com a sustentabilidade (...) e o preço da energia é mais barato que os fósseis (...) Não temos em cima da mesa datas mas quando o mercado tiver suficientemente maduro para tal (...) Seria adotada a política atual (...) usar ao fim de semana (...) cada pessoa tem o cartão GALP frota que tem de justificar (...) temos de ver como funcionaria para os elétricos (...) Usamos sempre os nossos carros (...) nunca recorremos a outro tipo de transporte (...) Temos a nossa frota não precisamos de estar a ter custos adicionais com carsharing (...)

(...) Quando até mais tarde têm os transportes normais ou vão com colegas (...) 2% ou 3% utilizam transportes públicos (...)

(...) Sim nós somos uma empresa certificada ambientalmente portanto preocupamo-nos com essa área (...) iluminação led, fazemos trajectos que tenham o menor gasto possível de combustível, temos programas de poupança de papel, impressões (...)

(...) Neste momento é a Endesa (...) pelo preço mas todos os anos abrimos um concurso e o que apresentar o melhor preço ganha(...)"

- **OTHER SECTOR | [51; 200[Employees | <20 vehicles in the fleet | NO EVs**

"(...) Temos 8 viaturas (...) Não temos veículos elétricos mas devíamos ter (...) e queremos ter! (...) Temos veículos de classe média, média baixa (...) desde Peugeot 2008 ao 308, depois temos Renault Captur, Fiats, Ibiza, Quashqai (...) São utilizados porque temos atividades pelo país inteiro! Temos responsáveis que têm de se deslocar pelo país nas áreas de coordenação, formação e na área comercial também (...) Como temos a frota toda a renting com a Leaseplan nós estamos condicionados pela quilometragem e neste momento estão afetos a pessoas mas o que nós queremos é que passem a rodar porque há pessoas que fazem mais viagens e outras menos (...) Metade dos carros distâncias longas e os restantes distâncias mais locais (...) Tudo incluído no contrato. Nós só pagamos a mensalidade e praticamente é isso (...) Por um lado questões financeiras ou seja o renting não se reflete nem no ativo nem

no passivo da empresa por isso é relevante em termos de demonstrações financeiras e pessoalmente para mim que sou empresário tento facilitar ao máximo as coisas e neste caso realmente não temos de nos preocupar com nada o que é muito prático (...) E não tem um investimento grande, não temos de recorrer ao crédito (...) Estamos a recorrer também a viaturas de outra dimensão para transportar crianças e pessoas em carros, carrinhas de 7 lugares ou até mais e nesse caso vamos provavelmente recorrer à colocação de logos nessas viaturas (...) Trocamos de 4 em 4 anos (...)

(...) É o critério do preço e da oportunidade de negócio...quando optei pelo renting foi sempre em função de campanhas de promoção (...) Tem mais a ver com as oportunidades que aparecem (...)

(...) Sim, sim, sim! Já há dois anos que ando a ver preços e marcas de carros elétricos mas ainda não aconteceu porque esses carros não têm propostas boas e porque a autonomia não é a suficiente para poder ir mais longe (...) agora para as pessoas que não se deslocam muito é uma boa hipótese (...) Penso que em 2019 conseguiremos fazer compras ou alugueres de viaturas elétricas (...) vão acabar um ou dois contratos e deveremos mudar para elétricos (...)

(...) Sempre que vamos para as grandes cidades utilizamos comboio (...) Consideramos utilizar carsharing. É uma solução de mobilidade interessante mas tenho de perceber melhor como é que isso funciona para empresas (...) sei que existem duas ou três empresas em Lisboa e estou a acompanhar o processo (...) Só os estagiários é que utilizam transportes públicos, de resto todos têm viaturas próprias (...)

(...) EDP porque é o mais normal e habitual mas estamos numa fase em que queremos analisar o mercado e aí vai depender das condições (...)"

- **OTHER SECTOR | [200; 500[Employees | 21 - 200 vehicles in the fleet | NO EVs**

"(...) Temos 103 viaturas a nível comercial (...) todas peugeot beepers e todas a diesel (...) Tudo ao serviço da empresa, deslocações até aos clientes, para nível particular não (...) O nosso grupo tem várias empresas e algumas viaturas estão atribuídas a funcionários específicos, outras não, vão rodando (...) Algumas percorrem muitos quilómetros entre várias cidades, outras só nas localidades (...)

(...) Utilizamos a Leaseplan em aluguer operacional (...) Seguro, manutenção, impostos tudo a cargo deles, no geral é isso (...) As viaturas têm muito desgaste por isso não era vantajoso ter viaturas próprias isso representaria mais custos para a empresa, não compensa (...) A maior parte deles são 36 meses com um limite de 200 000 km. Chegando a esse limite de quilómetros o contrato cessa automaticamente e temos de devolver a viatura (...) Temos sempre parque de estacionamento em todos os edifícios (...)

(...) O primeiro é o preço e depois a viatura em si. Mas o mais importante é mesmo o preço, comparamos preços e características das viaturas e decidimos pelo preço mais vantajoso (...) Para o cálculo da renda consideramos por exemplo os quilómetros que cada viatura poderá fazer, o consumo (...) Na renda mensal está tudo incluído e é isso que consideramos (...)

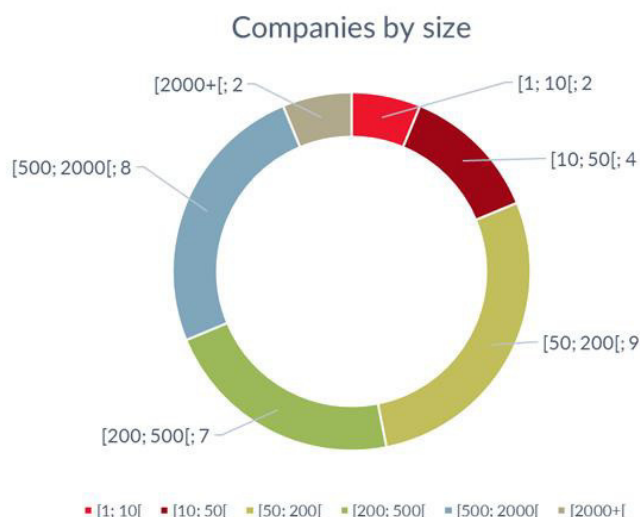
(...) Ainda não porque ainda não há o tipo de segmento de viaturas que utilizamos e ainda não há assim muitos postos para carregarmos os carros (...) Não sei qual a linha temporal para integrarmos veículos elétricos (...) Só se sair um modelo com o tipo de características que queremos talvez mas para já não há nada (...) não têm carrinhas com um porta-bagagens grande (...)

Carsharing (...) Não consigo responder a essa pergunta, mas poderia ser uma boa opção, talvez (...) Com a viatura de serviço ou táxi e Uber para reuniões importantes (...) acho que até estamos a optar mais pela Uber (...)

(...) Iberdrola para o grupo todo (...) o principal fator foi o preço, mudámos de EDP para estes (...) os contratos são de 24 meses e acho que vamos renovar com os mesmos (...)"

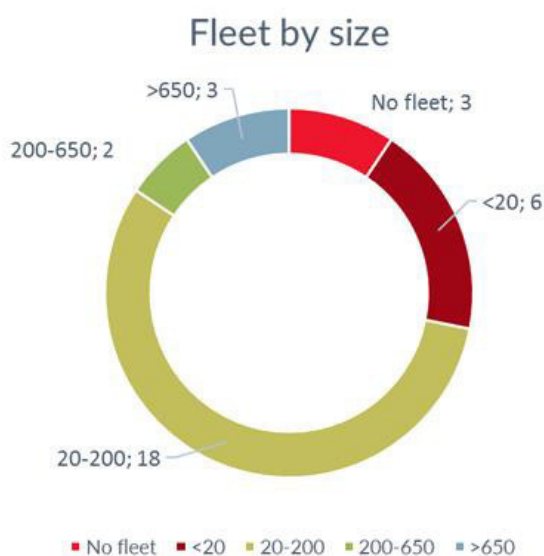
Source: Authors' Own Creation according to interviews done

Appendix 24 – Sample Characterization Interviews: Size of the Interviewed Companies



Source: Authors' Own Creation

Appendix 25 – Sample Characterization Interviews: Fleet Size of the Interviewed Companies



Source: Authors' Own Creation

Appendix 26 – Questionnaire 1 (Companies That Have Not Been Previously Interviewed)

Start of Block: Filter Questions

How many vehicles does your company have in its fleet?

- ☐ My company does not have a fleet
- ☐ < 20
- ☐ 21 - 200
- ☐ 201 - 650
- ☐ > 650

Display This Question:

If How many vehicles does your company have in its fleet? != My company does not have a fleet

How many Electric Vehicles (100% electric & plug-in hybrids) does your company have in its fleet?

- ☐ 0
- ☐ 1 - 5
- ☐ 6 - 10
- ☐ 11 - 20
- ☐ > 20

End of Block: Filter Questions

Start of Block: Only companies WITHOUT a fleet

Is your company considering having a fleet in the future?

- ☐ Yes
- ☐ No

☐ I do not know

Display This Question:

If Is your company considering having a fleet in the future? = Yes

When is your company planning to have a fleet?

☐ < 1 year

☐ 1 - 2 years

☐ 3 - 5 years

☐ > 5 years

☐ I do not know

End of Block: Only companies WITHOUT a fleet

Start of Block: Only companies with a fleet w/ EVs

What type of electric vehicles does your company use?

☐ 100 % Electrics (BEVs)

☐ Plug-In Hybrids (PHEVs)

☐ Both

☐ Other

For which reasons did your company include electric vehicles in the company's fleet?

☐ Vehicle consumption is cheaper (electricity vs. diesel costs)

☐ TCO (Total Cost of Ownership)

☐ Company's internal goals (e.g., reduction of CO2 emissions)

- ☐ Environmental concerns
- ☐ Tax benefits / fiscal advantages
- ☐ Company's image
- ☐ Price
- ☐ Other _____

End of Block: Only companies with a fleet w/ EVs

Start of Block: Only companies without a fleet & companies with a fleet w/out EVs

Is your company considering to have electric vehicles in its fleet?

- ☐ Yes
- ☐ No
- ☐ I do not know

Display This Question:

If Is your company considering to have electric vehicles in its fleet? = Yes

For which reasons is your company considering electric vehicles?

- ☐ Vehicle consumption is cheaper (electricity vs diesel costs)
- ☐ TCO (Total Cost of Ownership)
- ☐ Company's internal goals (e.g., reduction of CO2 emissions)
- ☐ Environmental concerns
- ☐ Tax benefits / fiscal advantages
- ☐ Company's image
- ☐ Price
- ☐ Other: _____

Display This Question:

If Is your company considering to have electric vehicles in its fleet? != Yes

For which reasons is your company not considering electric vehicles?

- ☐ Price
- ☐ Autonomy
- ☐ Low availability of vehicle models
- ☐ Time for payback of investment is not certain
- ☐ Uncertainty about the market's evolution
- ☐ Bad infrastructure (availability of public charging stations)
- ☐ Difficulty in finding a charging solution
- ☐ TCO (Total Cost of Ownership)
- ☐ Tax benefits / fiscal advantages
- ☐ Other: _____

End of Block: Only companies without a fleet & companies with a fleet w/out EVs

Start of Block: All Targets

Does your company have charging stations for employees or customers with electric vehicles?

- ☐ Yes
- ☐ No
- ☐ I do not know

Display This Question:

If Does your company have charging stations for employees or customers with electric vehicles? != Yes

Would your company consider having charging stations for your employees or customers in the future?

- ☐ Yes
- ☐ No
- ☐ I do not know

Display This Question:

If Would your company consider having charging stations for your employees or customers in the future ... = No

For which reasons is your company not considering having charging stations for employees or customers with electric vehicles?

- ☐ Lack of an adequate billing system
- ☐ My company's garage/parking lot does not belong to the company
- ☐ Public chargers fulfil the needs of my company
- ☐ Other: _____

End of Block: All Targets

Start of Block: [VALUE PROPOSITION – CHARGING POWER]

To which extent do you agree with the following statements:

My company would be interested in requiring consultancy services to find an optimal charging solution.

- ☐ Completely disagree
- ☐ Do not agree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Completely agree

Why would your company (not) be interested in requiring consultancy services to find an optimal charging solution?

My company would be interested in requiring consultancy services to find an optimal charging solu... = Completely disagree OR = Do not agree

☐ My company has the expertise to choose the optimal charging solution to fulfil our needs

My company would be interested in requiring consultancy services to find an optimal charging solu... = Completely disagree OR = Do not agree

☐ My company has already required this kind of consultancy service

My company would be interested in requiring consultancy services to find an optimal charging solu... = Completely disagree OR = Do not agree

☐ My company is not interested in having charging stations

My company would be interested in requiring consultancy services to find an optimal charging solu... = Completely disagree OR = Do not agree

☐ My company is happy with our current charging solution

My company would be interested in requiring consultancy services to find an optimal charging solu... = Completely disagree OR = Do not agree OR = Neither agree nor disagree

☐ My company's parking space is rented, so it is the landlord's decision

My company would be interested in requiring consultancy services to find an optimal charging solu... = Completely disagree OR = Do not agree OR = Neither agree nor disagree

☐ My company's parking space is rented and the landlord is not interested

My company would be interested in requiring consultancy services to find an optimal charging solu... = Completely disagree OR = Do not agree OR = Neither agree nor disagree

☐ My company's parking space is rented and the landlord has not found an ideal billing system yet

My company would be interested in requiring consultancy services to find an optimal charging solu... = Neither agree nor disagree

☐ If my company acquires (additional) electric vehicles

My company would be interested in requiring consultancy services to find an optimal charging solu... = Neither agree nor disagree

- ☐ Depends on the price of the consultancy service

My company would be interested in requiring consultancy services to find an optimal charging solu... = Agree OR = Completely agree

- ☐ My company does not have the expertise to choose the optimal charging solution to fulfil our needs

My company would be interested in requiring consultancy services to find an optimal charging solu... = Agree OR = Completely agree

- ☐ My company is already looking for this kind of consultancy service

My company would be interested in requiring consultancy services to find an optimal charging solu... = Agree OR = Completely agree

- ☐ My company is not happy with our current charging solution

- ☐ Other: _____

My company would be interested in using an outsourcing company to provide and install all the charging infrastructure as well as provide additional services (e.g., maintenance, assistance, charging management).

- ☐ Completely disagree
- ☐ Do not agree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Completely agree

Why would your company (not) be interested in using an outsourcing company to provide and install all the charging infrastructure as well as provide additional services?

My company would be interested in using an outsourcing company to provide and install all the cha... = Completely disagree OR = Do not agree

- ☐ My company has the expertise to perform the services mentioned above

My company would be interested in using an outsourcing company to provide and install all the cha... = Completely disagree OR = Do not agree

☐ My company has already required this kind of service

My company would be interested in using an outsourcing company to provide and install all the cha... = Completely disagree OR = Do not agree

☐ My company is not interested in having charging stations

My company would be interested in using an outsourcing company to provide and install all the cha... = Completely disagree OR = Do not agree

☐ My company is happy with our current charging solution

My company would be interested in using an outsourcing company to provide and install all the cha... = Completely disagree OR = Do not agree

☐ My company prefers to outsource those services to separate companies

My company would be interested in using an outsourcing company to provide and install all the cha... = Neither agree nor disagree

☐ If my company acquires (additional) electric vehicles

My company would be interested in using an outsourcing company to provide and install all the cha... = Neither agree nor disagree

☐ Depends on the price of the services mentioned above

My company would be interested in using an outsourcing company to provide and install all the cha... = Agree OR = Completely agree

☐ My company is already looking for this kind of service

My company would be interested in using an outsourcing company to provide and install all the cha... = Agree OR = Completely agree

☐ My company is not happy with our current charging solution

My company would be interested in using an outsourcing company to provide and install all the cha... = Agree OR = Completely agree

☐ It sounds like a very convenient solution

My company would be interested in using an outsourcing company to provide and install all the cha... = Agree OR = Completely agree

☐ Using only one company to provide all of the services mentioned previously would allow my company to reduce costs

☐ Other: _____

My company would be interested in paying for consultancy services from a company that also provides and installs all the charging infrastructure as well as provides additional services (a combination of the services mentioned in the two previous questions).

- ☐ Completely disagree
- ☐ Do not agree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Completely agree

Who would your company contact for this kind of services?

End of Block: [VALUE PROPOSITION – CHARGING POWER]

Start of Block: [VALUE PROPOSITION – FULL POWER]

To which extent do you agree with the following statements:

My company would be interested in using an outsourcing company to provide a full mobility solution (which means: consultancy services for the electrification of the fleet, providing the electric vehicles and all the charging infrastructure, managing my company's electric vehicles fleet, etc.).

- ☐ Completely disagree
- ☐ Do not agree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Completely agree

Why would your company (not) be interested in using an outsourcing company to provide a full mobility solution?

My company would be interested in using an outsourcing company to provide a full mobility solution... = Completely disagree OR = Do not agree

☐ My company has the expertise to perform the services mentioned above

My company would be interested in using an outsourcing company to provide a full mobility solution... = Completely disagree OR = Do not agree

☐ My company has already required this kind of service

My company would be interested in using an outsourcing company to provide a full mobility solution... = Completely disagree OR = Do not agree

☐ My company is not interested in adopting electric vehicles

My company would be interested in using an outsourcing company to provide a full mobility solution... = Completely disagree OR = Do not agree

☐ My company is happy with our current solution

My company would be interested in using an outsourcing company to provide a full mobility solution... = Completely disagree OR = Do not agree

☐ My company prefers to outsource those services to separate companies

My company would be interested in using an outsourcing company to provide a full mobility solution... = Neither agree nor disagree

☐ If my company is considering to acquire (additional) electric vehicles

My company would be interested in using an outsourcing company to provide a full mobility solution... = Neither agree nor disagree

☐ Depends on the price of the services mentioned above

My company would be interested in using an outsourcing company to provide a full mobility solution... = Agree OR = Completely agree

☐ My company is already looking for this kind of service

My company would be interested in using an outsourcing company to provide a full mobility solution... = Agree OR = Completely agree

☐ My company is not happy with our current solution

My company would be interested in using an outsourcing company to provide a full mobility solution... = Agree OR = Completely agree

☐ It sounds like a very convenient solution

My company would be interested in using an outsourcing company to provide a full mobility solution... = Agree OR = Completely agree

☐ Using only one company to provide all of the services mentioned previously would allow my company to reduce costs

☐ Other: _____

My company would be interested in using a mobility card that would allow the employees to use several kinds of transportation (electric bikes, electric scooters, electric carsharing etc.) as well as paying for the energy for the electric vehicles.

☐ Completely disagree

☐ Do not agree

☐ Neither agree nor disagree

☐ Agree

☐ Completely agree

Why would your company (not) be interested in using a mobility card that allows employees to use several kinds of transportation as well as paying for their electrical vehicle's energy?

My company would be interested in using a mobility card that would allow the employees to use sev... = Agree OR = Completely agree

☐ It is something we have been looking for

My company would be interested in using a mobility card that would allow the employees to use sev... = Agree OR = Completely agree

☐ I think it is the future

My company would be interested in using a mobility card that would allow the employees to use sev... = Neither agree nor disagree

☐ I am not sure how it would work

My company would be interested in using a mobility card that would allow the employees to use sev... = Neither agree nor disagree

- ☐ Depending on the price of the card

My company would be interested in using a mobility card that would allow the employees to use sev... = Neither agree nor disagree

- ☐ Depending on the transports provided

My company would be interested in using a mobility card that would allow the employees to use sev... = Completely disagree OR = Do not agree

- ☐ My company does not provide transportation benefits to the employees

My company would be interested in using a mobility card that would allow the employees to use sev... = Completely disagree OR = Do not agree

- ☐ My company's employees do not use other types of transports, they only use company cars

- ☐ Other: _____

End of Block: [VALUE PROPOSITION – FULL POWER]

Start of Block: MOBILITY SOLUTIONS

Could you please select all modes of transportation your company's employees usually use to get to meetings, company events, etc.?

- ☐ Company vehicles

- ☐ Employees' vehicles

- ☐ Taxi

- ☐ Uber and/or Cabify

- ☐ Rent-a-car

- ☐ Bike sharing / Scooter sharing

- ☐ Public transport

- ☐ Plane

- ☐ Other: _____

What is the average daily distance travelled by the passenger vehicles in your company's fleet?

- ☐ < 50 km
- ☐ 50 - 99 km
- ☐ 100 - 200 km
- ☐ 201 - 300 km
- ☐ > 300 km

Carsharing is a service offered through a membership program that intends to give an alternative to car ownership. Persons or entities that become members are permitted to use vehicles from a fleet for short periods of time. The vehicles are available in several locations and the user only pays for their usage (usually on a time basis).

How often does your company use a carsharing service?

- ☐ Never
- ☐ Occasionally
- ☐ Frequently
- ☐ I do not know

Display This Question:

If How often does your company use a carsharing service? = Occasionally OR = Frequently

What carsharing companies has your company worked with before?

Display This Question:

If How often does your company use a carsharing service? = Never
Would your company consider using a carsharing service in the future?

- ☐ Yes
- ☐ No

☐ I do not know

Display This Question:

If Would your company consider using a carsharing service in the future? = Yes

For which reasons would your company consider using a carsharing service in the future?

- ☐ Price
- ☐ Convenience (e.g., booking and payment via app)
- ☐ Comfort (e.g., vehicle quality)
- ☐ Other: _____

Display This Question:

If Would your company consider using a carsharing service in the future? = No

For which reasons would your company not consider using a carsharing service?

- ☐ Do not know the service
- ☐ My company's car policy does not allow it
- ☐ Have a company car
- ☐ Cannot guarantee employees' security
- ☐ Other: _____

Does your company use some kind of internal carsharing (e.g., pool cars)? (This question does not refer to employees giving each other rides or using the same car at the same time to save costs.)

- ☐ Yes
- ☐ No
- ☐ I do not know

To which extent do you agree with the following statements:

My company would be interested in implementing an internal carsharing system with which employees could book company cars for professional trips during the working day, but also for private trips during the weekends or to commute (and pay themselves for these private trips).

- ☐ Completely disagree
- ☐ Do not agree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Completely agree

Why would your company (not) be interested in implementing an internal carsharing system?

My company would be interested in implementing an internal carsharing system with which employees... = Agree OR = Completely agree

- ☐ The company could save money with that

My company would be interested in implementing an internal carsharing system with which employees... = Agree OR = Completely agree

- ☐ It would offer additional value and opportunities to employees

My company would be interested in implementing an internal carsharing system with which employees... = Agree OR = Completely agree

- ☐ I think it is the future

My company would be interested in implementing an internal carsharing system with which employees... = Neither agree nor disagree

- ☐ Depends on how exactly the service would work

My company would be interested in implementing an internal carsharing system with which employees... = Neither agree nor disagree

- ☐ Depends on the potential savings for my company

My company would be interested in implementing an internal carsharing system with which employees... = Completely disagree OR = Do not agree

- ☐ My company would never consider a carsharing service

My company would be interested in implementing an internal carsharing system with which employees... = Completely disagree OR = Do not agree

- ☐ Offering this service brings no advantages

My company would be interested in implementing an internal carsharing system with which employees... = Completely disagree OR = Do not agree

- ☐ There could be problems with ensuring the availability of the cars if employees can also use them for private trips (e.g., if they do not arrive on time in the morning)

- ☐ Other: _____

Display This Question:

If Why would your company (not) be interested in implementing an internal carsharing system? = The company could save money with that

Or Why would your company (not) be interested in implementing an internal carsharing system? = It would offer additional value and opportunities to employees

Or Why would your company (not) be interested in implementing an internal carsharing system? = I think it is the future

Would your company still be interested if these cars were electric?

- ☐ Yes
- ☐ No
- ☐ I do not know

Display This Question:

If Would your company still be interested if these cars were electric? = No OR = I do not know

Why would your company not be interested if the cars were electric?

- ☐ Depends on the potential savings for my company
- ☐ Charging could be an issue
- ☐ The autonomy of the cars could be an issue
- ☐ Not all vehicle models my company wants to use are available as electric versions

☐ Other: _____

My company would be interested in sharing cars with several companies in the same area (e.g., business park) in order to reduce the associated cars' costs.

- ☐ Completely disagree
- ☐ Do not agree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Completely agree

Why would your company (not) be interested in sharing cars with several companies in the same area?

My company would be interested in sharing cars with several companies in the same area (e.g., bu... = Agree OR = Completely agree

☐ The company could save money with that

My company would be interested in sharing cars with several companies in the same area (e.g., bu... = Agree OR = Completely agree

☐ It would offer additional value and opportunities to employees

My company would be interested in sharing cars with several companies in the same area (e.g., bu... = Agree OR = Completely agree

☐ I think it is the future

My company would be interested in sharing cars with several companies in the same area (e.g., bu... = Agree OR = Completely agree

☐ It makes sense since we share the same business park/garage/parking lot

My company would be interested in sharing cars with several companies in the same area (e.g., bu... = Neither agree nor disagree

☐ Depends on how exactly the service would work

My company would be interested in sharing cars with several companies in the same area (e.g., bu... = Neither agree nor disagree

- ☐ Depends on the potential savings for my company

My company would be interested in sharing cars with several companies in the same area (e.g., bu... = Completely disagree OR = Do not agree

- ☐ My company would never consider a carsharing service

My company would be interested in sharing cars with several companies in the same area (e.g., bu... = Completely disagree OR = Do not agree

- ☐ Offering this service brings no advantages

My company would be interested in sharing cars with several companies in the same area (e.g., bu... = Completely disagree OR = Do not agree

- ☐ Employees will not like to share the same cars with other companies (even though it would not be at the same time)

My company would be interested in sharing cars with several companies in the same area (e.g., bu... = Completely disagree OR = Do not agree

- ☐ My company's vehicles are already being used in an efficient way

- ☐ Other: _____

Would your company still be interested if these cars were electric?

- ☐ Yes
- ☐ No
- ☐ I do not know

Display This Question:

If Would your company still be interested if these cars were electric? != Yes

Why would your company not be interested anymore if these cars were electric?

- ☐ Depends on the potential savings for my company
- ☐ Charging could be an issue
- ☐ The autonomy of the cars could be an issue
- ☐ Not all vehicle models my company wants to use are available as electric versions

☐ Other: _____

How well informed do you consider yourself regarding electric mobility solutions?

- ☐ Not informed
- ☐ Not well informed
- ☐ Relatively well informed
- ☐ Well informed
- ☐ Very well informed

End of Block: MOBILITY SOLUTIONS

Start of Block: All Targets (wrap-up)

How many employees does your company have in Portugal?

- ☐ 1 - 10
- ☐ 11 - 50
- ☐ 51 - 200
- ☐ 201 - 500
- ☐ 501 - 2000
- ☐ > 2000

What is the sector of your company?

- ☐ Agriculture, Forestry and Fishing
- ☐ Mining and Quarrying
- ☐ Manufacturing

- ☐ Electricity, Gas, Steam and Air-Conditioning supply
- ☐ Water supply, Sewerage, Waste Management and Remediation
- ☐ Construction
- ☐ Wholesale and Retail Trade, Repair of motor vehicles and motorcycles
- ☐ Transportation and Storage
- ☐ Accommodation and Food Service activities
- ☐ Information and Communication (Telecommunications and IT included)
- ☐ Financial and Insurance activities
- ☐ Real Estate activities
- ☐ Professional, Scientific and Technical activities (Legal, Accounting, Management and Architecture activities)
- ☐ Administrative and Support Service activities
- ☐ Public Administration and Defence, Compulsory Social Security
- ☐ Education
- ☐ Human Health services
- ☐ Arts, Entertainment and Recreation
- ☐ Other: _____

How many offices does your company have in Portugal?

- ☐ 1
- ☐ 2 - 3
- ☐ 4 - 5
- ☐ > 5

Where in Portugal is your company located?

- ☐ North
- ☐ Center
- ☐ South
- ☐ Lisbon

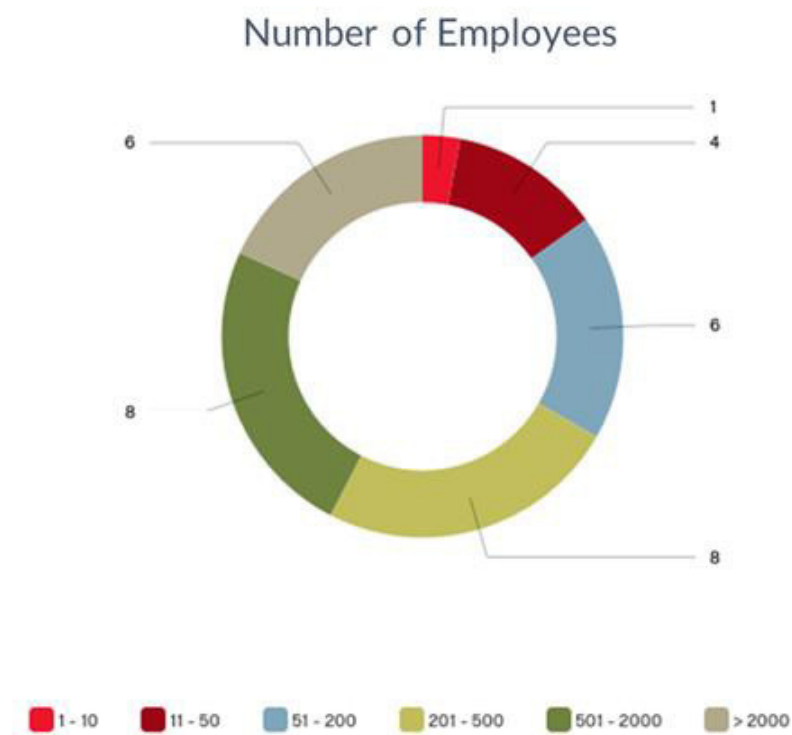
Which of the following characteristics applies to your parking space?

- ☐ Owned
- ☐ Rented
- ☐ Business Park

End of Block: All Targets (wrap-up)

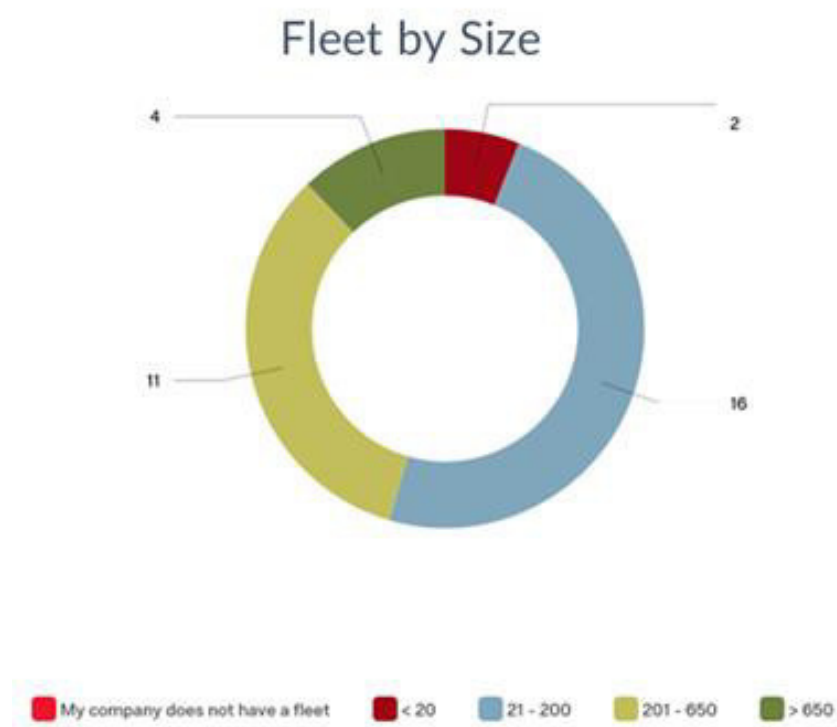
Source: Authors' Own Creation

Appendix 27 – Sample Characterization Questionnaire 1: Size of the Companies



Source: Authors' Own Creation

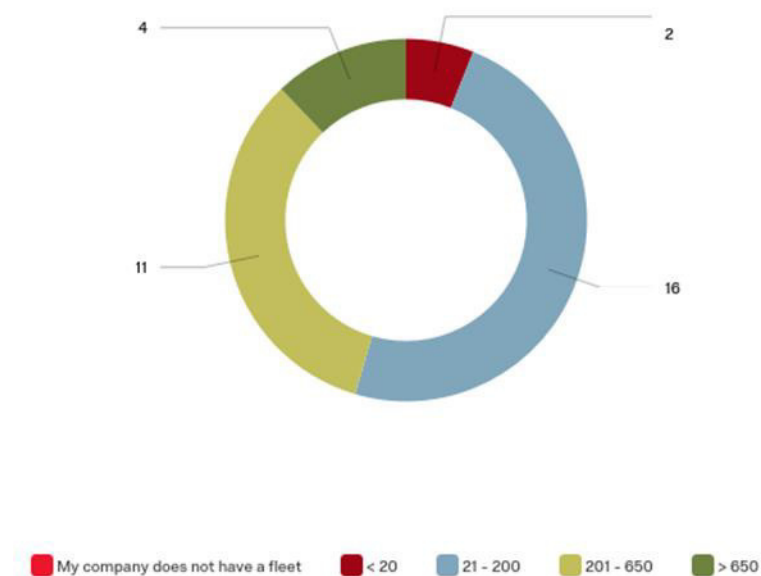
Appendix 28 – Sample Characterization Questionnaire 1: Fleet Size of the Companies



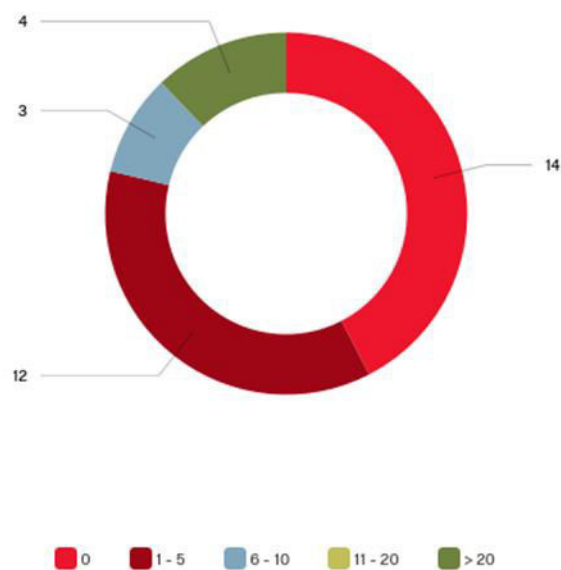
Source: Authors' Own Creation

Appendix 29 – Results Questionnaire 1

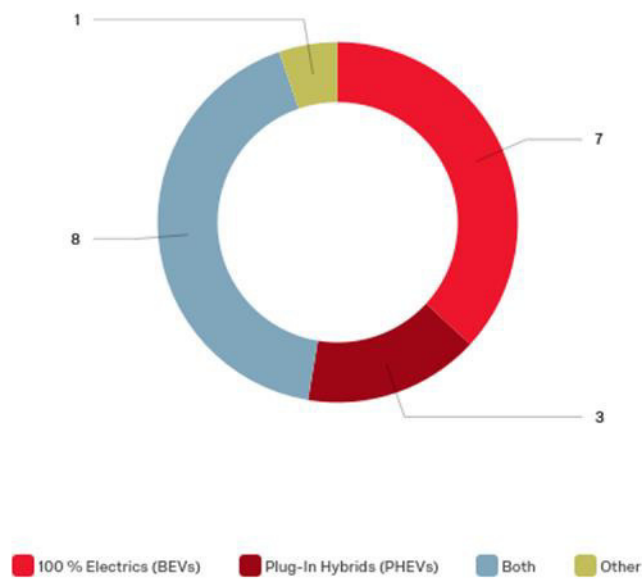
How many vehicles does your company have in its fleet?



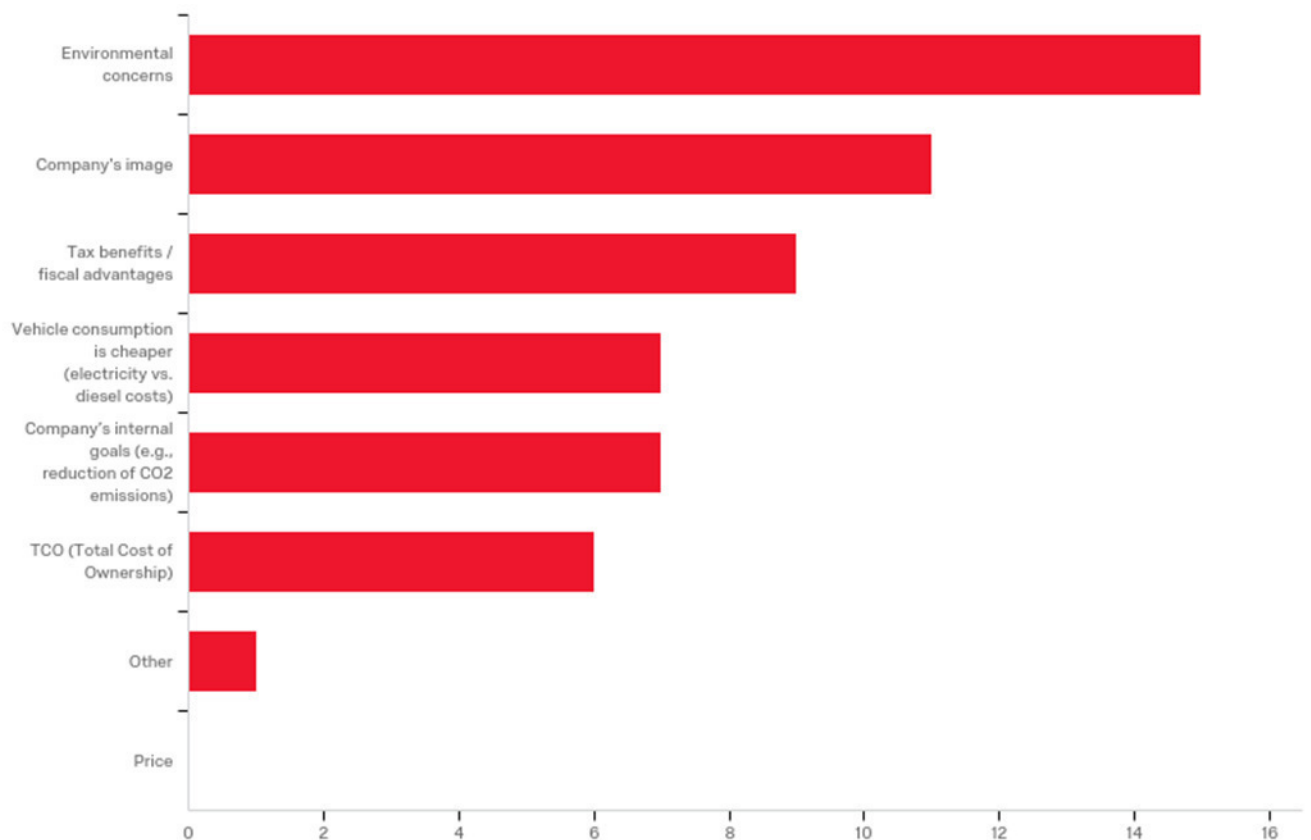
How many Electric Vehicles (100% electric & plug-in hybrids) does your company have in its fleet?



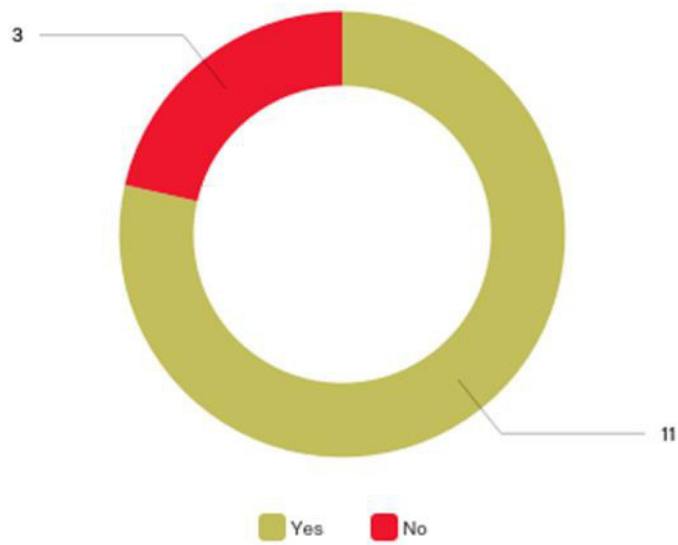
What type of electric vehicles does your company use?



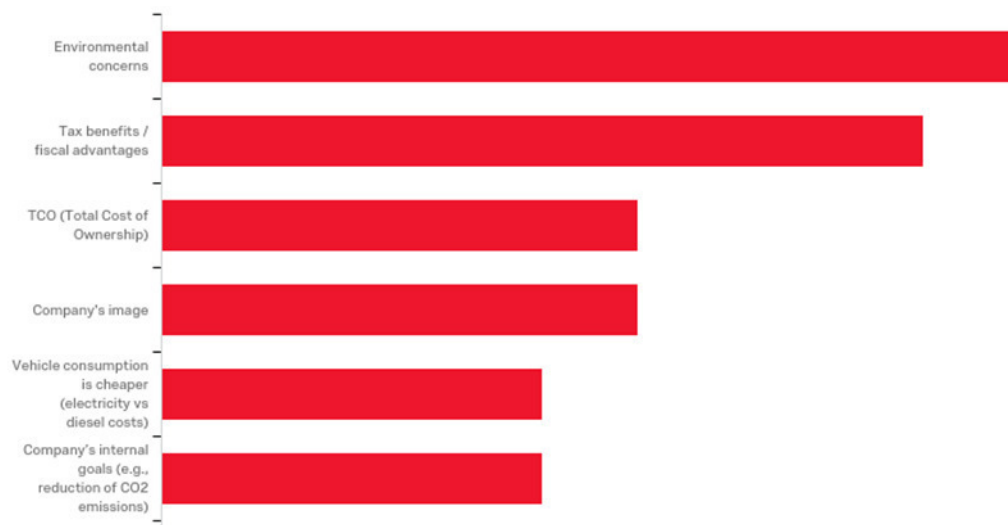
For which reasons did your company include electric vehicles in the company's fleet?



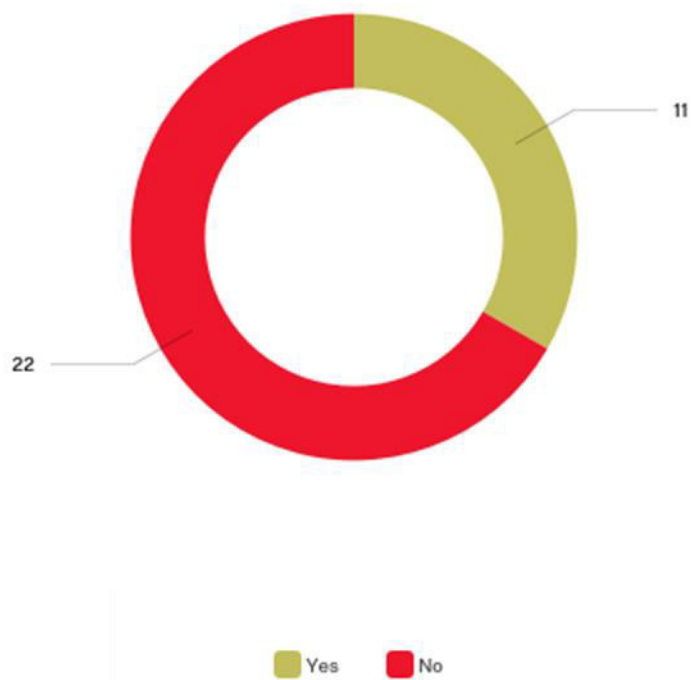
Is your company considering to have electric vehicles in its fleet?



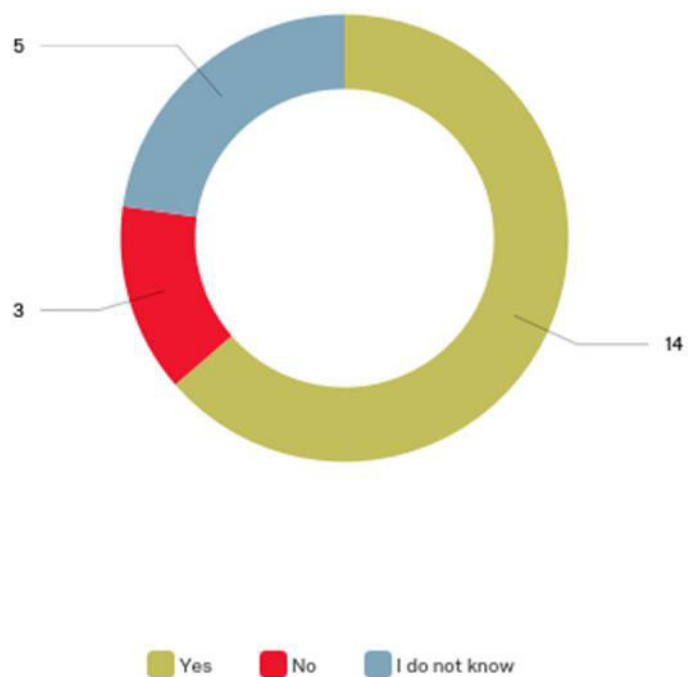
For which reasons is your company considering electric vehicles?



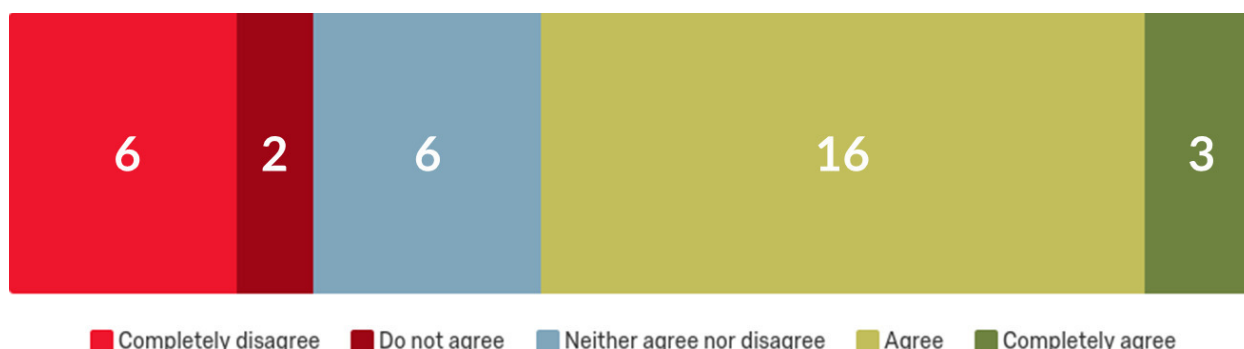
Does your company have charging stations for employees or customers with electric vehicles?



Would your company consider having charging stations for your employees or customers in the future?



My company would be interested in requiring consultancy services to find an optimal charging solution.



Why would your company (not) be interested in requiring consultancy services to find an optimal charging solution?

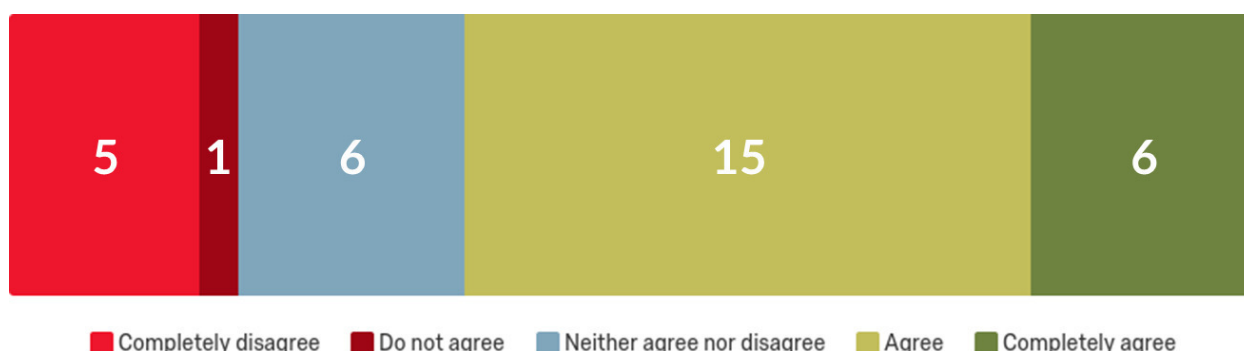
Reasons why companies are not interested:



Reasons why companies are interested:

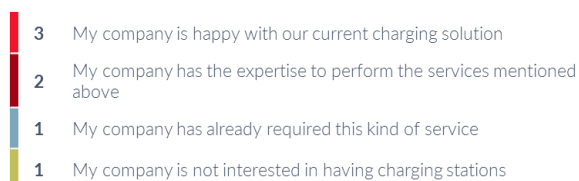


My company would be interested in using an outsourcing company to provide and install all the charging infrastructure as well as provide additional services (e.g., maintenance, assistance, charging management).



Why would your company (not) be interested in using an outsourcing company to provide and install all the charging infrastructure as well as provide additional services?

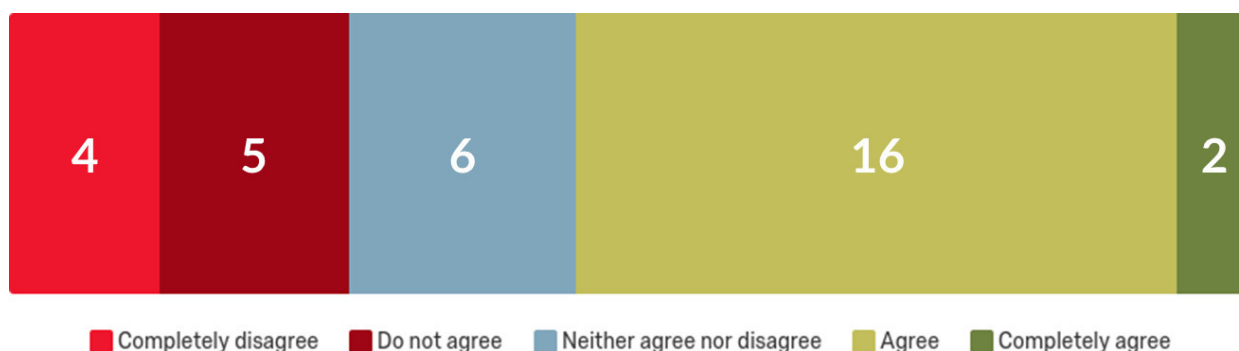
Reasons why companies are not interested:



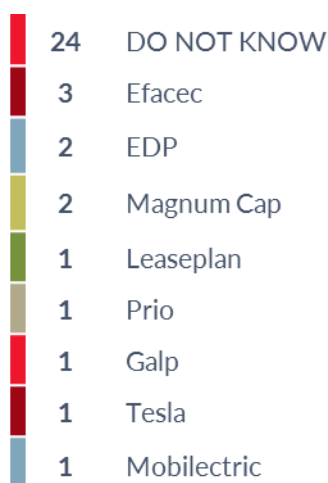
Reasons why companies are interested:



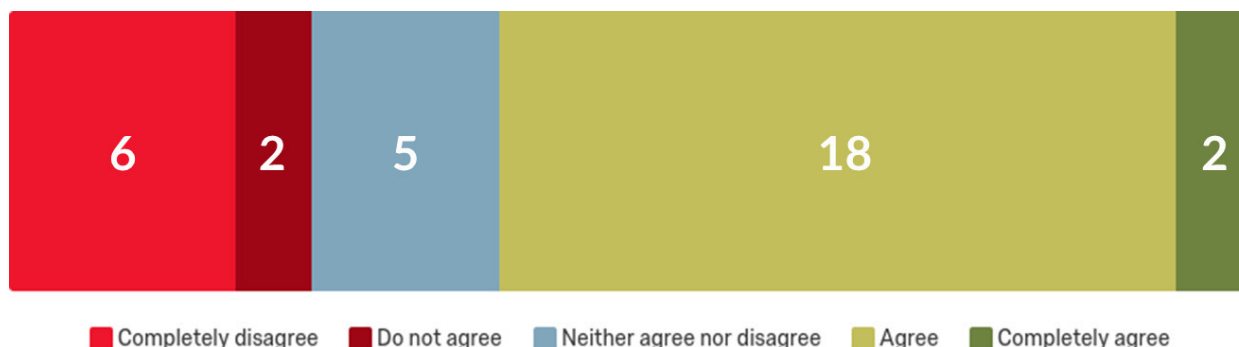
My company would be interested in paying for consultancy services from a company that also provides and installs all the charging infrastructure as well as provides additional services (a combination of the services mentioned in the two previous questions).



Who would your company contact for this kind of services?

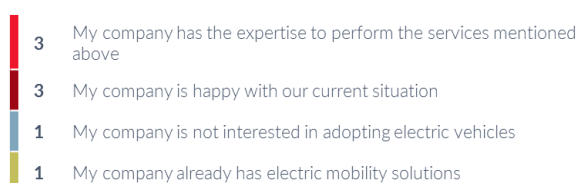


My company would be interested in using an outsourcing company to provide a full mobility solution (which means: consultancy services for the electrification of the fleet, providing the electric vehicles and all the charging infrastructure, managing my company's electric vehicles fleet, etc.).



Why would your company (not) be interested in using an outsourcing company to provide a full mobility solution?

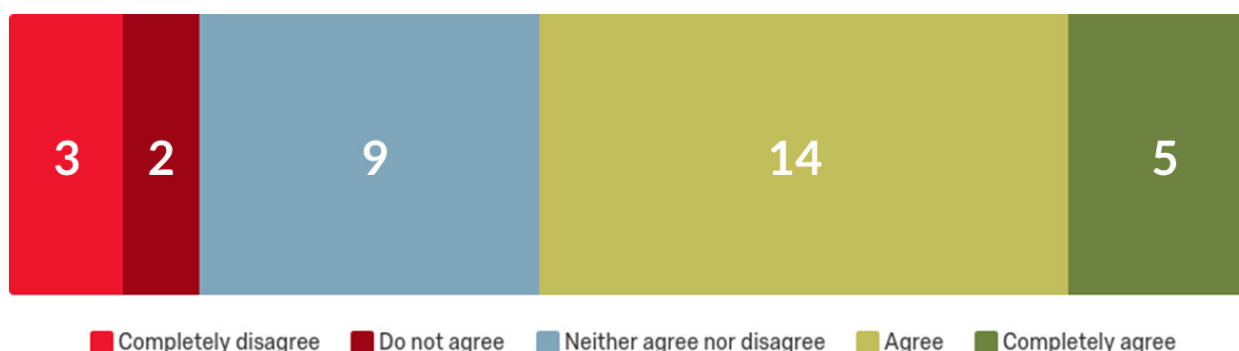
Reasons why companies are not interested:



Reasons why companies are interested:



My company would be interested in using a mobility card that would allow the employees to use several kinds of transportation (electric bikes, electric scooters, electric carsharing etc.) as well as paying for the energy for the electric vehicles.



Why would your company (not) be interested in using a mobility card that allows employees to use several kinds of transportation as well as paying for their electrical vehicle's energy?

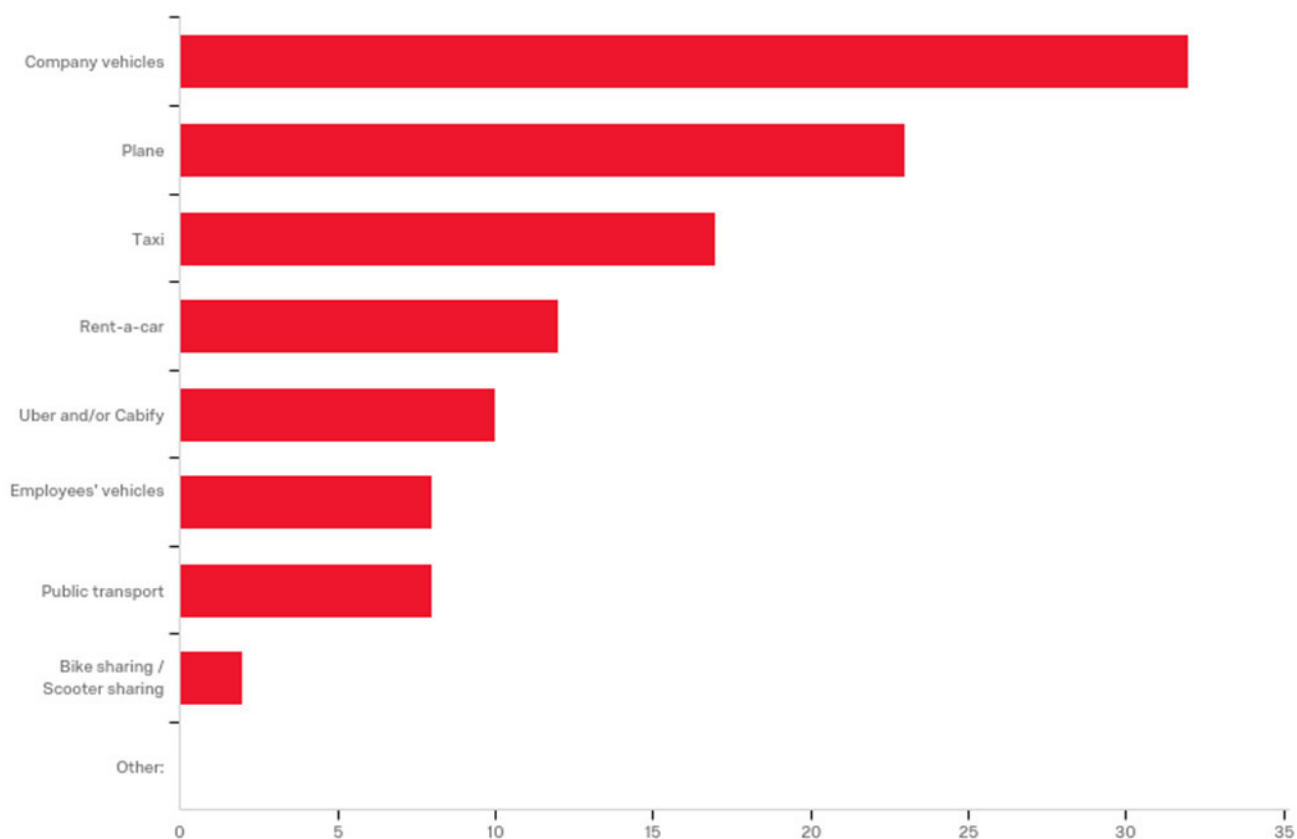
Reasons why companies are not / might be interested:

- 6 I am not sure how it would work
- 2 My company does not provide transportation benefits to the employees
- 2 My company's employees do not use other types of transports, they only use company cars
- 2 Depending on the transports provided

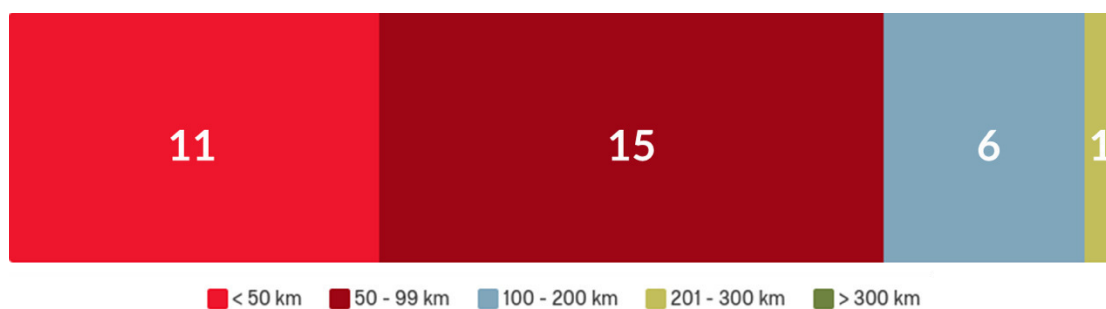
Reasons why companies are interested:

- 19 I think it is the future
- 1 It is something we have been looking for

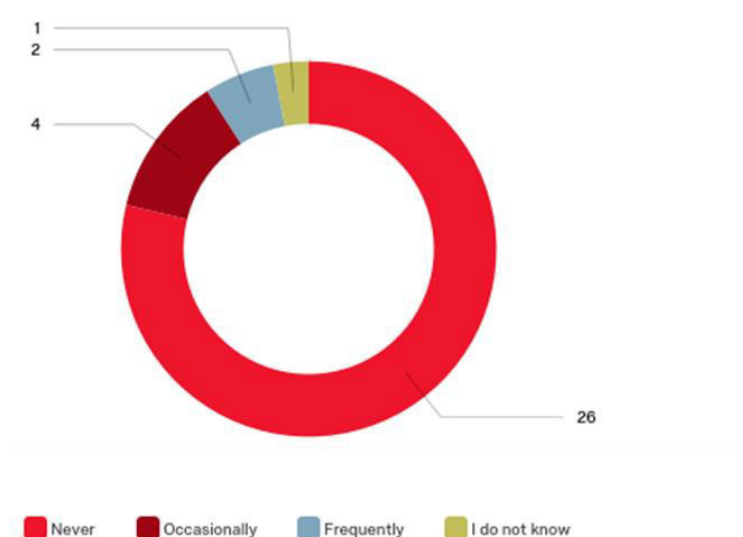
Could you please select all modes of transportation your company's employees usually use to get to meetings, company events, etc.?



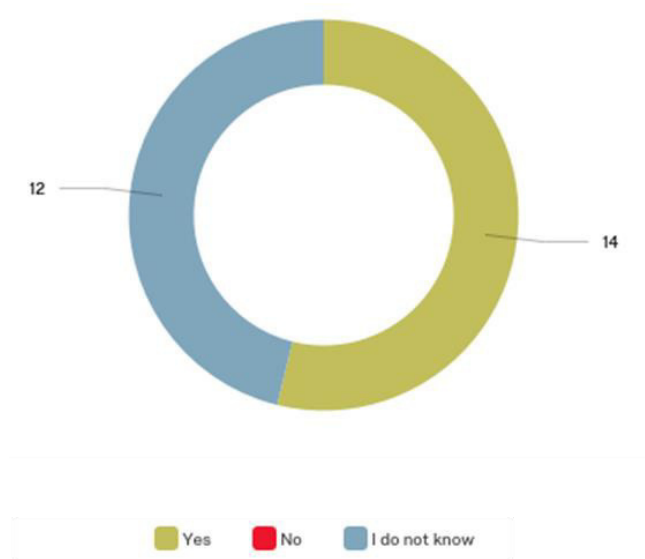
What is the average daily distance travelled by the passenger vehicles in your company's fleet?



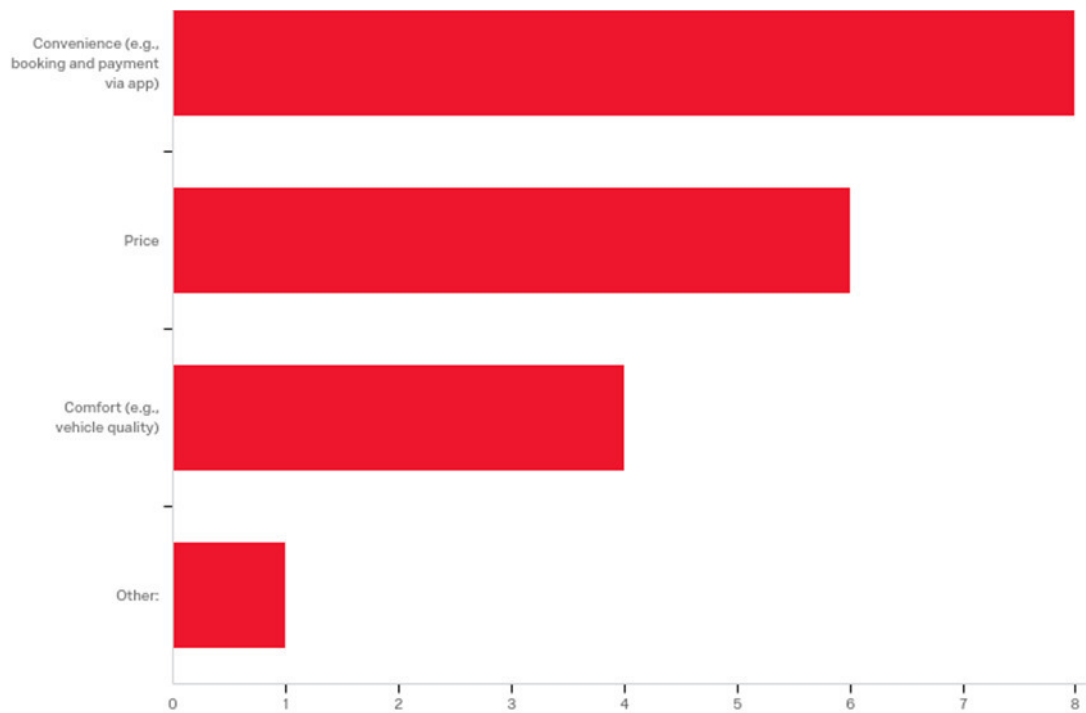
How often does your company use a carsharing service?



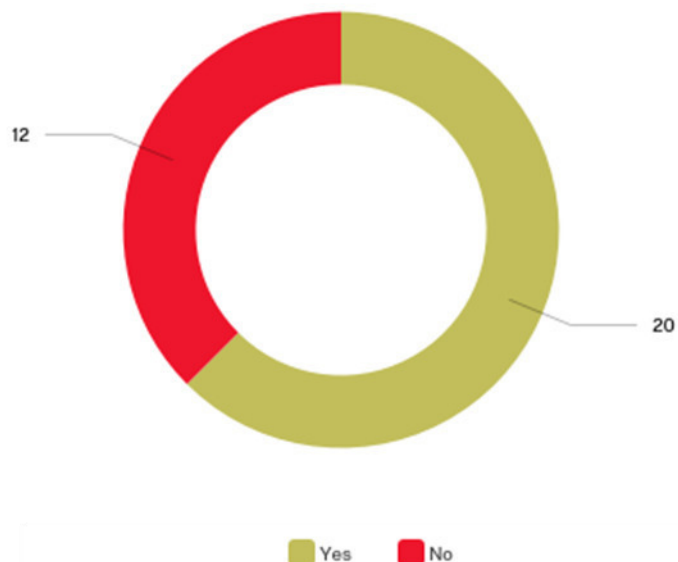
Would your company consider using a carsharing service in the future?



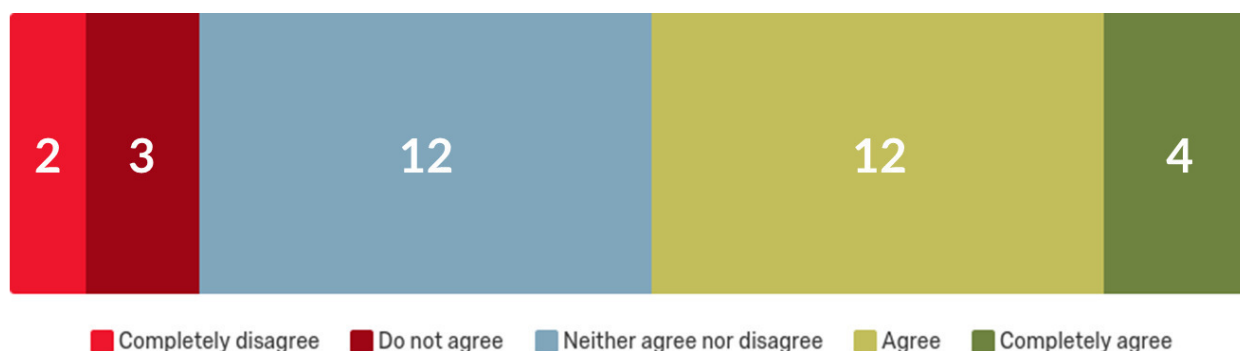
For which reasons would your company consider using a carsharing service in the future?



Does your company use some kind of internal carsharing (e.g., pool cars)? (This question does not refer to employees giving each other rides or using the same car at the same time to save costs.)

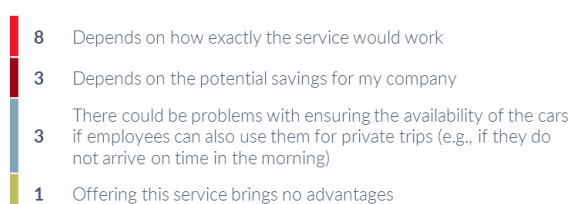


My company would be interested in implementing an internal carsharing system with which employees could book company cars for professional trips during the working day, but also for private trips during the weekends or to commute (and pay themselves for these private trips).

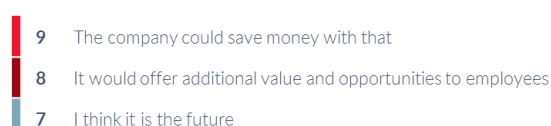


Why would your company (not) be interested in implementing an internal carsharing system?

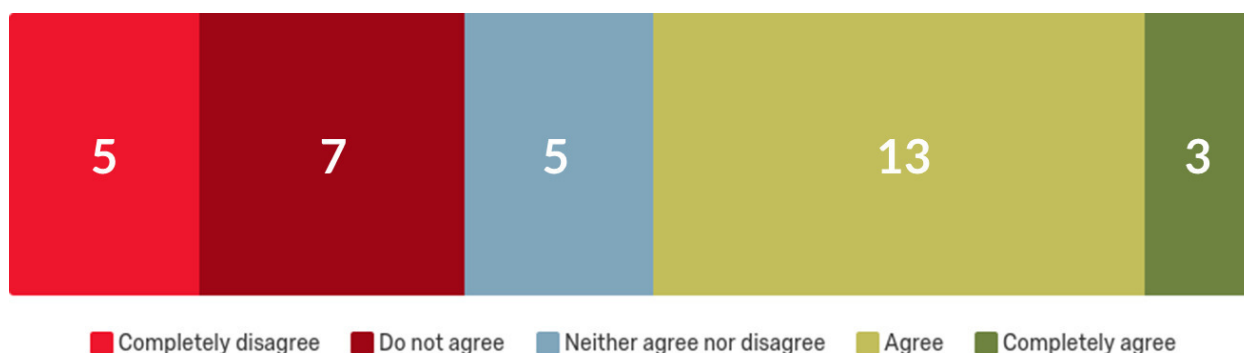
Reasons why companies are not / might be interested:



Reasons why companies are interested:

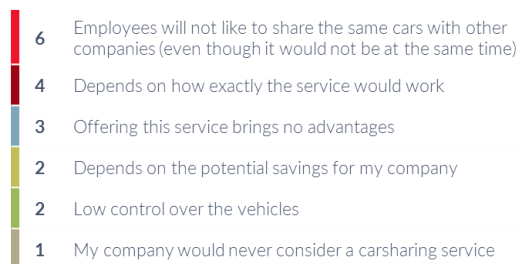


My company would be interested in sharing cars with several companies in the same area (e.g., business park) in order to reduce the associated cars' costs.

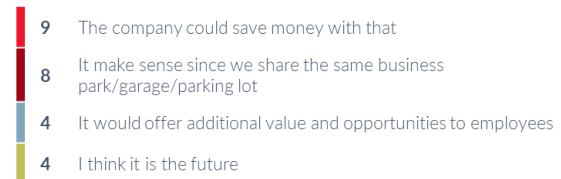


Why would your company (not) be interested in sharing cars with several companies in the same area?

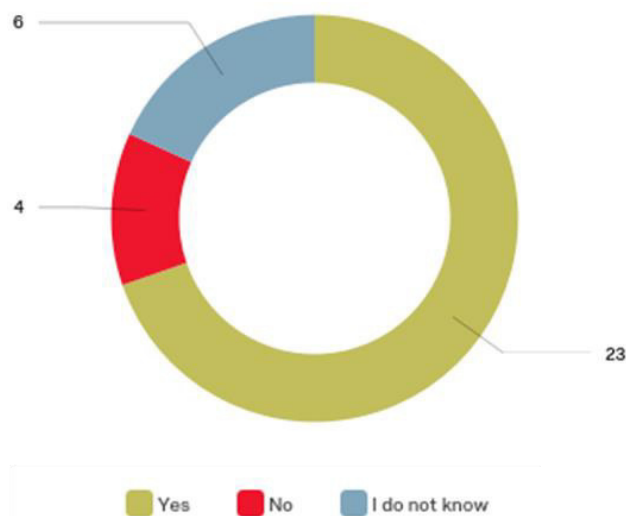
Reasons why companies are not / might be interested:



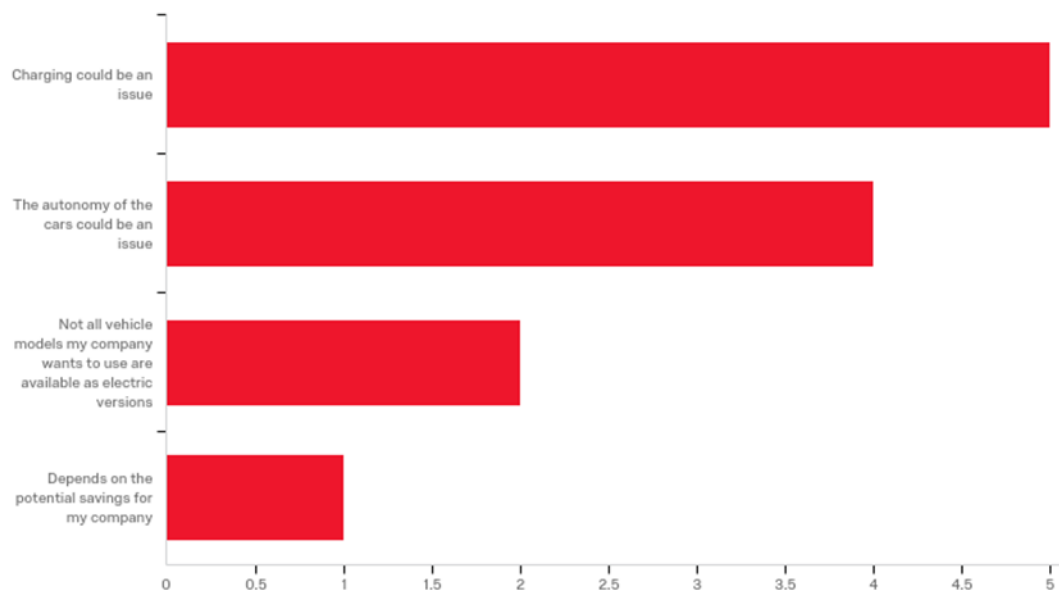
Reasons why companies are interested:



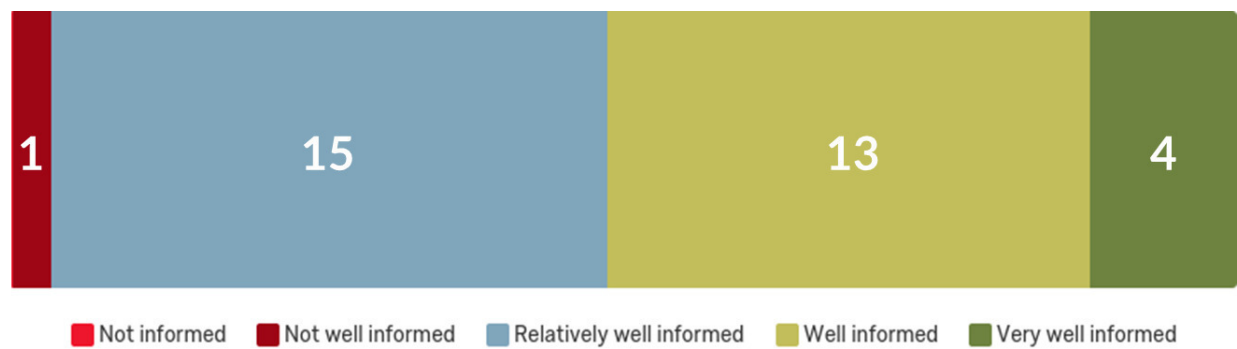
Would your company still be interested if these cars were electric?



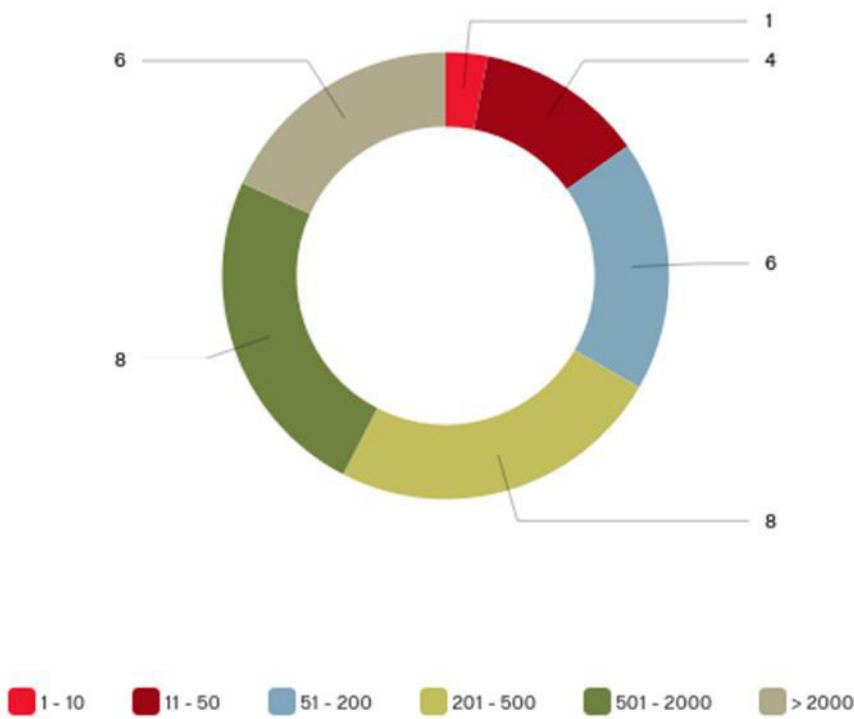
Why would your company not be interested anymore if these cars were electric?



How well informed do you consider yourself regarding electric mobility solutions?



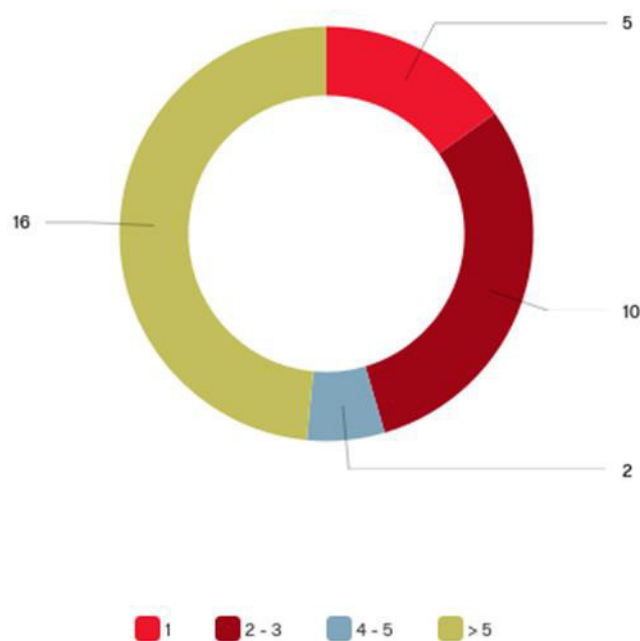
How many employees does your company have in Portugal?



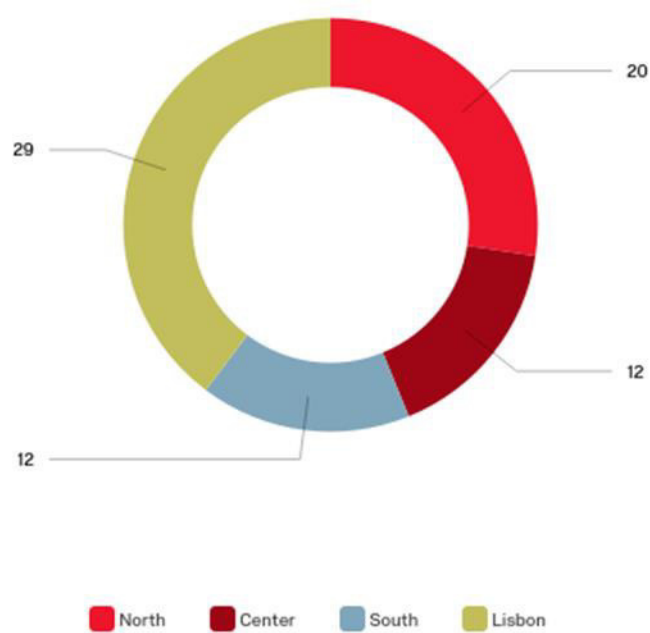
What is the sector of your company?



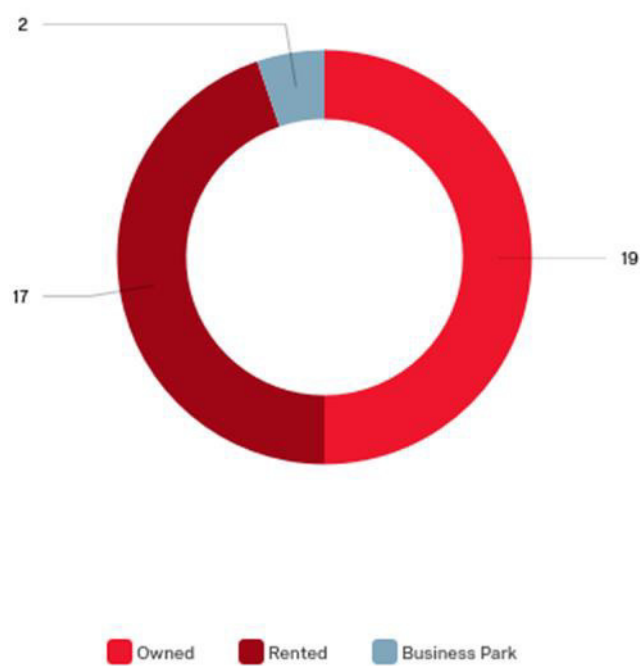
How many offices does your company have in Portugal?



Where in Portugal is your company located?



Which of the following characteristics applies to your parking space?



Source: Authors' Own Creation

Appendix 30 – Questionnaire 2 (Companies that Have Been Previously Interviewed)

Start of Block: Filter Questions

How many vehicles does your company have in its fleet?

- ☐ My company does not have a fleet
- ☐ < 20
- ☐ 21 - 200
- ☐ 201 - 650
- ☐ > 650

Display This Question:

If How many vehicles does your company have in its fleet? != My company does not have a fleet

How many Electric Vehicles (100% electric & plug-in hybrids) does your company have in its fleet?

- ☐ 0
- ☐ 1 - 5
- ☐ 6 - 10
- ☐ 11 - 20
- ☐ > 20

End of Block: Filter Questions

Start of Block: [VALUE PROPOSITION – CHARGING POWER]

To which extent do you agree with the following statements:

My company would be interested in requiring consultancy services to find an optimal charging solution.

- ☐ Completely disagree

- ☐ Do not agree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Completely agree

Why would your company (not) be interested in requiring consultancy services to find an optimal charging solution?

My company would be interested in requiring consultancy services to find an optimal charging solu... = Completely disagree OR = Do not agree

- ☐ My company has the expertise to choose the optimal charging solution to fulfil our needs

My company would be interested in requiring consultancy services to find an optimal charging solu... = Completely disagree OR = Do not agree

- ☐ My company has already required this kind of consultancy service

My company would be interested in requiring consultancy services to find an optimal charging solu... = Completely disagree OR = Do not agree

- ☐ My company is not interested in having charging stations

My company would be interested in requiring consultancy services to find an optimal charging solu... = Completely disagree OR = Do not agree

- ☐ My company is happy with our current charging solution

My company would be interested in requiring consultancy services to find an optimal charging solu... = Completely disagree OR = Do not agree OR = Neither agree nor disagree

- ☐ My company's parking space is rented, so it is the landlord's decision

My company would be interested in requiring consultancy services to find an optimal charging solu... = Completely disagree OR = Do not agree OR = Neither agree nor disagree

- ☐ My company's parking space is rented and the landlord is not interested

My company would be interested in requiring consultancy services to find an optimal charging solu... = Completely disagree OR = Do not agree OR = Neither agree nor disagree

- ☐ My company's parking space is rented and the landlord has not found an ideal billing system yet

My company would be interested in requiring consultancy services to find an optimal charging solu... = Neither agree nor disagree

- ☐ If my company acquires (additional) electric vehicles

My company would be interested in requiring consultancy services to find an optimal charging solu... = Neither agree nor disagree

- ☐ Depends on the price of the consultancy service

My company would be interested in requiring consultancy services to find an optimal charging solu... = Agree OR = Completely agree

- ☐ My company does not have the expertise to choose the optimal charging solution to fulfil our needs

My company would be interested in requiring consultancy services to find an optimal charging solu... = Agree OR = Completely agree

- ☐ My company is already looking for this kind of consultancy service

My company would be interested in requiring consultancy services to find an optimal charging solu... = Agree OR = Completely agree

- ☐ My company is not happy with our current charging solution

- ☐ Other: _____

My company would be interested in using an outsourcing company to provide and install all the charging infrastructure as well as provide additional services (e.g., maintenance, assistance, charging management).

- ☐ Completely disagree
- ☐ Do not agree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Completely agree

Why would your company (not) be interested in using an outsourcing company to provide and install all the charging infrastructure as well as provide additional services?

My company would be interested in using an outsourcing company to provide and install all the cha... = Completely disagree OR = Do not agree

☐ My company has the expertise to perform the services mentioned above

My company would be interested in using an outsourcing company to provide and install all the cha... = Completely disagree OR = Do not agree

☐ My company has already required this kind of service

My company would be interested in using an outsourcing company to provide and install all the cha... = Completely disagree OR = Do not agree

☐ My company is not interested in having charging stations

My company would be interested in using an outsourcing company to provide and install all the cha... = Completely disagree OR = Do not agree

☐ My company is happy with our current charging solution

My company would be interested in using an outsourcing company to provide and install all the cha... = Completely disagree OR = Do not agree

☐ My company prefers to outsource those services to separate companies

My company would be interested in using an outsourcing company to provide and install all the cha... = Neither agree nor disagree

☐ If my company acquires (additional) electric vehicles

My company would be interested in using an outsourcing company to provide and install all the cha... = Neither agree nor disagree

☐ Depends on the price of the services mentioned above

My company would be interested in using an outsourcing company to provide and install all the cha... = Agree OR = Completely agree

☐ My company is already looking for this kind of service

My company would be interested in using an outsourcing company to provide and install all the cha... = Agree OR = Completely agree

☐ My company is not happy with our current charging solution

My company would be interested in using an outsourcing company to provide and install all the cha... = Agree OR = Completely agree

☐ It sounds like a very convenient solution

My company would be interested in using an outsourcing company to provide and install all the cha... = Agree OR = Completely agree

☐ Using only one company to provide all of the services mentioned previously would allow my company to reduce costs

☐ Other: _____

My company would be interested in paying for consultancy services from a company that also provides and installs all the charging infrastructure as well as provides additional services (a combination of the services mentioned in the two previous questions).

- ☐ Completely disagree
- ☐ Do not agree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Completely agree

Who would your company contact for this kind of services?

End of Block: [VALUE PROPOSITION – CHARGING POWER]

Start of Block: [VALUE PROPOSITION – FULL POWER]

To which extent do you agree with the following statements:

My company would be interested in using an outsourcing company to provide a full mobility solution (which means: consultancy services for the electrification of the fleet, providing the electric vehicles and all the charging infrastructure, managing my company's electric vehicles fleet, etc.).

- ☐ Completely disagree
- ☐ Do not agree

☐ Neither agree nor disagree

☐ Agree

☐ Completely agree

Why would your company (not) be interested in using an outsourcing company to provide a full mobility solution?

My company would be interested in using an outsourcing company to provide a full mobility solution... = Completely disagree OR = Do not agree

☐ My company has the expertise to perform the services mentioned above

My company would be interested in using an outsourcing company to provide a full mobility solution... = Completely disagree OR = Do not agree

☐ My company has already required this kind of service

My company would be interested in using an outsourcing company to provide a full mobility solution... = Completely disagree OR = Do not agree

☐ My company is not interested in adopting electric vehicles

My company would be interested in using an outsourcing company to provide a full mobility solution... = Completely disagree OR = Do not agree

☐ My company is happy with our current solution

My company would be interested in using an outsourcing company to provide a full mobility solution... = Completely disagree OR = Do not agree

☐ My company prefers to outsource those services to separate companies

My company would be interested in using an outsourcing company to provide a full mobility solution... = Neither agree nor disagree

☐ If my company is considering to acquire (additional) electric vehicles

My company would be interested in using an outsourcing company to provide a full mobility solution... = Neither agree nor disagree

☐ Depends on the price of the services mentioned above

My company would be interested in using an outsourcing company to provide a full mobility solution... = Agree OR = Completely agree

☐ My company is already looking for this kind of service

My company would be interested in using an outsourcing company to provide a full mobility solution... = Agree OR = Completely agree

- ☐ My company is not happy with our current solution

My company would be interested in using an outsourcing company to provide a full mobility solution... = Agree OR = Completely agree

- ☐ It sounds like a very convenient solution

My company would be interested in using an outsourcing company to provide a full mobility solution... = Agree OR = Completely agree

- ☐ Using only one company to provide all of the services mentioned previously would allow my company to reduce costs

- ☐ Other: _____

My company would be interested in using a mobility card that would allow the employees to use several kinds of transportation (electric bikes, electric scooters, electric carsharing etc.) as well as paying for the energy for the electric vehicles.

- ☐ Completely disagree
- ☐ Do not agree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Completely agree

Why would your company (not) be interested in using a mobility card that allows employees to use several kinds of transportation as well as paying for their electrical vehicle's energy?

My company would be interested in using a mobility card that would allow the employees to use sev... = Agree OR = Completely agree

- ☐ It is something we have been looking for

My company would be interested in using a mobility card that would allow the employees to use sev... = Agree OR = Completely agree

☐ I think it is the future

My company would be interested in using a mobility card that would allow the employees to use sev... = Neither agree nor disagree

☐ I am not sure how it would work

My company would be interested in using a mobility card that would allow the employees to use sev... = Neither agree nor disagree

☐ Depending on the price of the card

My company would be interested in using a mobility card that would allow the employees to use sev... = Neither agree nor disagree

☐ Depending on the transports provided

My company would be interested in using a mobility card that would allow the employees to use sev... = Completely disagree OR = Do not agree

☐ My company does not provide transportation benefits to the employees

My company would be interested in using a mobility card that would allow the employees to use sev... = Completely disagree OR = Do not agree

☐ My company's employees do not use other types of transports, they only use company cars

☐ Other: _____

End of Block: [VALUE PROPOSITION – FULL POWER]

Start of Block: MOBILITY SOLUTIONS

What is the average daily distance travelled by the passenger vehicles in your company's fleet?

☐ < 50 km

☐ 50 - 99 km

☐ 100 - 200 km

☐ 201 - 300 km

☐ > 300 km

Carsharing is a service offered through a membership program that intends to give an alternative to car ownership. Persons or entities that become members are permitted to use vehicles from a fleet for short periods of time. The vehicles are available in several locations and the user only pays for their usage (usually on a time basis).

How often does your company use a carsharing service?

- ☐ Never
- ☐ Occasionally
- ☐ Frequently
- ☐ I do not know

Display This Question:

If How often does your company use a carsharing service? = Occasionally OR = Frequently

What carsharing companies has your company worked with before?

Display This Question:

If How often does your company use a carsharing service? = Never

Would your company consider using a carsharing service in the future?

- ☐ Yes
- ☐ No
- ☐ I do not know

Display This Question:

If Would your company consider using a carsharing service in the future? = Yes

For which reasons would your company consider using a carsharing service in the future?

- ☐ Price
- ☐ Convenience (e.g., booking and payment via app)

- ☐ Comfort (e.g., vehicle quality)
- ☐ Other: _____

Display This Question:

If Would your company consider using a carsharing service in the future? = No

For which reasons would your company not consider using a carsharing service?

- ☐ Do not know the service
- ☐ My company's car policy does not allow it
- ☐ Have a company car
- ☐ Cannot guarantee employees' security
- ☐ Other: _____

Does your company use some kind of internal carsharing (e.g., pool cars)? (This question does not refer to employees giving each other rides or using the same car at the same time to save costs.)

- ☐ Yes
- ☐ No
- ☐ I do not know

To which extent do you agree with the following statements:

My company would be interested in implementing an internal carsharing system with which employees could book company cars for professional trips during the working day, but also for private trips during the weekends or to commute (and pay themselves for these private trips).

- ☐ Completely disagree
- ☐ Do not agree

☐ Neither agree nor disagree

☐ Agree

☐ Completely agree

Why would your company (not) be interested in implementing an internal carsharing system?

My company would be interested in implementing an internal carsharing system with which employees... = Agree OR = Completely agree

☐ The company could save money with that

My company would be interested in implementing an internal carsharing system with which employees... = Agree OR = Completely agree

☐ It would offer additional value and opportunities to employees

My company would be interested in implementing an internal carsharing system with which employees... = Agree OR = Completely agree

☐ I think it is the future

My company would be interested in implementing an internal carsharing system with which employees... = Neither agree nor disagree

☐ Depends on how exactly the service would work

My company would be interested in implementing an internal carsharing system with which employees... = Neither agree nor disagree

☐ Depends on the potential savings for my company

My company would be interested in implementing an internal carsharing system with which employees... = Completely disagree OR = Do not agree

☐ My company would never consider a carsharing service

My company would be interested in implementing an internal carsharing system with which employees... = Completely disagree OR = Do not agree

☐ Offering this service brings no advantages

My company would be interested in implementing an internal carsharing system with which employees... = Completely disagree OR = Do not agree

☐ There could be problems with ensuring the availability of the cars if employees can also use them for private trips (e.g., if they do not arrive on time in the morning)

☐ Other: _____

Display This Question:

If Why would your company (not) be interested in implementing an internal carsharing system? = The company could save money with that

Or Why would your company (not) be interested in implementing an internal carsharing system? = It would offer additional value and opportunities to employees

Or Why would your company (not) be interested in implementing an internal carsharing system? = I think it is the future

Would your company still be interested if these cars were electric?

- ☐ Yes
- ☐ No
- ☐ I do not know

Display This Question:

If Would your company still be interested if these cars were electric? = No OR = I do not know

Why would your company not be interested if the cars were electric?

- ☐ Depends on the potential savings for my company
- ☐ Charging could be an issue
- ☐ The autonomy of the cars could be an issue
- ☐ Not all vehicle models my company wants to use are available as electric versions
- ☐ Other: _____

My company would be interested in sharing cars with several companies in the same area (e.g., business park) in order to reduce the associated cars' costs.

- ☐ Completely disagree
- ☐ Do not agree

☐ Neither agree nor disagree

☐ Agree

☐ Completely agree

Why would your company (not) be interested in sharing cars with several companies in the same area?

My company would be interested in sharing cars with several companies in the same area (e.g., bu... = Agree OR = Completely agree

☐ The company could save money with that

My company would be interested in sharing cars with several companies in the same area (e.g., bu... = Agree OR = Completely agree

☐ It would offer additional value and opportunities to employees

My company would be interested in sharing cars with several companies in the same area (e.g., bu... = Agree OR = Completely agree

☐ I think it is the future

My company would be interested in sharing cars with several companies in the same area (e.g., bu... = Agree OR = Completely agree

☐ It make sense since we share the same business park/garage/parking lot

My company would be interested in sharing cars with several companies in the same area (e.g., bu... = Neither agree nor disagree

☐ Depends on how exactly the service would work

My company would be interested in sharing cars with several companies in the same area (e.g., bu... = Neither agree nor disagree

☐ Depends on the potential savings for my company

My company would be interested in sharing cars with several companies in the same area (e.g., bu... = Completely disagree OR = Do not agree

☐ My company would never consider a carsharing service

My company would be interested in sharing cars with several companies in the same area (e.g., bu... = Completely disagree OR = Do not agree

☐ Offering this service brings no advantages

My company would be interested in sharing cars with several companies in the same area (e.g., bu... = Completely disagree OR = Do not agree

☐ Employees will not like to share the same cars with other companies (even though it would not be at the same time)

My company would be interested in sharing cars with several companies in the same area (e.g., bu... = Completely disagree OR = Do not agree

☐ My company's vehicles are already being used in an efficient way

☐ Other: _____

Would your company still be interested if these cars were electric?

☐ Yes

☐ No

☐ I do not know

Display This Question:

If Would your company still be interested if these cars were electric? != Yes

Why would your company not be interested anymore if these cars were electric?

☐ Depends on the potential savings for my company

☐ Charging could be an issue

☐ The autonomy of the cars could be an issue

☐ Not all vehicle models my company wants to use are available as electric versions

☐ Other: _____

How well informed do you consider yourself regarding electric mobility solutions?

☐ Not informed

☐ Not well informed

☐ Relatively well informed

- ☐ Well informed
- ☐ Very well informed

End of Block: MOBILITY SOLUTIONS

Start of Block: All Targets (wrap-up)

How many employees does your company have in Portugal?

- ☐ 1 - 10
- ☐ 11 - 50
- ☐ 51 - 200
- ☐ 201 - 500
- ☐ 501 - 2000
- ☐ > 2000

What is the sector of your company?

- ☐ Agriculture, Forestry and Fishing
- ☐ Mining and Quarrying
- ☐ Manufacturing
- ☐ Electricity, Gas, Steam and Air-Conditioning supply
- ☐ Water supply, Sewerage, Waste Management and Remediation
- ☐ Construction
- ☐ Wholesale and Retail Trade, Repair of motor vehicles and motorcycles
- ☐ Transportation and Storage
- ☐ Accommodation and Food Service activities
- ☐ Information and Communication (Telecommunications and IT included)

- ☐ Financial and Insurance activities
- ☐ Real Estate activities
- ☐ Professional, Scientific and Technical activities (Legal, Accounting, Management and Architecture activities)
- ☐ Administrative and Support Service activities
- ☐ Public Administration and Defence, Compulsory Social Security
- ☐ Education
- ☐ Human Health services
- ☐ Arts, Entertainment and Recreation
- ☐ Other: _____

How many offices does your company have in Portugal?

- ☐ 1
- ☐ 2 - 3
- ☐ 4 - 5
- ☐ > 5

Where in Portugal is your company located?

- ☐ North
- ☐ Center
- ☐ South
- ☐ Lisbon

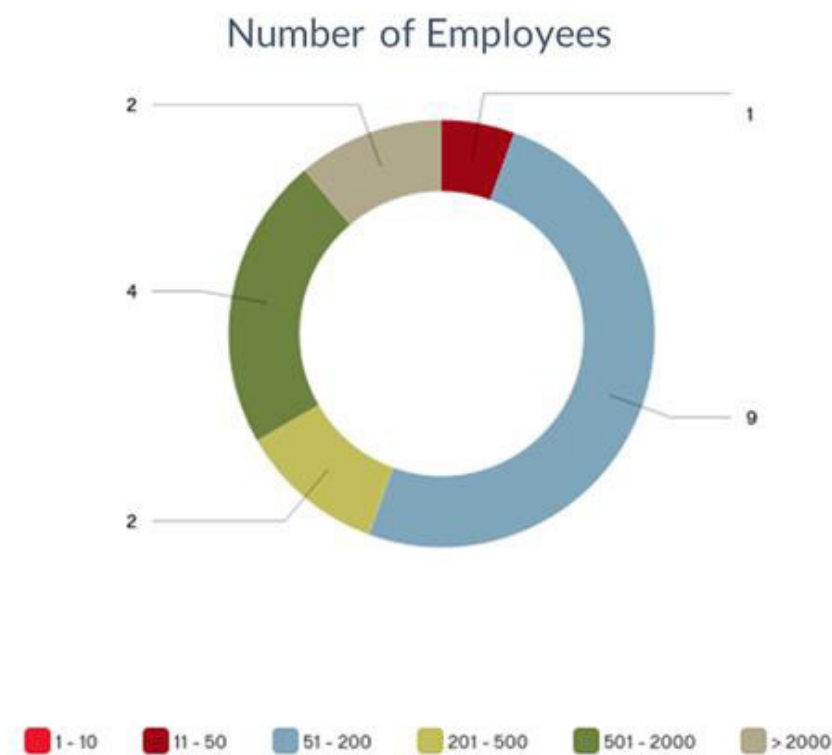
Which of the following characteristics applies to your parking space?

- ☐ Owned
- ☐ Rented
- ☐ Business Park

End of Block: All Targets (wrap-up)

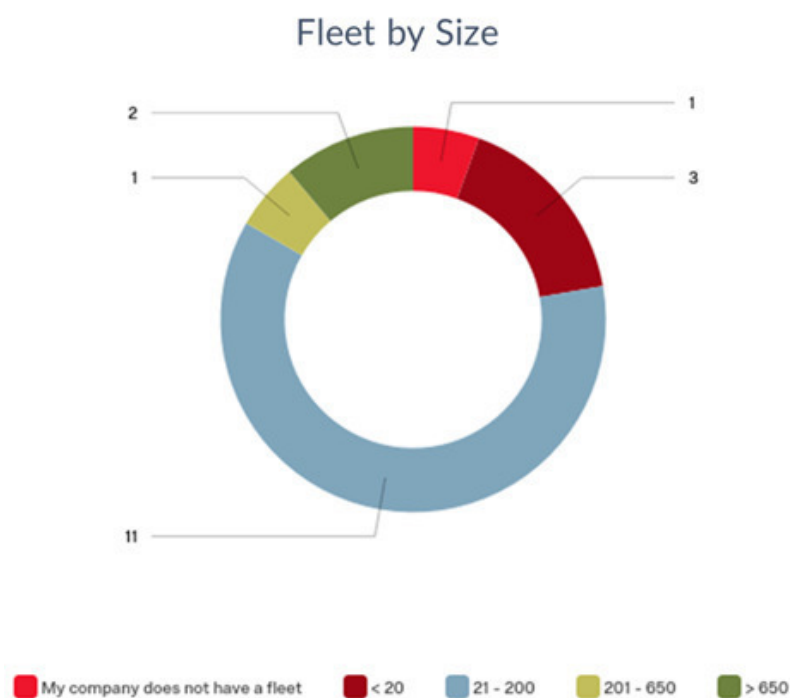
Source: Authors' Own Creation

Appendix 31 – Sample Characterization Questionnaire 2: Size of the Companies



Source: Authors' Own Creation

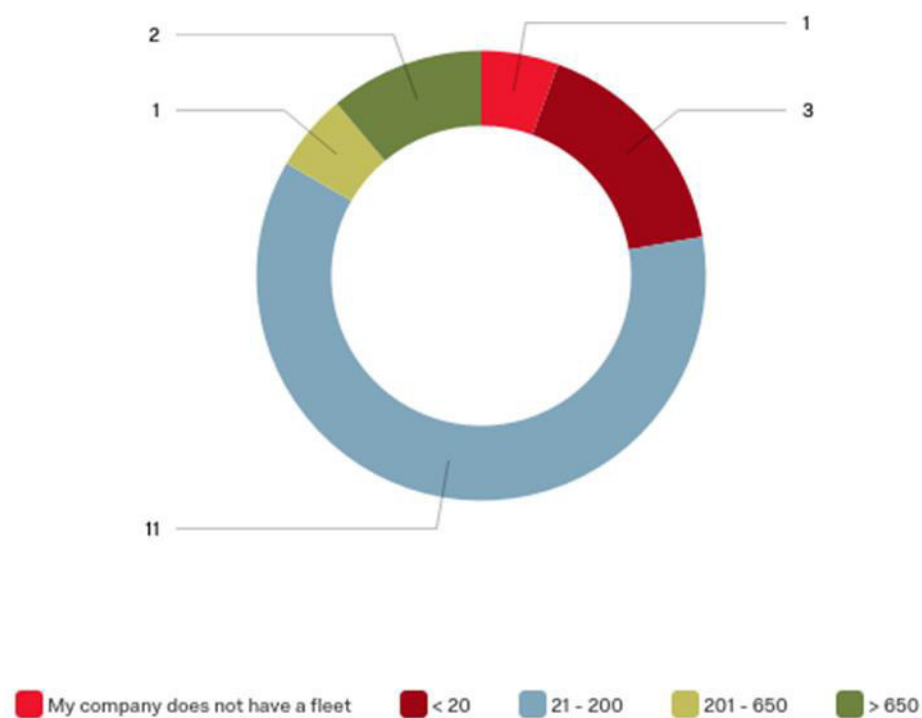
Appendix 32 – Sample Characterization Questionnaire 2: Fleet Size of the Companies



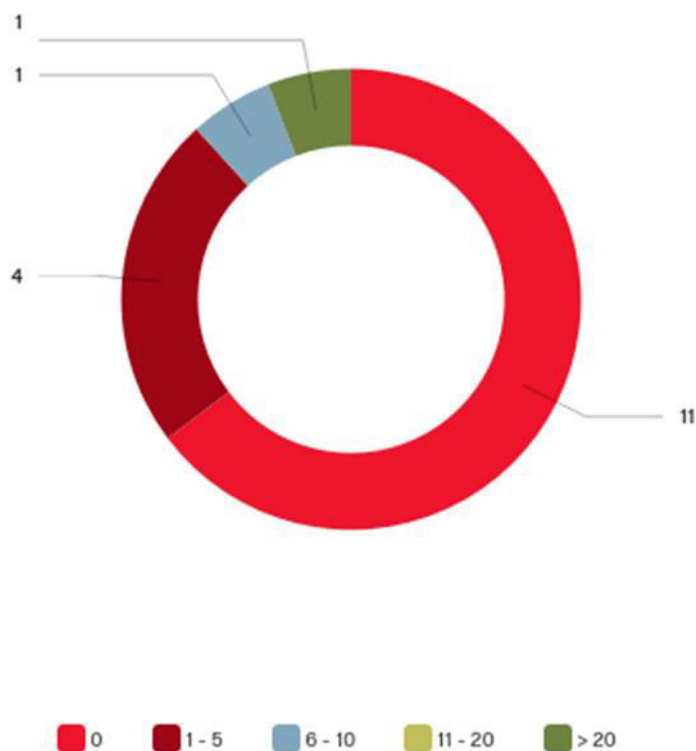
Source: Authors' Own Creation

Appendix 33 – Results Questionnaire 2

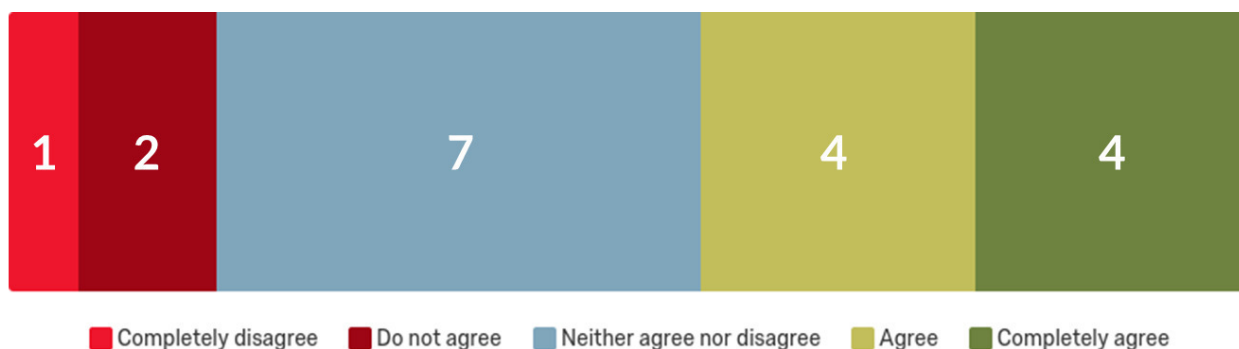
How many vehicles does your company have in its fleet?



How many Electric Vehicles (100% electric & plug-in hybrids) does your company have in its fleet?



My company would be interested in requiring consultancy services to find an optimal charging solution.



Why would your company (not) be interested in requiring consultancy services to find an optimal charging solution?

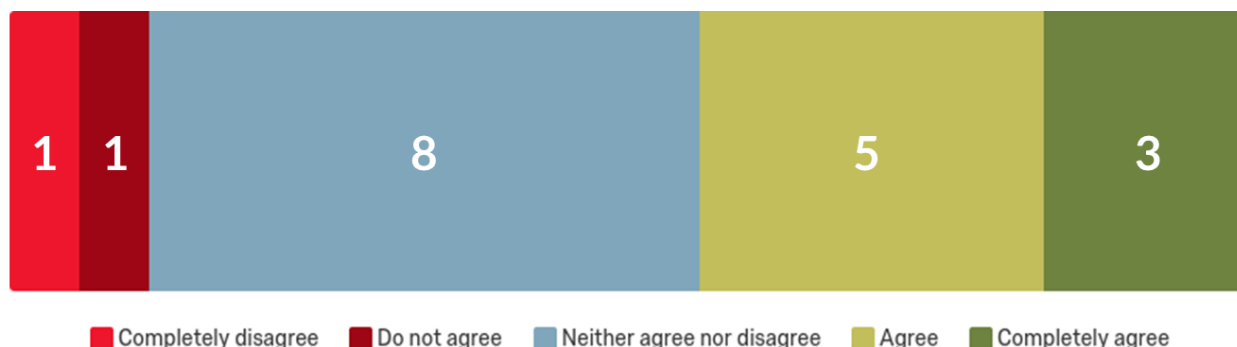
Reasons why companies are not interested:

- 4 My company's parking space is rented, so it is the landlord's decision
- 1 My company is not interested in having charging stations

Reasons why companies are interested:

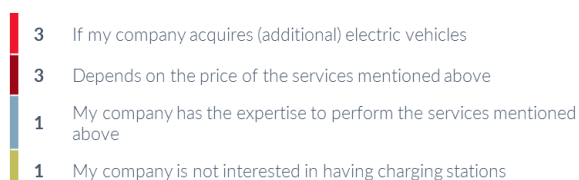
- 4 My company is already looking for this kind of consultancy service
- 3 My company does not have the expertise to choose the optimal charging solution to fulfil our needs

My company would be interested in using an outsourcing company to provide and install all the charging infrastructure as well as provide additional services (e.g., maintenance, assistance, charging management).



Why would your company (not) be interested in using an outsourcing company to provide and install all the charging infrastructure as well as provide additional services?

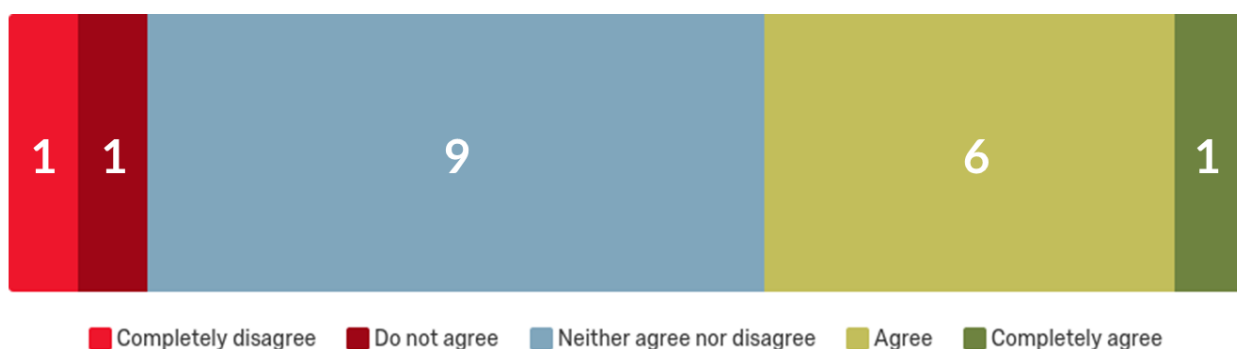
Reasons why companies are not / might be interested:



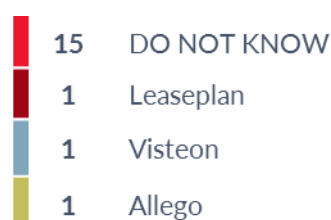
Reasons why companies are interested:



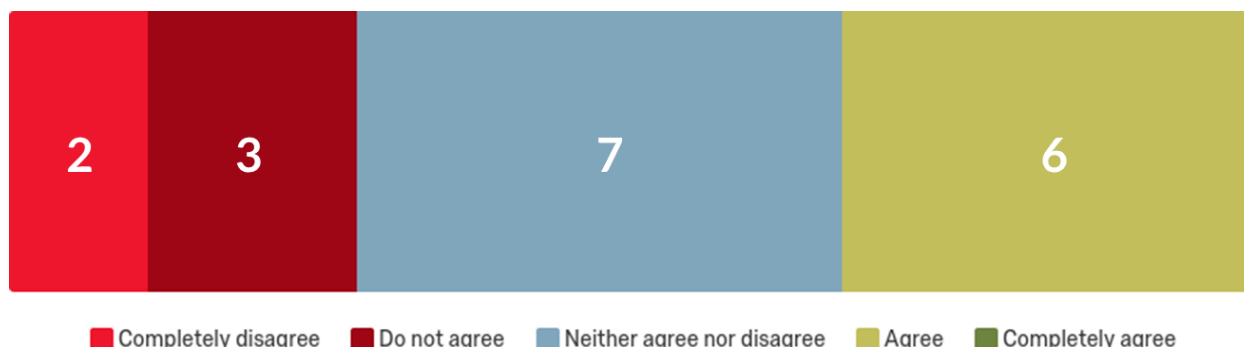
My company would be interested in paying for consultancy services from a company that also provides and installs all the charging infrastructure as well as provides additional services (a combination of the services mentioned in the two previous questions).



Who would your company contact for this kind of services?

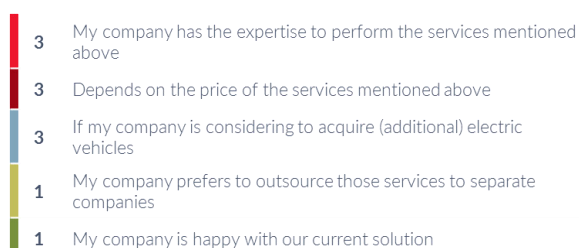


My company would be interested in using an outsourcing company to provide a full mobility solution (which means: consultancy services for the electrification of the fleet, providing the electric vehicles and all the charging infrastructure, managing my company's electric vehicles fleet, etc.).

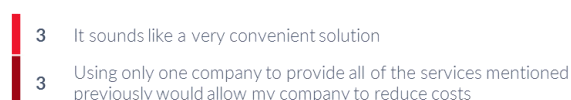


Why would your company (not) be interested in using an outsourcing company to provide a full mobility solution?

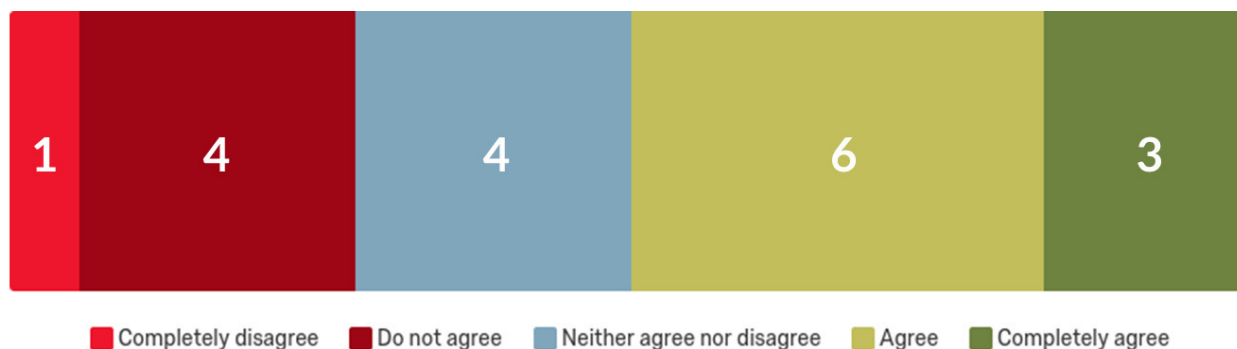
Reasons why companies are not / might be interested:



Reasons why companies are interested:



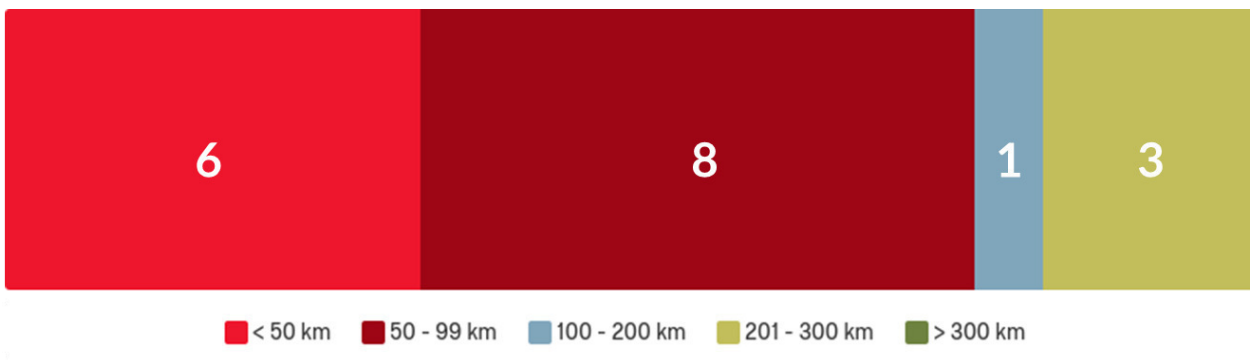
My company would be interested in using a mobility card that would allow the employees to use several kinds of transportation (electric bikes, electric scooters, electric carsharing etc.) as well as paying for the energy for the electric vehicles.



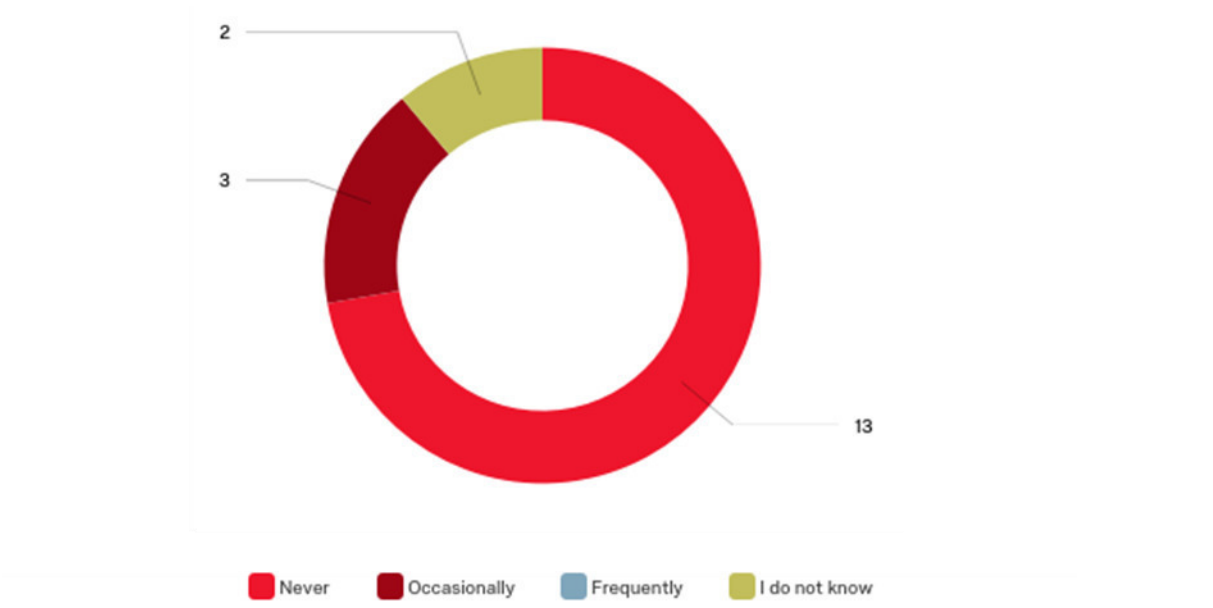
Why would your company (not) be interested in using a mobility card that allows employees to use several kinds of transportation as well as paying for their electrical vehicle's energy?



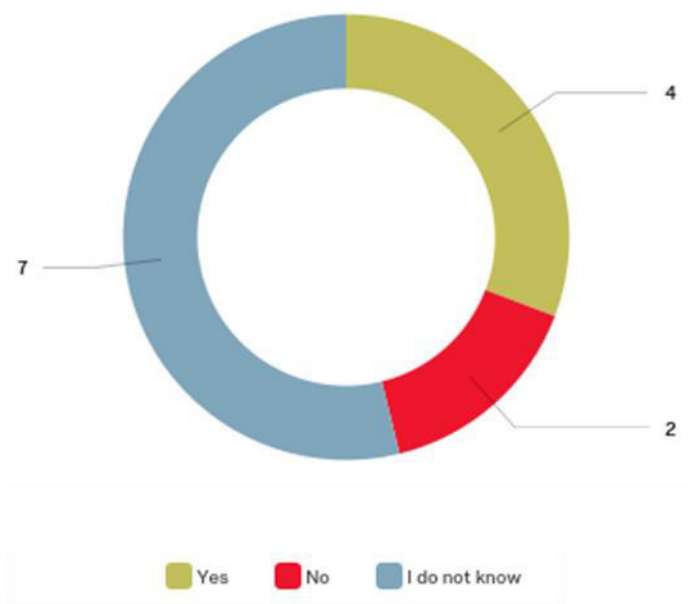
What is the average daily distance travelled by the passenger vehicles in your company's fleet?



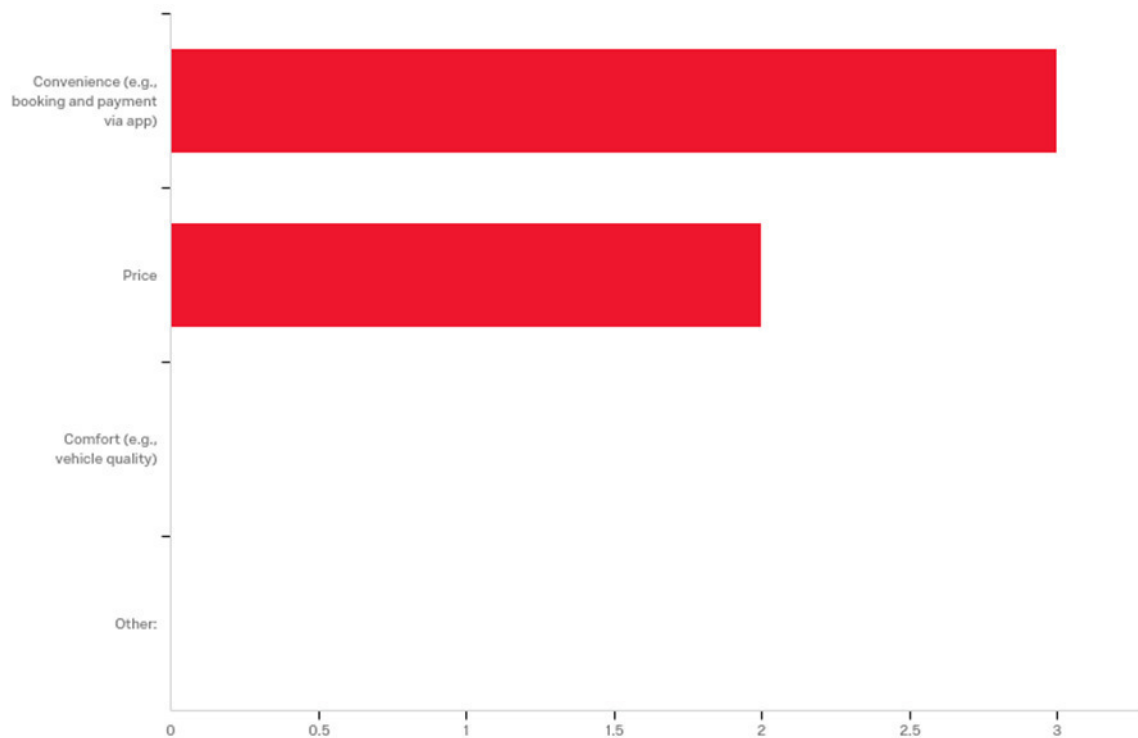
How often does your company use a carsharing service?



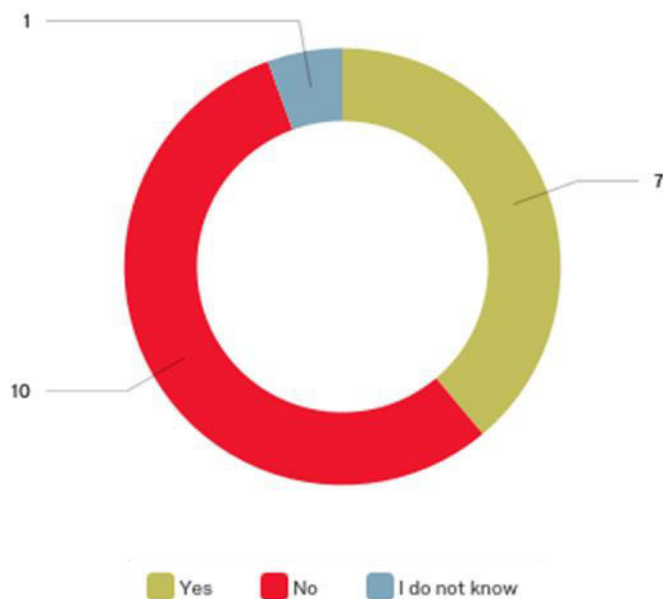
Would your company consider using a carsharing service in the future?



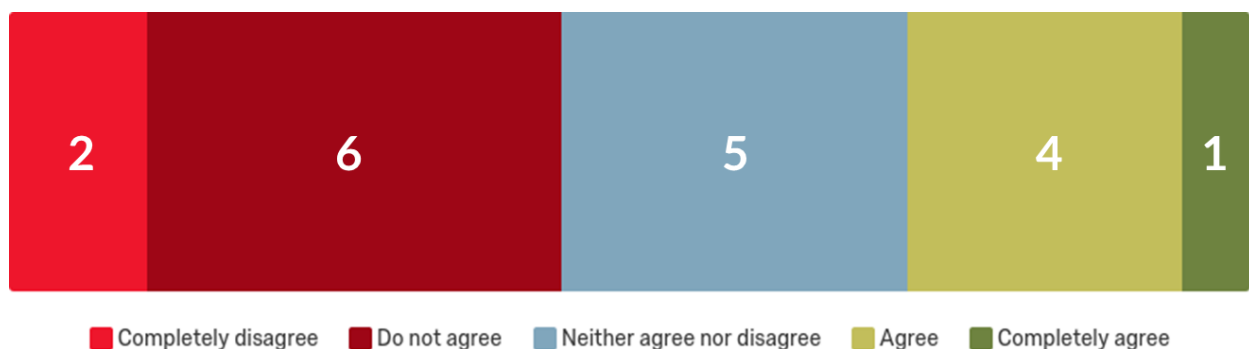
For which reasons would your company consider using a carsharing service in the future?



Does your company use some kind of internal carsharing (e.g., pool cars)? (This question does not refer to employees giving each other rides or using the same car at the same time to save costs.)

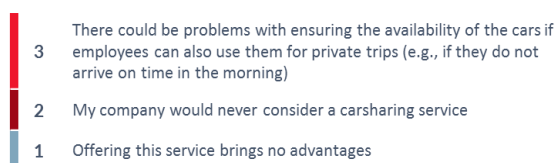


My company would be interested in implementing an internal carsharing system with which employees could book company cars for professional trips during the working day, but also for private trips during the weekends or to commute (and pay themselves for these private trips).

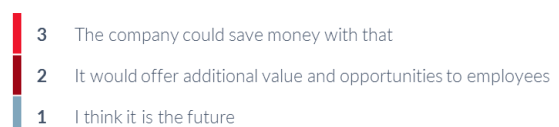


Why would your company (not) be interested in implementing an internal carsharing system?

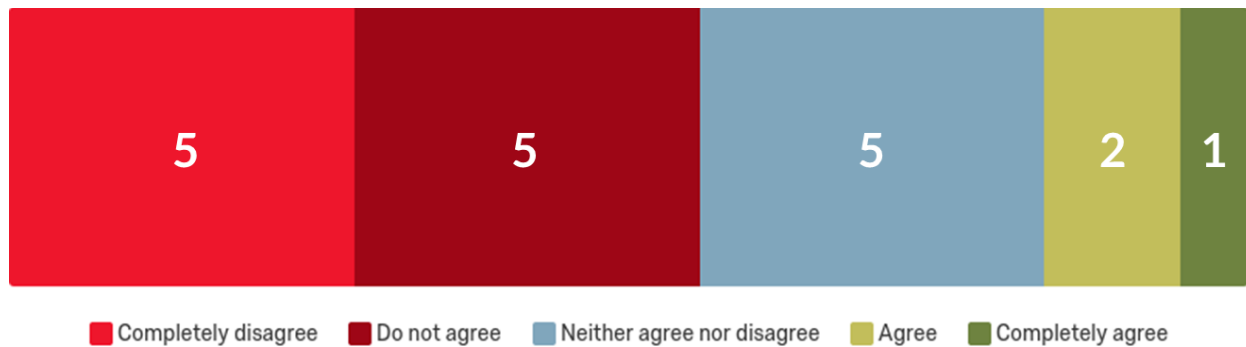
Reasons why companies are not interested:



Reasons why companies are interested:

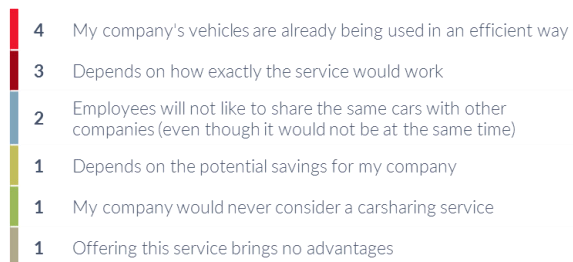


My company would be interested in sharing cars with several companies in the same area (e.g., business park) in order to reduce the associated cars' costs.

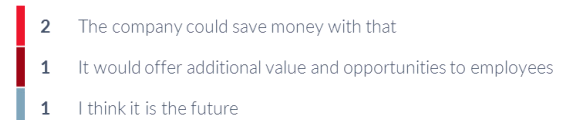


Why would your company (not) be interested in sharing cars with several companies in the same area?

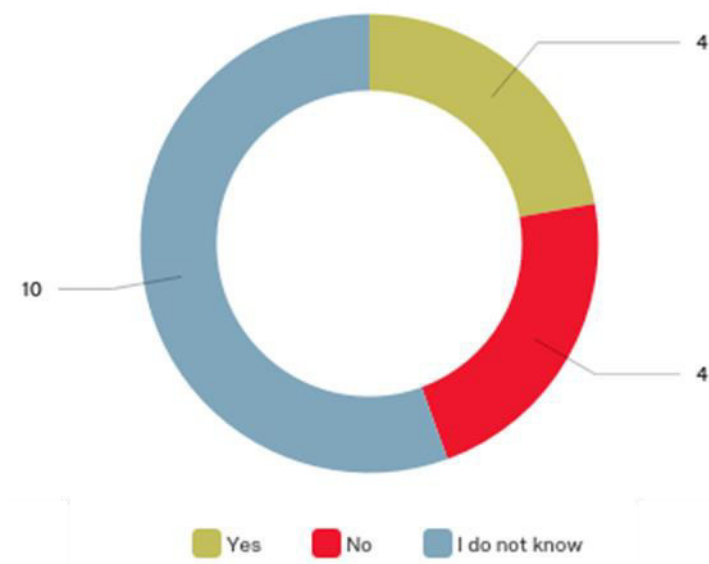
Reasons why companies are not / might be interested:



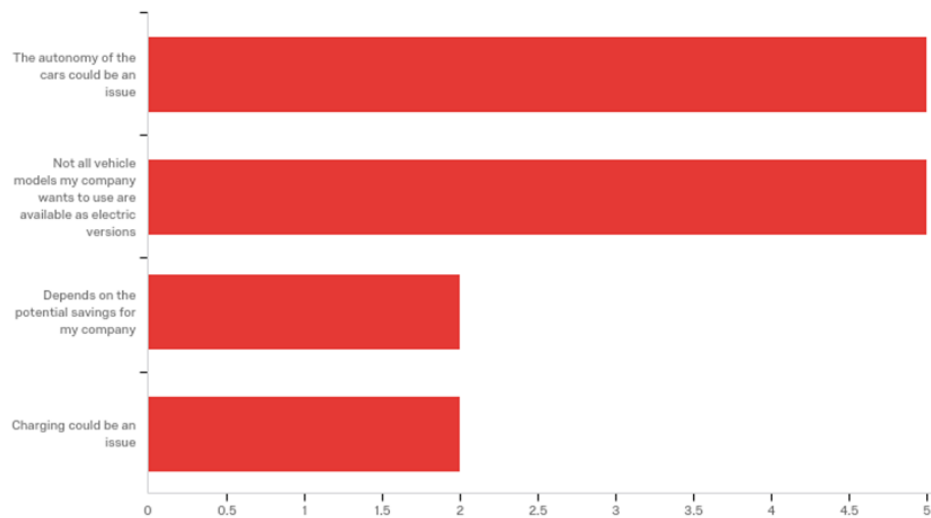
Reasons why companies are interested:



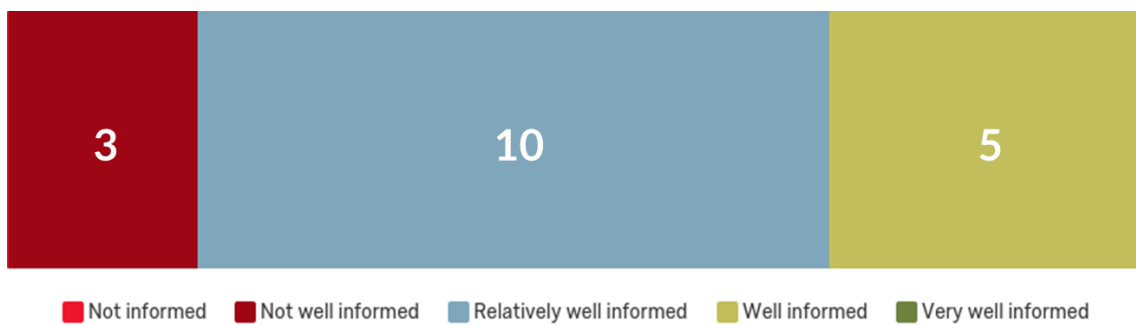
Would your company still be interested if these cars were electric?



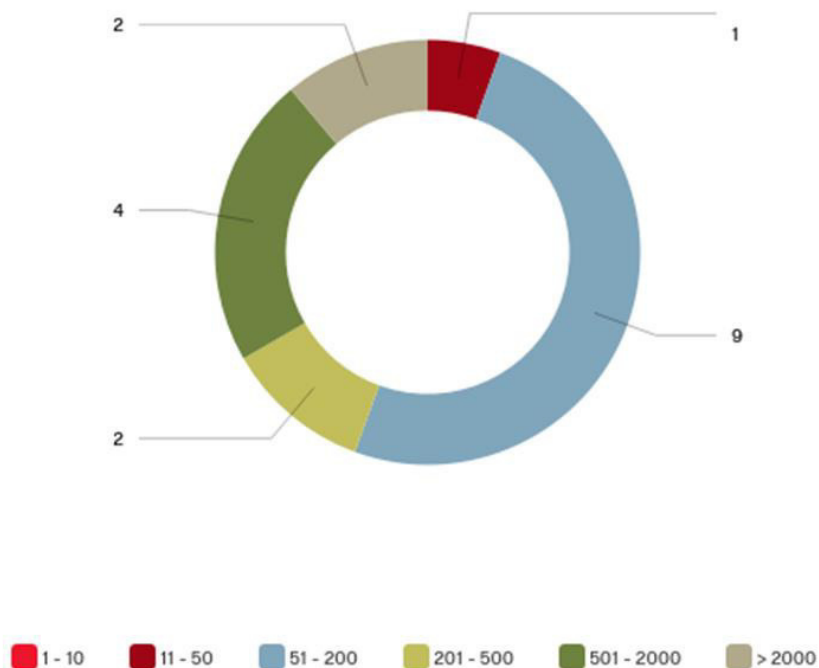
Why would your company not be interested anymore if these cars were electric?



How well informed do you consider yourself regarding electric mobility solutions?



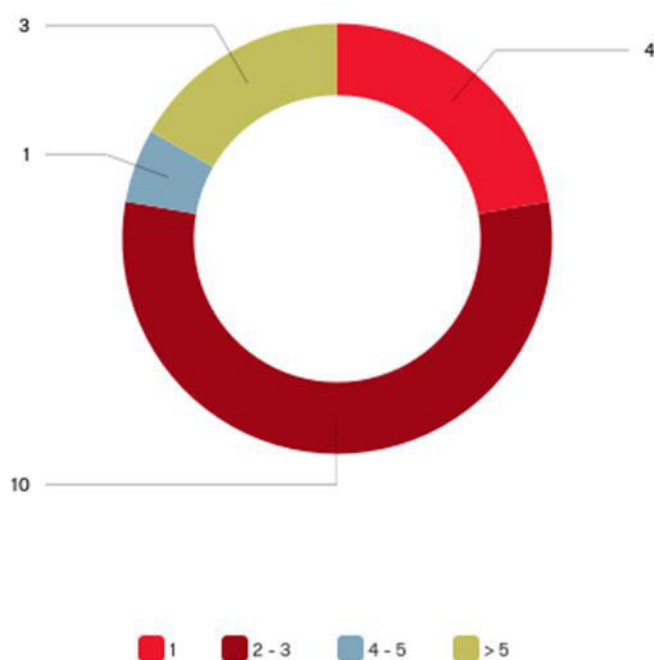
How many employees does your company have in Portugal?



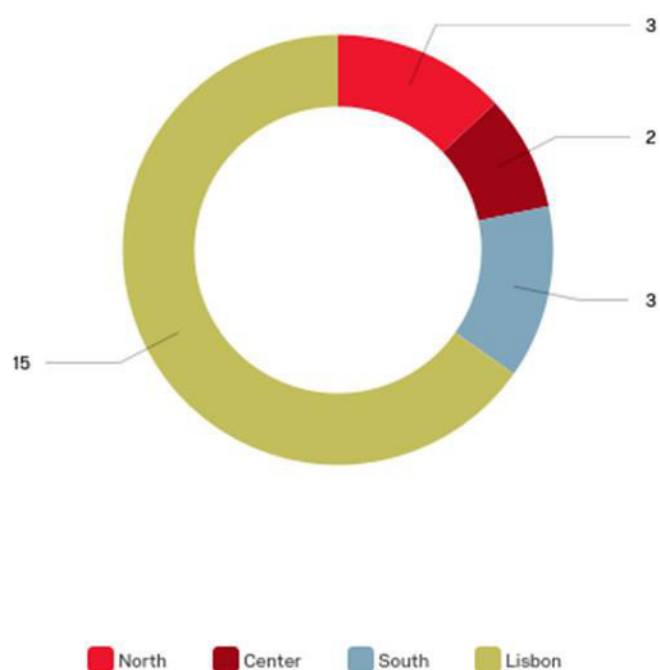
What is the sector of your company?



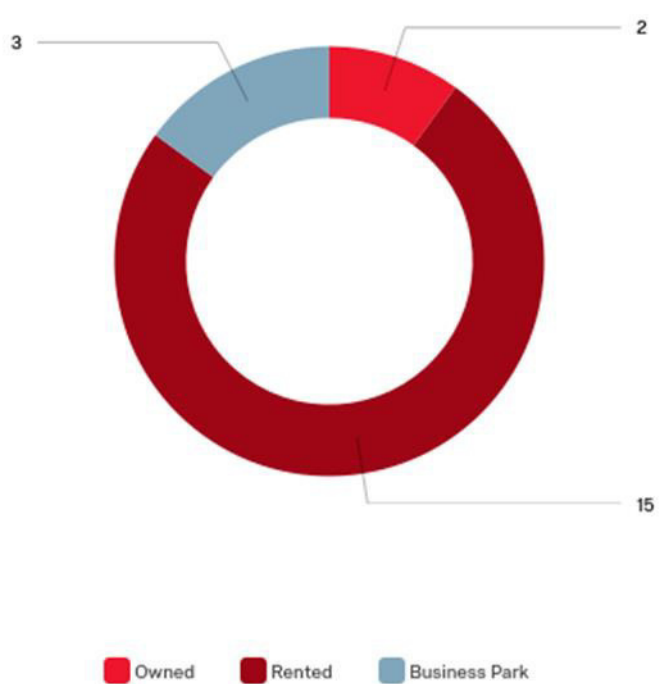
How many offices does your company have in Portugal?



Where in Portugal is your company located?



Which of the following characteristics applies to your parking space?



Source: Authors' Own Creation

Appendix 34 – Target Market Selection

TARGET MARKET SELECTION	S1	S2	S3
Accessibility	5,00	4,00	2,00
Expected Profitability	5,00	3,00	1,00
Segment Size	4,00	5,00	3,00
Responsiveness	4,00	4,00	1,00
Company's Fit	5,00	5,00	5,00
Competition Intensity	3,00	3,00	3,00
TOTAL	26,00	24,00	15,00

S1 – Large companies with a fleet

S2 – SMEs with a fleet

S3 – SMEs without a fleet

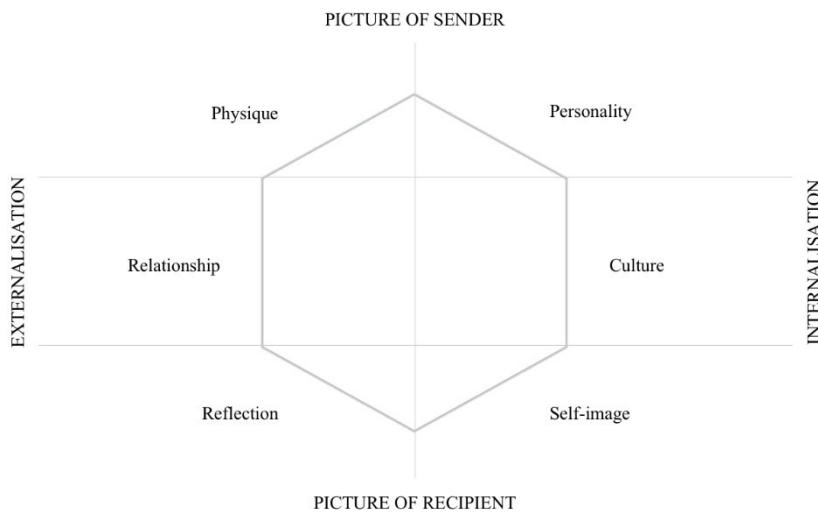
Source: Authors' Own Creation according to Gupta (2014) and Hutt and Speh (2013)

Appendix 35 – Positioning Map



Source: Authors' Own Creation according to Wirtz and Lovelock (2016)

Appendix 36 – Brand Identity Prism



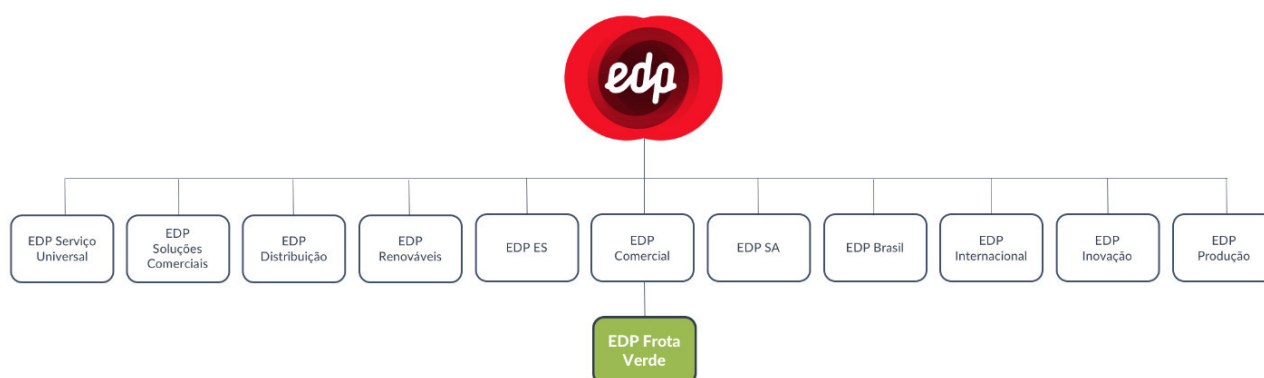
Source: Kapferer (2012)

Appendix 37 – EDP Frota Verde's Identity Prism



Source: Authors' Own Creation according to Kapferer (2012)

Appendix 38 – EDP's Brand Architecture



Source: Authors' Own Creation

Appendix 39 – Sample floor charging station



2x22kW Floor Charger Geminus (Sample charger)

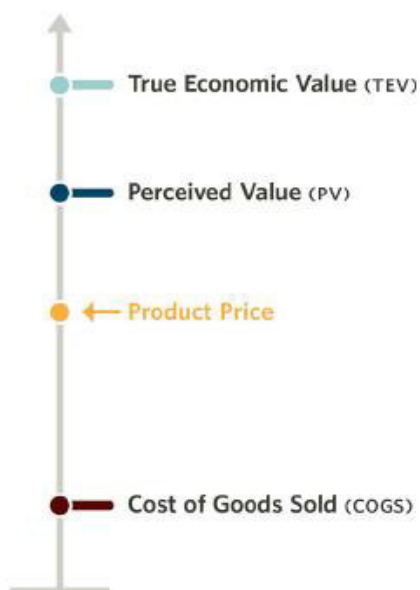
Source: ZEEV (n.d.a)

Appendix 40 – Charging modes for EVs

Charging modes	
Mode 1	Domestic socket and extension cord: usually for motorcycles and similar vehicles, not recommended for cars (3,7 kW)
Mode 2	Domestic socket and cable with a protection device: more expensive then mode 1
Mode 3	Specific socket on a dedicated circuit: the installation (Electric Vehicle Supply Equipment - EVSE) has a permanent protection function and the sockets can be Mennekes or SAE J1772
Mode 4	Direct current (DC) connection: fast charging (>50kW) CHAdeMO

Source: Authors' Own Creation according to LugEnergy (n.d.)

Appendix 41 - Value Thermometer with average calculations



Note: COGS in this case are referred to as costs, since in order to calculate the TEV, the renting options for chargers is used.

Source: Authors' Own Creation according to Dolan and Gourville (2014)

Appendix 42 – Total Cost of Ownership (TCO)

TCO Analysis and Explanation

The TCO represents the total cost of an asset including all the expenses that are related to it and that go beyond the purchase price (Hutt and Speh, 2013). For the purpose of this thesis, the TCO of the vehicles was calculated assuming the vehicles are financed through operational leasing. Operational leasing means there is a contract wherein the owner (lessor) permits the user (lessee) to use an asset for a particular period which is shorter than the economic life of an asset without any transfer of ownership rights. The lessor gives the right to the lessee in return for regular payments (rents) for an agreed period of time (The Economic Times n.d.). The rent of the operational leasing of a vehicle is a major part of the TCO and it usually includes: maintenance, insurance, tires, vehicle's substitution, 24h assistance, guarantee and Tax of Circulation (*IUC – Imposto Único de Circulação*) (LeasePlan 2015).

This means that for calculating the TCO of a vehicle in the case of operational leasing, one can use the rent, add consumption and account for the fiscal advantages (concerning both rents and consumption). The values used in this exercise were taken from LeasePlan, ZEEV, EDP SU, ERSE, *Preços dos Combustíveis Online* and each manufacturer's website concerning the rents for the vehicles, the electricity cost, the diesel costs, and the acquisition value of each vehicle.

The calculations for the different elements of the TCO are explained below:

Annual Rent:

- Monthly rent values * 12.
- E.g. in the case of a Nissan Leaf and a Ford Focus this value adds up to 6,031€ and 4,233€ respectively (the values for the Nissan Leaf are without VAT because it is deductible). (A)

Consumption:

- Assuming 25,000km per year, the electricity and diesel costs and each vehicle's autonomy.
- E.g. a Nissan Leaf, to do 100km, needs 12kWh, which costs 1.17€. In a year (252 working days, 25,000km), this amounts to 292€. A Ford Focus has a consumption of 4.3L per 100km, which results in costs of 5.76€/100km (for a diesel price of 1.34€ per liter), amounting to 1,439€ per year (B) (Table 4).

Fiscal Advantages:

- The fiscal advantages that can be accounted are the VAT deduction and the reduction in the IRC (Tax on Corporate Income – *Imposto sobre o Rendimento de Pessoas Coletivas*) tax for BEVs in depreciations and Autonomous Taxation (*TA - Tributação Autónoma*) (Table 2).
- Regarding the VAT, it is possible to deduct 100% of the VAT for the rent and consumption of electric vehicles (LeasePlan 2015) E.g. for a Nissan Leaf, this amounts to 1,182€ to receive at the end of the fiscal year (C).
- Regarding the IRC, the depreciations were calculated. Since this is a case of operational leasing, and according to Circular nº 24/1991 of the 19th of December, the only value that can be accepted as a depreciation cost are the depreciations that are not included in the rent and that correspond to the vehicle itself and not to the services included in a rent (assumed as 60% of a rent) (D1) that will be lower than the amortization if the vehicle was acquired in full by the company (D2) (Direção de Serviços do IRC 1991; Millenium BCP 2012).
 - E.g. for a Nissan Leaf, if the vehicle was bought by the company, the maximum amortization value would be $25\% * \text{Acquisition Value (D2)}$ which is 5,028€, but, since the vehicle is financed through operational leasing, the value that can be accepted as a depreciation cost is only $2,942\text{€} (60\% * \text{Annual Rent (D1)})$.

- However, according to Table 2, there is a maximum value for the depreciation of a vehicle that can be accounted (D3): in the case of a BEV this value is 62,500€ and in the case of an ICE vehicle it is only 25,000€. This means that there is another bound for the depreciation which will not make any changes in the Nissan Leaf example, but for an Audi A7 Sportback, it will. The maximum value accepted for an Audi A7 will be $25\% \times 25,000\text{€}$ which is 6,250€ (D3), even though, according to the amortization of the vehicle, it would be 19,593€ (D2) if the car was bought by the company or 9,455€ (D1) through operational leasing. So, in this case, only 6,250€ will be accepted and 3,205€ will not.
- This means that the maximum value accepted is the minimum value of D1, D2, and D3. And the IRC to pay will be the value that is NOT ACCEPTED (D).
- Still regarding the IRC, the tax related to Autonomous Taxation was calculated. According to Table 2, for different segments (determined by the acquisition value), ICEs will have to pay an extra tax of 10%, 27,5% or 35% on any expense with the car (rent and consumption). E.g. for a Ford Focus, this will mean an extra expense of 567€ per year.
- The total IRC to pay (E) will be the sum of the non-accepted value of the depreciations and the autonomous taxation paid on rents and consumption.

Summing up:

- The annual TCO of a vehicle financed with operational leasing is: the Annual Rent (with VAT) + the Cost of Annual Consumption + IRC to pay – VAT to recover.
- For a Nissan Leaf this value adds up to 5,140€ per year (6,031 + 292 + 0 – 1,182) and for a Ford Focus it adds up to 6,240€ (4,233 + 1,439 + 567 – 0), which means that switching from a Ford Focus to a Nissan Leaf represents yearly savings of 1,100€. This value increases as the acquisition value of the vehicle increases: By switching from an Audi A7 to a Tesla Model S, the yearly savings add up to 5,809€ (Table 3).

- The TCO was calculated for 3 types of vehicle segments and for both BEVs and ICE vehicles. Vehicles with a selling price below 25,000€ are defined as small segment (Nissan Leaf and Ford Focus), vehicles with a selling price between 25,000€ and 35,000€ are defined as medium segment (Renault ZOE and Renault Clio), and vehicles with a selling price above 35,000€ are defined as premium segment (Tesla Model S and Audi A7 Sportback).

Table 1: TCO Analysis

	<25k		25k-35k		>35k	
	EV	Diesel	EV	Diesel	EV	Diesel
	Nissan Leaf	Ford Focus	Renault ZOE	Renault Clio	Tesla Model S	Audi A7 Sportback
Selling price (w/ VAT)	€ 24 740	€ 24 348	€ 28 592	€ 25 320	€ 87 850	€ 78 371
Selling price (w/out VAT)	€ 20 114	€ 19 795	€ 23 246	€ 20 585	€ 71 423	€ 63 716
Rent (w/ VAT)	€ 503	€ 353	€ 807	€ 552	€ 1 845	€ 1 313
Rent (w/out VAT)	€ 409	€ 287	€ 656	€ 449	€ 1 500	€ 1 068
BEV battery capacity (kWh)	30	-	41	-	75	-
BEV autonomy (km)	250	-	300	-	490	-
Vehicle fuel consumption (L/100km)	-	4,3	-	3,5	-	4,5
Cost of consumption annual (B)	€ 292	€ 1 439	€ 333	€ 1 172	€ 373	€ 1 506
IRC - DEPRECIATIONS (ANNUAL)						
Annual Rent (w/ VAT) (A)	€ 6 031	€ 4 233	€ 9 680	€ 6 620	€ 22 136	€ 15 759
Annual Rent (w/out VAT) (A)	€ 4 903	-	€ 7 870	-	€ 17 997	-
Part of the rent that corresponds to the vehicle acquisition and can be depreciated (assumption: 60%) (D1)	€ 2 942	€ 2 540	€ 4 722	€ 3 972	€ 10 798	€ 9 455
MAXIMUM DEPRECIATION						
Max value per vehicle (25%*Acquisition Value) (D2)	€ 5 028	€ 6 087	€ 5 811	€ 6 330	€ 17 856	€ 19 593
Max value according to the fiscal criteria (25%*criteria) (D3)	€ 15 625	€ 6 250	€ 15 625	€ 6 250	€ 15 625	€ 6 250
Max value acceptable (lowest of the 2)	€ 5 028	€ 6 087	€ 5 811	€ 6 250	€ 15 625	€ 6 250
REAL DEPRECIATION ACCEPTED						
! ACCEPTED min (D1, D2, D3)	€ 2 942	€ 2 540	€ 4 722	€ 3 972	€ 10 798	€ 6 250
! NOT ACCEPTED (D1-ACCEPTED) = (D)	€ -	€ -	€ -	€ -	€ -	€ 3 205
AUTONOMOUS TAXATION						
From rents (E1)	€ -	€ 423	€ -	€ 1 820	€ -	€ 5 516
From consumption (E2)	€ -	€ 144	€ -	€ 322	€ -	€ 527
IRC TO PAY* (E)=E1+E2+D	€ -	€ 567	€ -	€ 2 143	€ -	€ 6 844
VAT - TO RECOVER (C)	€ 1 182	€ -	€ 1 872	€ -	€ 4 209	€ -
ANNUAL SPENDINGS (TCO) = A+B+E-C	€ 5 140	€ 6 240	€ 8 141	€ 9 934	€ 18 300	€ 24 109

Table 2: TCO Fiscal Advantages

	BEV	PHEV	ICE	Acquisition Value
IRC- TA	0.0%	5.0%	10.0%	<25 000€
	0.0%	10.0%	27.5%	25 000€-35 000€
	0.0%	17.5%	35.0%	>35 000€
Expenses with the vehicles				
IRC- Dep	62 500 €	50 000 €	25 000 €	
Maximum value				
IVA	100%	100%	0%	
Acquisition rent deductible				
	100%	100%	50%	
Consumption				

Table 3: TCO Savings – Annual Savings

	< 25,000€	25,000€ - 35,000€	> 35,000€
	Nissan Leaf vs Ford Focus	Renault ZOE vs Renault Clio	Tesla Model S vs Audi A7 Sportback
TOTAL	1 100 €	1 793 €	5 809 €

Table 4: TCO Consumption and Electricity Prices

	km	kWh	L	Average of the consumption price
Nissan Leaf	100 km	12 kWh	-	1.17 €
Renault Zoe	100 km	13.67 kWh	-	1.33 €
Tesla Model S	100 km	15.31 kWh	-	1.49 €
Ford Focus	-	-	4.3 L	5.76 €
Renault Clio	-	-	3.5 L	4.69 €
Audi A7 Sportback	-	-	4.5 L	6.03 €

Average of Energy & Diesel Prices

Prices:	
€/kWh BTE Full	€ 0.13
€/kWh BTE Super Empty	€ 0.08
€/kWh MT Full	€ 0.11
€/kWh MT Super Empty	€ 0.07
€/kWh Average Cost per kWh	€ 0.097
€/L (DIESEL)	€ 1.34
Assumptions:	
Long usage rate	
Prices on December 1, 2017	

Source: Authors' Creation according to: selling prices (Audi n.d.; Ford n.d.; Nissan n.d.; Renault n.d.a; Renault n.d.b.; and Tesla n.d.), renting prices (LeasePlan n.d. and ZEEV n.d.), VAT (Código do IVA 2016), fiscal advantages for EVs (Circular 1991; Millenium BCP 2012; LeasePlan 2015), energy prices (EDP SU 2017a&b; ERSE 2017) and diesel prices (Preços Combustíveis Online n.d.).

Appendix 43 - True Economic Value (TEV)

Equation 1: TEV Calculation

TEV = cost of the Next Best Alternative + value of the performance differential

TEV Calculation – Summary for the Nine Possible Options

	TEV	PV	COGS
Consultancy Simple + Cars Small Segment + Charging Rent	60 647 €	53 055 €	4 560 €
Consultancy Simple + Cars Medium Segment + Charging Rent	88 769 €	83 918 €	4 560 €
Consultancy Simple + Cars Premium Segment + Charging Rent	223 665 €	217 307 €	4 560 €
Consultancy Medium + Cars Small Segment + Charging Rent	123 404 €	107 975 €	7 600 €
Consultancy Medium + Cars Medium Segment + Charging Rent	179 648 €	169 703 €	7 600 €
Consultancy Medium + Cars Premium Segment + Charging Rent	449 440 €	436 479 €	7 600 €
Consultancy Complex + Cars Small Segment + Charging Rent	621 243 €	543 511 €	38 000 €
Consultancy Complex + Cars Medium Segment + Charging Rent	902 467 €	852 149 €	38 000 €
Consultancy Complex + Cars Premium Segment + Charging Rent	2 251 423 €	2 186 029 €	38 000 €

Note: This calculation is made for 9 possible combinations, according to consultancy complexity (simple, medium and complex) and car segments (small, medium and premium), each one taking into consideration the chargers ratio defined as one charger for four EVs. The extensive calculation of the TEV is explained in the next section. Regarding COGS, it only refers to chargers' costs per year taking into account the ratio of 1 charger for 4 EVs.

Assumptions:

- Consultancy Simple: 10 cars, 3 days of consultancy → 10 EVs, 3 chargers
- Consultancy Medium: 20 cars, 6 days of consultancy → 20 EVs, 5 chargers
- Consultancy Complex: 100 cars, 12 days of consultancy → 100 EVs, 25 chargers

TEV Overall Calculation

TEV: Value of Performance Differential (TCO Savings - *EDP Frota Verde*'s offering) + Next Best Alternative (ICEs' Rent + Cost of Fuel Consumption)

TEV	Value of Performance Differential (1)					Next Best Alternative (2)					(3) Total TEV (1 year out of 4)	
	Negative				Positive							
	Charger 22kW Floor Rent (annual rent) (1.1)	Consultancy (1.2)			Total 1 year (out of 4 years) (1.3)	Savings w/ EVs (1 out of 4 years) (Note: does not include chargers) (1.4)	ICEs Rent (annual spending) (w/ IVA) (2.1)			Cost of fuel consumption (2.2)		Total 1 year (out of 4 years) (2.3)
		Simple (10 cars)	Medium (20 cars)	Complex (100 cars)			Small segment	Medium segment	Premium segment			
2135 €	2700 €			7 080 €	10 997 €	4 233 €			1 439 €	56 729 €	60 647 €	
2135 €	2700 €			7 080 €	17 934 €		6 620 €		1 172 €	77 915 €	88 769 €	
2135 €	2700 €			7 079 €	58 094 €			15 759 €	1 506 €	172 650 €	223 665 €	
2135 €		5500 €		12 049 €	21 995 €	4 233 €			1 439 €	113 458 €	123 404 €	
2135 €		5500 €		12 049 €	35 868 €		6 620 €		1 172 €	155 830 €	179 648 €	
2135 €		5500 €		12 049 €	116 188 €			15 759 €	1 506 €	345 301 €	449 440 €	
2135 €			10600 €	56 021 €	109 974 €	4 233 €			1 439 €	567 291 €	621 243 €	
2135 €			10600 €	56 021 €	179 340 €		6 620 €		1 172 €	779 149 €	902 467 €	
2135 €			10600 €	56 021 €	580 941 €			15 759 €	1 506 €	1 726 504 €	2 251 423 €	

Note:

(1) Value of the Performance Differential

(1.1) **Chargers** (rented, floor, 22kW): price for 4-year contract is 8,539€/un → for 1-year it is 2,135€/un (8,539€/un/4 years)

(1.2) **Consultancy**: simple (2,700€), medium (5,500€) and complex (10,600€)

(1.3) **Subtotal** = Chargers*n + Consultancy/4 → Consultancy payments are spread over the 4 years of the contract; thus, they need to be divided by 4 in order to calculate the annual value

→ n is the number of chargers defined for each type of consultancy and company profile (simple: 10 EVs, 3 chargers; medium: 20 EVs, 5 chargers; complex: 100 EVs, 25 chargers):

1st option: 10 cars, 3 chargers | 2nd option: 10 EVs, 3 chargers | 3rd option: 10 EVs, 3 chargers |
 4th option: 20 EVs, 5 chargers | 5th option: 20 EVs, 5 chargers | 6th option: 20 EVs, 5 chargers |
 7th option: 100 EVs, 25 chargers | 8th option: 100 EVs, 25 chargers | 9th option: 100 EVs, 25 chargers

e.g.: 1st option (simple consultancy & small car segment): $2,135*3 + 2,700/4 = 7,079.49\text{€}$

(1.4) **Savings**: Annual Savings*n'; n' is the number of cars for each type of consultancy project

→ Annual Savings: calculated according with **Appendix 42 - section TCO Savings – Annual Consumption Savings**, for instance:

- 1st option: 10 Nissan Leaf vs Ford Focus ($10*1,099.74\text{€} = 10,997\text{€}$)
- 2nd option: 10 Renault ZOE vs Renault Clio ($10*1,793.39\text{€} = 17,934\text{€}$)
- 3rd option: 10 Tesla Model S vs Audi A7 Sportback ($10*5,809.40\text{€} = 58,094\text{€}$)

(2) Next Best Alternative:

(2.1) **ICEs Annual Rent** (diesel annual rent): calculated according to the rents of diesel cars presented in **Appendix 42 - section TCO Analysis**

e.g.: Ford Focus (small car segment) = $353\text{€}*12 = 4,233\text{€}$; Renault Clio (medium) = $552\text{€}*12 = 6,620\text{€}$; Audi A7 Sportback (premium) = $1,313\text{€}*12 = 15,759\text{€}$

(2.2) **Cost of Fuel Consumption**: according with annual consumption of diesel cars presented in **Appendix 42 - section TCO Analysis**

e.g.: Ford Focus (small car segment) = $1,439\text{€}$; Renault Clio (medium car segment) = $1,172\text{€}$; Audi A7 Sportback (premium car segment) = $1,506\text{€}$

(2.3) **Total: ICEs** Annual rent*n' + Fuel Consumption*n'; n' is the number of cars for each type of consultancy project (simple: 10 cars; medium: 20 cars; complex: 100 cars)

e.g.: 1st Option (simple consultancy & small car segment) = $4,233\text{€}*10 + 1,439\text{€}*10 = 56,729\text{€}$

(3) **Total** = Total Next Best Alternative (2.3) + TCO Savings (1.4) – *EDP Frota Verde's* offering (1.3) = (ICEs Annual Rent + Annual Fuel Consumption)* n' + TCO Savings*n' – Chargers*n – Consultancy/4

e.g.: 1st Option (simple consultancy & small car segment) = $56,729\text{€} + 10,997\text{€} - 7,079.49\text{€} = 60,647\text{€}$

PV Overall Calculation

PV: Value of Performance Differential (TCO Savings - *EDP Frota Verde's* offering) + Next Best Alternative (ICEs' Rent + Cost of Fuel Consumption)

PV	Value Performance Differential (1)					Next Best Alternative (2)					(3) Total PV (1 year out of 4)						
	Negative				Positive												
	Charger 22kW Floor Rent (annual rent) (1.1)	Consultancy (1.2)			Total 1 year (out of 4 years) (1.3)	Savings w/ EV's (1 out of 4 years) --> does not include chargers (1.4)	ICEs Rent (annual spending) (w/ IVA) (2.1)			Cost of fuel consumption (2.2)		Total 1 year (out of 4 years) (2.3)					
		Simple (10 cars)	Medium (20 cars)	Complex (100 cars)			Small segment	Medium segment	Premium segment								
		1902 €	2290 €				6 280 €	10 000 €	4 234 €					700 €	49 335 €	53 055 €	
		1902 €	2290 €				6 280 €	15 000 €					6 620 €	900 €	75 199 €	83 919 €	
		1902 €	2290 €				6 280 €	55 000 €						15 759 €	1 100 €	168 587 €	217 307 €
		1902 €		4730 €			10 694 €	20 000 €	4 234 €					700 €	98 670 €	107 975 €	
		1902 €		4730 €			10 694 €	30 000 €					6 620 €	900 €	150 397 €	169 703 €	
		1902 €		4730 €			10 694 €	110 000 €						15 759 €	1 100 €	337 173 €	436 479 €
1902 €				9110 €			49 837 €	100 000 €	4 234 €				700 €	493 348 €	543 511 €		
1902 €			9110 €	49 837 €	150 000 €		6 619,86	900 €	751 986 €	852 149 €							
1902 €			9110 €	49 837 €	550 000 €			15 759 €	1 100 €	1 685 866 €	2 186 029 €						

Perceived Value (PV) – Auxiliar Calculation

PV Consultancy	
Price per day	680 €
Price per hour	85 €

PV Consultancy per Project, according to complexity			
	Price men- hours	GPS Tracking	Total Price
Simple (10 cars, 3 days, 24 hours)	2 040 €	250 €	2 290 €
Medium (20 cars, 6 days, 48 hours)	4 080 €	650 €	4 730 €
Complex (100 cars, 12 days, 96 hours)	8 160 €	950 €	9 110 €

PV Charging Stations (Rent)				
	Floor		Wallbox	
	11 kW	22 kW	11 Kw	22 kW
Charging Stations Price + Services	7 359 €	7 610 €	5 175 €	5 325 €
rent per month	153 €	159 €	108 €	111 €
rent per year	1 840 €	1 902 €	1 294 €	1 331 €

Rent Price - Charging Stations (Rent)	Floor		Wallbox	
	11 kW	22 kW	11 kW	22 kW
Profit Margin 15%	15%	15%	15%	15%
Margin €	1038 €	1073 €	730 €	751 €
Price 1	6 918 €	7 153 €	4 865 €	5 006 €
Margin renting 6%	6%	6%	6%	6%
Margin renting €	442 €	457 €	311 €	320 €
Price incl. margin renting €	7 359 €	7 610 €	5 175 €	5 325 €
Rent per month	153 €	159 €	108 €	111 €
Rent per year	1 840 €	1 902 €	1 294 €	1 331 €

Car Segment	Small (Nissan Leaf vs. Ford Focus)	Medium (Renault ZOE vs. Renault Clio)	Premium (Tesla Model S vs. Audi A7 Sportback)
Annual TCO Savings w/ EVs	1 000 €	1 500 €	5 500 €
Annual ICE Fuel Consumption	700 €	900 €	1 100 €

Note: PV = Value of Performance Differential (TCO Savings - *EDP Frota Verde's* offering) + Next Best Alternative (ICEs Rent + cost of fuel consumption)

Same assumptions regarding consultancy complexity and car segments as for the TEV calculation.

(1) Value of the Performance Differential:

- (1.1) **Chargers** (rented floor 22kWh): The expected price is lower than the one presented in the TEV, assuming a profit margin of 15% (instead of 20%) and a

renting margin of 6% (instead of 11%). The price for the 4 years of the contract is 7,610€/un → for 1 year it is 1,902€/un

(1.2) **Consultancy price:** The expected consultancy price is lower than the one presented in the TEV, assumed to be 680€ per consultancy day (instead of 800€/day) → simple (2,290€), medium (4,730€) and complex (9,110€)

(1.3) **Subtotal** = Chargers* n + Consultancy/4 → e.g.: 1st Option (simple consultancy & small car segment): 1,902€*3 + 2,290€/4 = 6,280€

→ Consultancy payments are spread over the 4 years of the contract; thus, they need to be divided by 4 in order to calculate the annual value

→ n is the number of chargers defined for each type of consultancy (simple: 10 EVs, 3 chargers; medium: 20 EVs, 5 chargers; complex: 100 EVs, 25 chargers):

(1.4) **Savings:** Annual Savings* n' ; n' is the number of cars for each type of consultancy project → Annual Savings: lower assumed expected savings than the ones presented in the TEV (which were calculated according with **Appendix 42 - section TCO Savings – Annual Consumption Savings**), for instance: Small car segment saves 1,000€/year/car (instead of 1,100€), Medium car segment saves 1,500€/year/car (instead of 1,793€), Premium car segment saves 5,500€/year/car (instead of 5,809€). For instance:

- 1st option: 10 Nissan Leaf vs Ford Focus (10*1,000€ = 10,000€)
- 2nd option: 10 Renault ZOE vs Renault Clio (10*1,500€ = 15,000€)
- 3rd option: 10 Tesla Model S vs Audi A7 Sportback (10*5,500€=55,000€)

(2) Next Best Alternative:

(2.1) **ICEs' Annual Rent** (diesel annual rent): calculated according to rents of diesel cars presented in **Appendix 42 - section TCO Analysis** (the same used for the TEV), e.g.: Ford Focus (small car segment) = 353€*12 = 4,233€; Renault Clio (medium car segment) = 552€*12 = 6,620€; Audi A7 Sportback (premium car segment) = 1,313€*12 = 15,759€

(2.2) **Cost of Fuel Consumption:** expected to be lower than the one presented in the TEV (which was presented in **Appendix 42 - section TCO Analysis**)

Small car segment saves 700€/year/car (instead of 1,439€), medium saves 900€/year/car (instead of 1,1752€), and premium saves 1,100€/year/car (instead of 1,506€)

(2.3) **Total:** ICEs Annual rent* n' + Fuel Consumption* n' ; n' is the number of cars for each type of consultancy project (simple: 10 cars; medium: 20 cars; complex: 100 cars). e.g.: 1st Option (simple consultancy & small car segment) = 4,233€*10 + 700€*10 = 49,335 €

(3) **Total** = Total Next Best Alternative (2.3) + TCO Savings (1.4) – *EDP Frota Verde's* offering (1.3) = (ICEs Annual Rent + Annual Fuel Consumption) * n' + TCO Savings* n' – Chargers* n – Consultancy/4 → e.g.: 1st Option (simple consultancy & small car segment) = 49,335€ + 10,000€ - 6,280€ = 53,055 €

Costs	Costs Charger 22kW Floor Rent (1 year out of 4 years)	Costs (Total 1 year out of 4 years)
	1 520 €	4 560 €
	1 520 €	4 560 €
	1 520 €	4 560 €
	1 520 €	7 600 €
	1 520 €	7 600 €
	1 520 €	7 600 €
	1 520 €	38 000 €
	1 520 €	38 000 €

Note: The costs of 1,520€/un take in consideration the charging costs for renting for 1-year of contract (which means cost of hardware, cost of installation and cost of operation, that will be explained in **Appendix 45**. The total refers to one year according with consultancy complexity that takes into account the ratio of one charger for 4 EVs (Simple: 3 chargers → 1,520€/un x 3 = 4,560€, Medium: 5 chargers → 1,520€/un x 5 = 7,600€, Complex: 25 chargers → 1,520€/un x 25 = 38,000€).

Source: Authors' Own Creation according to Dolan and Gourville (2014)

Appendix 44 – Charging Stations (Buy) COGS (per unit)

COGS Charging Stations (Buy)	Floor		Wallbox	
	11 kW	22 kW	11 kW	22 kW
Cost of hardware	3 390 €	3 590 €	1 645 €	1 765 €
Installation & Transportation	250 €	250 €	250 €	250 €
Total	3 640 €	3 840 €	1 895 €	2 015 €

Note: Charging Stations buying includes cost of hardware (depending on each type of charger) and cost of installation and transportation (250€/un).

Source: Authors' Own Creation

Appendix 45 – Charging Stations (Rent) Costs (per unit, for 4-years contract)

Costs Charging Stations (Rent)	Floor		Wallbox	
	11 kW	22 kW	11 kW	22 kW
Cost of hardware	3 390 €	3 590 €	1 645 €	1 765 €
Installation & Transportation	250 €	250 €	250 €	250 €
Cost for operation	2 240 €	2 240 €	2 240 €	2 240 €
Costs Total (4 years)	5 880 €	6 080 €	4 135 €	4 255 €
Costs per month (4 years)	123 €	127 €	86 €	89 €
Costs per year (1 out of 4 years)	1 470 €	1 520 €	1 034 €	1 064 €

Note: Charging Stations renting includes cost of hardware (depending on each type of charger) and cost of installation and transportation (250€/un), and cost for operation (560€/un/year)

Source: Authors' Own Creation

Appendix 46 – Pricing Formulas

Variables

Variables	Price
Consultancy (per hour)	c
Consultant price per hour	c'
Hours	h
Technology	t
Material	m
Charger - buy	b
Charger - rent	r
Service (operation of the chargers)	s
EVs	e
Chargers after 4 years	p
Costs of installation & transportation	i
Costs of operation	o

Pricing formulas for products and services:

Equation 2 – Price of Bundling Product and Services: Consultancy, Chargers (Buy), and others: $P(1) = c + b + s + e \times M$

Equation 3 – Price of Bundling Product and Services: Consultancy, Chargers (Rent), and others: $P(2) = c + r + e \times M$

Equation 4 – Consultancy Price Calculation: $C = h \times c + t + m$

Source: Authors' Own Creation

Appendix 47 – Consultancy Price

Consultancy Price per day

Price Consultancy	
Consultancy Price (per day)	800 €/day
Costs (per day)	255.70 €/day

Note: Please see **Appendix 49** for further explanation of Consultancy Costs. This includes: salary per day, cost of insurance per day, social security cost per day, food allowance per day, and transportation costs per day.

Consultancy Price per Complexity per day

Price Consultancy - Complexity	Nr. of cars	hours	Days	Price for men-hours	GPS Tracking	Total Price
Simple	10	24 h	3 days	2 400 €	300 €	2 700 €
Medium	20	48 h	6 days	4 800 €	700 €	5 500 €
Complex	100	96 h	12 days	9 600 €	1 000 €	10 600 €

Note: Simple (800€/day*3 days = 2,400€ → 2,400€ + 300€ = 2,700€), Medium (800€/day*6 days = 4,800€ → 4,800€ + 700€ = 5,500€), Complex (800€/day*12 days = 9,600€ → 9,600€ + 1,000€ = 10,600€)

Source: Authors' Own Creation

Appendix 48 – Consultancy Costs

Consultancy Costs

Costs Consultancy	per hour	per day	per month	tax
Salary	19.89 €/h	159.09 €/day	3 500 €/month	-
Insurance (1.00%)	0.20 €/h	1.59 €/day	35.00 €/month	1.00%
Social Security (23.75%)	4.72 €/h	37.78 €/day	831.25 €/month	23.75%
Food Allowance		7.23 €/day		
Transportation cost		50 €/day		
Total		255.70 €/day		

Note: Consultancy total costs = salary (159.09€/day) + insurance (1.59€/day) + social security (37.78€/day) + food allowance (7.23€/day) + transportation cost (50€/day) = 255.70€/day

Consultancy – GPS cost

GPS Tracking		
GPS Cost		80 €/un

Source: Authors' Own Creation

Appendix 49 – Charging Stations (Buy) Price

Price - Charging Stations (Buy)	Floor		Wallbox	
	11 kW	22 kW	11 kW	22 kW
Charging Stations Price	4 550 €	4 800 €	2 369 €	2 519 €
COGS	3 640 €	3 840 €	1 895 €	2 015 €
Profit	910 €	960 €	474 €	504 €
Profit Margin %	20%	20%	20%	20%

Note: Costs of hardware were defined according to EDPC and the market average. In order to get the price, a profit margin of 20% (according to EDPC) was applied. E.g.: Charger floor

22kWh → Cost of hardware = 3,590€ → Total COGS (cost of hardware + cost of installation & transportation of 250€/un) = 3,590 + 250 = 3,840 → Price = 3,840 / (1 + 20%) = 4,800€.

Source: Authors' Own Creation

Appendix 50 – Charging Stations (Rent) Price

Charging Stations (Rent) Price (per unit, for 4-years contract)

Price - Charging Stations (Rent)	Floor		Wallbox	
	11 kW	22 kW	11 kW	22 kW
Charging Stations Price + Services	8 258 €	8 539 €	5 808 €	5 976 €
rent per month	172 €	178 €	121 €	125 €
rent per year	2 065 €	2 135 €	1 452 €	1 494 €
Costs	5 880 €	6 080 €	4 135 €	4 255 €
Costs per month	123 €	127 €	86 €	89 €
Costs per year	1 470 €	1 520 €	1 034 €	1 064 €

Charging Stations (Rent) Price Calculation (per unit, for 4-years contract)

Rent price Charging Stations (Rent)	Floor		Wallbox	
	11 kW	22 kW	11 kW	22 kW
Margin 20%	20%	20%	20%	20%
Margin €	1470 €	1520 €	1034 €	1064 €
Price 1	7 350 €	7 600 €	5 169 €	5 319 €
Margin renting 11%	11%	11%	11%	11%
Margin renting €	908 €	939 €	639 €	657 €
Price incl. margin renting €	8 258 €	8 539 €	5 808 €	5 976 €
Rent per month	172 €	178 €	121 €	125 €
Rent per year	2 065 €	2 135 €	1 452 €	1 494 €

Note: Costs of hardware were defined according to EDPC and the market average. In order to get the price, a profit margin of 20% (according to EDPC) was applied.

e.g.: Charger floor 22kWh → Cost of hardware = 3,590€ → Total COGS (cost of hardware + cost of installation & transportation of 250€/un + cost of operation of 560€/un/year) = 3,590 + 250 + 560*4 years = 6,080 → Price = 6,080 / (1 - 20%) = 7,600€.

Moreover, an extra margin for the renting of 11% according to the market average, was applied in order for the charging price for renting to be higher than the one presented in the buying option. E.g.: 7,600 / (1 - 11%) = 8,539€/un per 4-year contract → 2,135€/un for 1 year

Source: Authors' Own Creation

Appendix 51 – Charging Services (per unit per year)

Price Charging Services	
Costs	560 €
Profit Margin %	20%
Charging Services Price	700 €

Note: The costs for charging services were defined according to a market average (560€/un/year). This includes: cost of operation, cost of maintenance, equipment and responsibility insurance. → Price defined according to a profit margin according to EDPC: $560 / (1+20\%) = 700\text{€}$

Source: Authors' Own Creation

Appendix 52 – Contract Renewals

Option 1 - Buy Chargers after the end of the Renting contract (per unit)

CONTRACT RENEWALS - BUY	Floor		Wallbox	
	11 kW	22 kW	11 kW	22 kW
Original buying price	4238 €	4488 €	2056 €	2206 €
% lower price	30%	30%	30%	30%
Buy with a lower price after 4 years	1271 €	1346 €	617 €	662 €
Buy with an even lower price after 8 years	381 €	404 €	185 €	199 €

Note: For option 1 for renewing the contract, customers can buy chargers for a lower price (30% of the original price of buying a charger*). e.g.: charger floor 22kWh: $4,488\text{€} \times 30\% = 1,346\text{€/un}$.

$$* p = (4,800 - \frac{250}{(1-20\%)}) \times 30\% = 1,346\text{€/un}$$

Option 2 - Renting Renewal (per unit)

CONTRACT RENEWALS - RENT PER YEAR	Floor		Wallbox	
	11 kW	22 kW	11 kW	22 kW
Rent with lower price after 4 years	4574 €	4659 €	3839 €	3890 €
Rent with an even lower price after 8 years	3575 €	3600 €	3354 €	3369 €

Note: For Option 2 for renewing the contract, customers can rent chargers for a lower rent, based on 30% of the original price of buying a charger. e.g.: charger floor 22kWh: $4,599\text{€/un}^{**}$.

$$** p = \frac{(4,800 - \frac{250}{(1-20\%)}) \times 30\% + (\frac{560 \times 4}{(1-20\%)})}{(1-11\%)} = 4,659\text{€/un}$$

Pricing formulas for contract renewals

Equation 5 – Price of Contract Renewal: Renew Charging Services and PEV: $p = s + e$

Equation 6 – Price of Contract Renewal: Upgrade chargers after 4 years

$$p = (b - \frac{i}{(1-20\%)}) \times 30\% + e$$

Equation 7 – Price of Contract Renewal: Buy old chargers (the ones customers are currently using)

$$p = \frac{(b - \frac{i}{(1-20\%)}) \times 30\% + (\frac{o}{(1-20\%)})}{(1-11\%)} + e$$

Source: Authors' Own Creation

Appendix 53 – Contract Breaches

Consultancy bundled with Charging Services (per unit)

CONTRACT BREACHES - CONSULTANCY (after 2 years)	Consultancy		
	Simple	Medium	Complex
Price to pay/fee (equal to 50% of the price for the project)	1 350 €	2 750 €	5 300 €

Note: For consultancy bundled with charging services, customers will have to pay 50% of the consultancy price when they want to breach the contract of this offering. E.g.: simple = $2,700 \times 50\% = 1,350\text{€}$

Consultancy bundled with Chargers (Rent) - Option (1) Buy Chargers and Option (2) Pay a fee (per unit)

CONTRACT BREACHES - CHARGERS (RENT)	Floor		Wallbox	
	11 kW	22 kW	11 kW	22 kW
Original buying price (w/out Installation costs & margin)	4 238 €	4488 €	2 056 €	2 206 €
Buy with a lower price after 2 years	2543 €	2693 €	1234 €	1324 €
Buy with a lower price after 6 years	763 €	808 €	370 €	397 €
Buy with a lower price after 10 years	229 €	242 €	111 €	119 €
Fee after 2 years	2119 €	2244 €	1028 €	1103 €
Fee after 6 years	636 €	673 €	308 €	331 €
Fee after 10 years	191 €	202 €	93 €	99 €

Note: For consultancy bundled with chargers, customers will have to pay 50% of the consultancy price when they want to breach the contract of this offering. Regarding chargers they will have 2 options: (1) buy the chargers they were using for a lower price (50% of the original price*) but with an extra added margin of 20% or (2) pay a sanction (50% of the total price of the chargers).

e.g.: charger floor 22kWh - Option (1): $4,488\text{€}/\text{un} \times 50\% = 2,244\text{€}/\text{un} \rightarrow 2,244\text{€} \times (1+20\%) = 2,693\text{€}/\text{un}$

e.g.: charger floor 22kWh - Option (2) $4,488\text{€}/\text{un} \times 50\% = 2,244\text{€}/\text{un}$

$$* p = (4,800 - \frac{250}{(1-20\%)}) \times 30\% = 4,488\text{€}/\text{un}$$

Source: Authors' Own Creation

Appendix 54 –Purchase Quantity Discounts

Pricing formulas:

Equation 9 – Purchase Quantity Discount: $p = b \times (1 - 1,1\%)^2 \times 10$ or $= r \times (1 - 1,1\%)^2 \times 10$; $p = b \times (1 - 1,1\%)^1 \times 5 + b \times 2$

Charging Stations (Buy)

Quantity Discount Charging Station (Buy)	Quantity (un.)	1	2	3	4	5
Total Price	Floor 11kW	4550 €	9100 €	13650 €	18200 €	22500 €
	Floor 22kW	4800 €	9600 €	14400 €	19200 €	23736 €
	Wallbox 11kW	2369 €	4738 €	7106 €	9475 €	11713 €
	Wallbox 22kW	2519 €	5038 €	7556 €	10075 €	12455 €
	Quantity (un.)	6	7	8	9	10
	Floor 11kW	27050 €	31600 €	36150 €	40700 €	44505 €
	Floor 22kW	28536 €	33336 €	38136 €	42936 €	46950 €
	Wallbox 11kW	14082 €	16451 €	18820 €	21188 €	23169 €
	Wallbox 22kW	14974 €	17493 €	20011 €	22530 €	24636 €
	Quantity (un.)	11	12	13	14	15
	Floor 11kW	49055 €	53605 €	58155 €	62705 €	66022 €
	Floor 22kW	51750 €	56550 €	61350 €	66150 €	69650 €
	Wallbox 11kW	25538 €	27907 €	30275 €	32644 €	34372 €
	Wallbox 22kW	27155 €	29674 €	32193 €	34711 €	36548 €
	Quantity (un.)	16	17	18	19	20
	Floor 11kW	70572 €	75122 €	79672 €	84222 €	87062 €
	Floor 22kW	74450 €	79250 €	84050 €	88850 €	91845 €
	Wallbox 11kW	36740 €	39109 €	41478 €	43847 €	45325 €
	Wallbox 22kW	39067 €	41586 €	44104 €	46623 €	48195 €

Note: At each 5 units of chargers, customers will have a discount of 1.1%. This means when they buy for instance 7 chargers, 5 units will have a discount of 1.1%, and the rest they will buy for the normal selling price. E.g.: charger floor 22kWh: $4,800 \times (1 - 1,1\%) \times 5 + 4,800 \times 2 = 33,336 \text{ €}$

If they want to buy 10 chargers, 5 units will have a discount of 1.1% and the other 5 units as well. E.g.: charger floor 22kWh: $4,800 \times (1 - 1,1\%)^2 \times 10 = 46,950 \text{ €}$.

Charging Stations (Rent) (per renting, per unit – contract of 4 years)

Quantity Discount Charging Station (Rent)	Quantity (un.)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Total Price 4 years	Floor <22kW	8 258 €	16 517 €	24 775 €	33 034 €	40 838 €	49 096 €	57 355 €	65 613 €	73 872 €	80 777 €	89 036 €	97 294 €	10 5553 €	113 811 €	11 9833€
	Floor 22kW	8 539 €	17 079 €	25 618 €	34 157 €	42 227 €	50 766 €	59 306 €	67 845 €	76 384 €	83 525 €	92 064 €	100 604 €	10 9143€	117 682 €	12 3909€
	Wallboxx <22kW	5 808 €	11 615 €	17 423 €	23 230 €	28 719 €	34 526 €	40 334 €	46 141 €	51 949 €	56 805 €	62 613 €	68 420 €	74 228 €	80 036 €	84 271 €
	Wallboxx 22kW	5 976 €	11 952 €	17 928 €	23 904 €	29 552 €	35 528 €	41 504 €	47 480 €	53 456 €	58 454 €	64 430 €	70 406 €	76 382 €	82 358 €	86 716 €

Note: The discount for each 5 units, here is presented for the contract of 4-years.

Charging Stations (Rent) (per year)

Quantity Discount Charging Station (Rent)	Quantity (un.)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Total Price per year	Floor <22kW	2 065€	4 129€	6 194€	8 258€	10 209€	12 274€	14 339€	16 403€	18 468€	20 194 €	22 259€	24 324€	26 388€	28 453€	29 958€
	Floor 22kW	2 135€	4 270€	6 404€	8 539€	1 0557€	12 692€	14 826€	16 961€	19 096€	20 881 €	23 016€	25 151€	27 286€	29 421€	30 977€
	Wallboxx <22kW	1 452€	2 904€	4 356€	5 808€	7 180€	8 632€	10 083€	11 535€	12 987€	14 201 €	15 653€	17 105€	18 557€	20 009€	21 068€
	Wallboxx 22kW	1 494€	2 988€	4 482€	5 976€	7 388€	8 882€	10 376€	11 870€	13 364€	14 613 €	16 107€	17 601€	19 096€	20 590€	21 679€

Note: The discount for each 5 units, here is presented for 1 year out of the 4-years contract.

Charging Stations (Rent) (per month)

Quantity Discount Charging Station (Rent)	Quantity (un.)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Total Price per month	Floor <22kW	172 €	344 €	516 €	688 €	851 €	1 023 €	1 195 €	1 367 €	1 539 €	1 683 €	1 855 €	2 027 €	2 199 €	2 371 €	2 497 €
	Floor 22kW	178 €	356 €	534 €	712 €	880 €	1 058 €	1 236 €	1 413 €	1 591 €	1 740 €	1 918 €	2 096 €	2 274 €	2 452 €	2 581 €
	Wallboxx <22kW	121 €	242 €	363 €	484 €	598 €	719 €	840 €	961 €	1 082 €	1 183 €	1 304 €	1 425 €	1 546 €	1 667 €	1 756 €
	Wallboxx 22kW	125 €	249 €	374 €	498 €	616 €	740 €	865 €	989 €	1 114 €	1 218 €	1 342 €	1 467 €	1 591 €	1 716 €	1 807 €

Note: The discount for each 5 units, here is presented for one month of the 4-years of contract.

Source: Authors' Own Creation

Appendix 55 - Pricing Menus

Consultancy Cost (for 1 working day = 8h)	Charger Cost - buy	Charger Cost - rent	Services	Total Price		Annual Price
800	4550		700	6 010,00	Price of buying 1 charging station & charging services (discount consultancy)	13 710,00
800	4800		700	6 260,00		13 960,00
800	2369		700	3 828,75		11 528,75
800	2519		700	3 978,75		11 678,75
800			700	1 484,00	Price of purchasing charging services (discount consultancy)	9 184,00
800			700	1 484,00		9 184,00
800			700	1 484,00		9 184,00
800			700	1 484,00		9 184,00
800	4550			5 310,00	Price of buying 1 charging station (discount consultancy)	5 310,00
800	4800			5 560,00		5 560,00
800	2369			3 128,75		3 128,75
800	2519			3 278,75		3 278,75
800		2065		2 824,61	Price of renting 1 charging station (discount consultancy)	1 276,15
800		2135		2 894,83		1 293,71
800		1452		2 211,90		1 122,97
800		1494		2 254,03		1 133,51

Note: Different Menus of Price are presented for the customer. Here is presented the price for 1 consultancy day, for one unit of each type of charger, and for one unit of complementary services.

Pricing Formulas for Pricing Menus:

Equation 10 – Pricing Menu Disc. in Consultancy of 10% if customers buy chargers and charging services (1): $p = c \times (1 - 10\%) + b + s$

Equation 11 – Pricing Menu: Discount in Consultancy of 10% if customers buy chargers (1): $p = c \times (1 - 10\%) + b$

Equation 12 – Pricing Menu: Discount in Consultancy of 10% if customers rent chargers (1): $p = c \times (1 - 10\%) + r$

Equation 13 – Pricing Menu: Discount in Consultancy of 5% if customers purchase charging services (2): $p = c \times (1 - 5\%) + s$

Source: Authors' Own Creation

Appendix 56 - Pricing Quantity Discount for all Pricing Menus (Product and Service Bundling) – Comparison with Prices with and without discounts (analysed until 30 units of charging stations, for 1 day of work of consultancy, e.g. 800€)

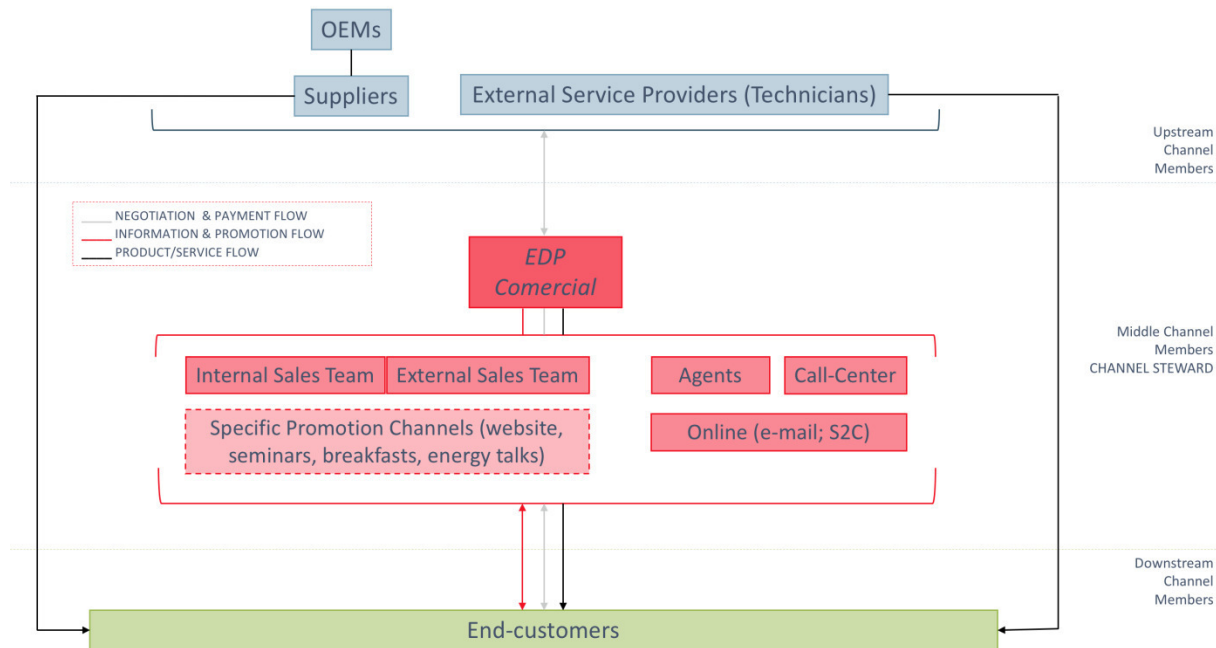
Note: This Appendix takes into consideration the quantity discount (at each 5 units a discount of 1.1% is applied), and the discount of 10% or 5% applied on the consultancy price (discount of 10% on consultancy: 720€/day; discount of 5% on consultancy: 760€/day), according with the product and services bundled.

	Discount Consultancy	Quantity (un.)	1	2	3	4	5	6	7	8	9	10
Price of whole offer (charging stations buy) without discounts		Floor <22kW	6 625 €	11 175 €	15 725 €	20 275 €	24 575 €	29 125 €	33 675 €	38 225 €	42 775 €	46 580 €
		Floor 22kW	6 875 €	11 675 €	16 475 €	21 275 €	25 811 €	30 611 €	35 411 €	40 211 €	45 011 €	49 025 €
		Wallboxx <22kW	4 444 €	6 813 €	9 182 €	11 550 €	13 789 €	16 158 €	18 526 €	20 895 €	23 264 €	25 245 €
		Wallboxx 22kW	4 594 €	7 113 €	9 632 €	12 150 €	14 531 €	17 049 €	19 568 €	22 087 €	24 606 €	26 712 €
Price of buying charging stations	720 €	Floor <22kW	5 970 €	10 520 €	15 070 €	19 620 €	23 920 €	28 470 €	33 020 €	37 570 €	42 120 €	45 925 €

and complementing services (discount consultancy)	720 €	Floor 22kW	6 220 €	11 020 €	15 820 €	20 620 €	25 156 €	29 956 €	34 756 €	39 556 €	44 356 €	48 370 €
	720 €	Wallboxx <22kW	3 789 €	6 158 €	8 526 €	10 895 €	13 134 €	15 502 €	17 871 €	20 240 €	22 609 €	24 589 €
	720 €	Wallboxx 22kW	3 939 €	6 458 €	8 976 €	11 495 €	13 875 €	16 394 €	18 913 €	21 432 €	23 950 €	26 056 €
Price of purchasing charging services (discount consultancy)	760 €	Floor <22kW	1 460 €									
	760 €	Floor 22kW	1 484 €									
	760 €	Wallboxx <22kW	1 484 €									
	760 €	Wallboxx 22kW	1 484 €									
Price of buying charging stations (discount consultancy)	720 €	Floor <22kW	5 270 €	9 820 €	14 370 €	18 920 €	23 220 €	27 770 €	32 320 €	36 870 €	41 420 €	45 225 €
	720 €	Floor 22kW	5 520 €	10 320 €	15 120 €	19 920 €	24 456 €	29 256 €	34 056 €	38 856 €	43 656 €	47 670 €
	720 €	Wallboxx <22kW	3 089 €	5 458 €	7 826 €	10 190 €	12 434 €	14 802 €	17 171 €	19 540 €	21 909 €	23 889 €
	720 €	Wallboxx 22kW	3 239 €	5 758 €	8 276 €	10 795 €	13 175 €	15 694 €	18 213 €	20 732 €	23 250 €	25 356 €
Price for the whole offer (charging stations rent) without discounts		Floor <22kW	3 440 €	5 505 €	7 569 €	9 634 €	11 585 €	13 649 €	15 714 €	17 779 €	19 843 €	21 570 €
		Floor 22kW	3 510 €	5 645 €	7 780 €	9 915 €	11 932 €	14 067 €	16 202 €	18 337 €	20 471 €	22 257 €
		Wallboxx <22kW	2 827 €	4 279 €	5 731 €	7 183 €	8 555 €	10 007 €	11 459 €	12 911 €	14 363 €	15 577 €
		Wallboxx 22kW	2 869 €	4 363 €	5 857 €	7 352 €	8 763 €	10 257 €	11 751 €	13 245 €	14 739 €	15 989 €
Price of renting charging stations (discount consultancy)	720 €	Floor <22kW	2 785 €	4 849 €	6 914 €	8 978 €	10 930 €	12 994 €	15 059 €	17 123 €	19 188 €	20 914 €
	720 €	Floor 22kW	2 855 €	4 990 €	7 125 €	9 259 €	11 277 €	13 412 €	15 546 €	17 681 €	19 816 €	21 601 €
	720 €	Wallboxx <22kW	2 172 €	3 624 €	5 076 €	6 528 €	7 900 €	9 352 €	10 803 €	12 255 €	13 707 €	14 921 €
	720 €	Wallboxx 22kW	2 214 €	3 708 €	5 202 €	6 696 €	8 108 €	9 602 €	11 096 €	12 590 €	14 084 €	15 333 €

Source: Authors' Own Creation

Appendix 57 – EDP Comercial's distribution channel structure



Source: Authors' Own Creation according to Coughlan, Anderson, Stern, and El-Ansary (2006)

Appendix 58 – Service outputs demanded in light of EDP Frota Verde and detailed description

Possible SODs	EDP Frota Verde's SOS	Functional Segment SOD level	Complex Segment SOD level
Bulk-breaking	Out of scope.	-	-
Spatial convenience: one-stop shopping and turnkey solution	The service offers a complete turnkey solution in a one-stop shopping which widely decreases search costs.	MEDIUM	HIGH
Waiting and delivery time	Given the complexity of the service and the number of channel members involved, it is expected a long time between the first contact, the customer decision and the complete delivery of the service.	MEDIUM	MEDIUM
Assortment and variety: different charger models, bundles and financing options	The consulting service provides a full analysis of the customer needs and resources to make the perfect fit with the existing technology options.	MEDIUM	HIGH
Customer service: proactive advice, responsive assistance during decision process, responsive problem solving after sale	There are different ways of reaching the end-user. It can be more personal with visits and calls from the sales team or remote by email and S2C. The sales team will be dedicated and responsive in the pre- and post-sale period.	LOW	HIGH
Information sharing: references and credentials, pre- and post- sale assistance	After a few clients, success cases will be available on the webpage. Besides, the sales team will always be ready to help with any question during pre- and post- purchase periods with the support of the expert team.	MEDIUM	HIGH

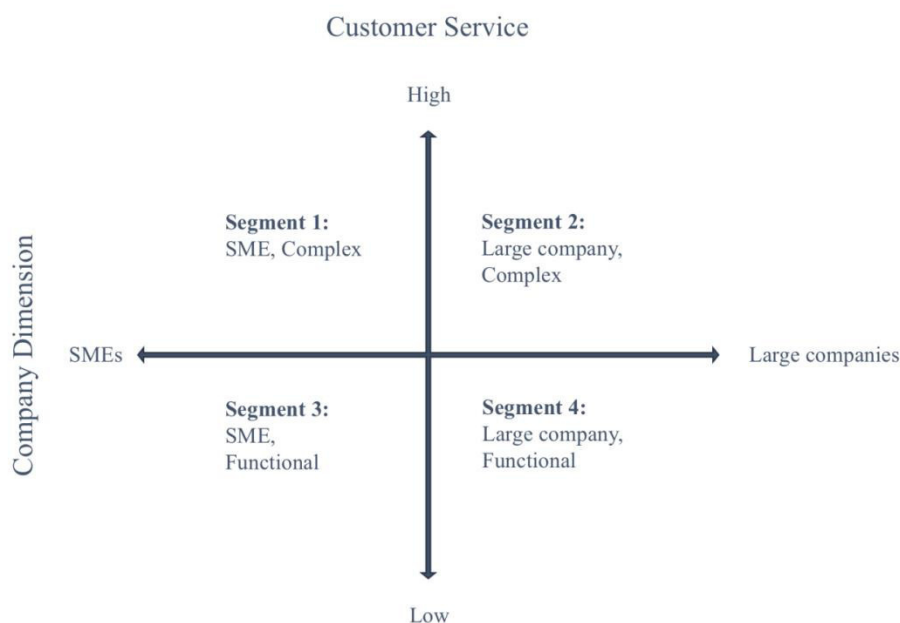
- **Bulk breaking** refers to the end-user's ability to buy a desired (possibly small)

number of units, even if the product or service was produced in large, batch-production lot sizes.

- **Spatial convenience** provided by market decentralization increases consumers' satisfaction by reducing transportation requirements and search costs.
- **Waiting time** is the time that the end-user must wait between ordering and receiving the goods or post-sales service.
- **Product variety and assortment** are the different classes of goods that constitute the product offering and the different brand and models of those goods.
- **Customer service** refers to all aspects of easing the shopping and purchase process for end-users as they interact with commercial suppliers.
- **Information sharing** refers to education provided to end-users about product attributes or usage capabilities, as well as pre- and post-purchase services.

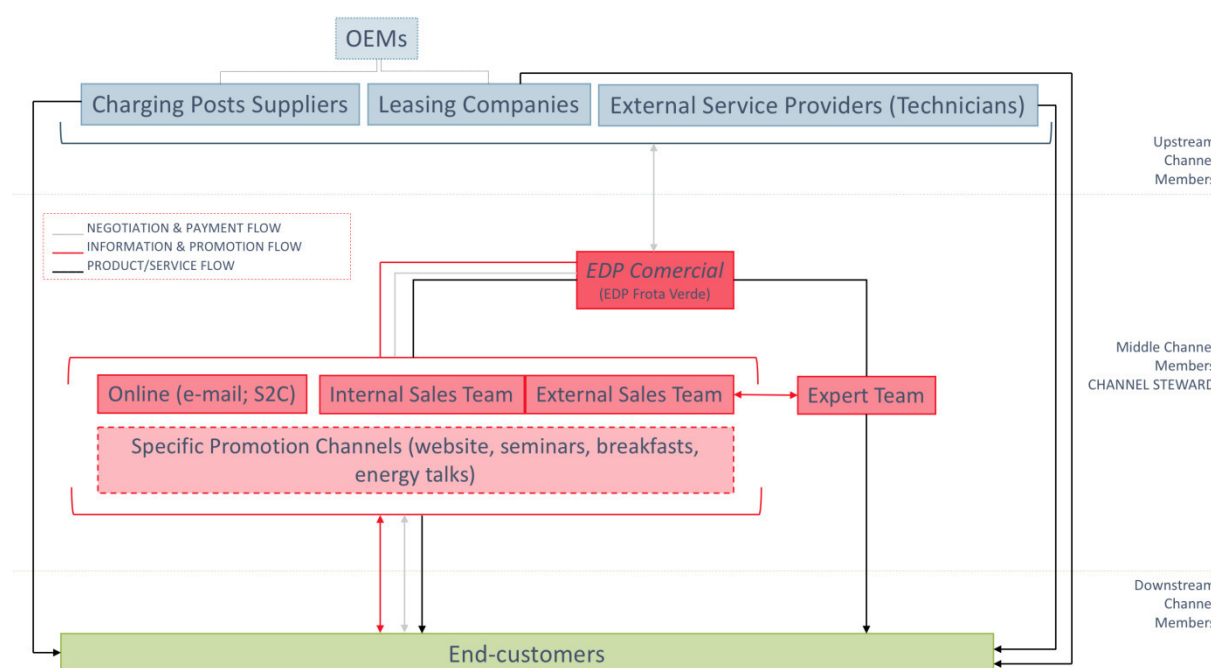
Source: Authors' Own Creation according to Palmatier, Stern, and El-Ansary (2015)

Appendix 59 – End-customer Segmentation: Positioning Map



Source: Authors' Own Creation

Appendix 60 – EDP Frota Verde's Channel Structure



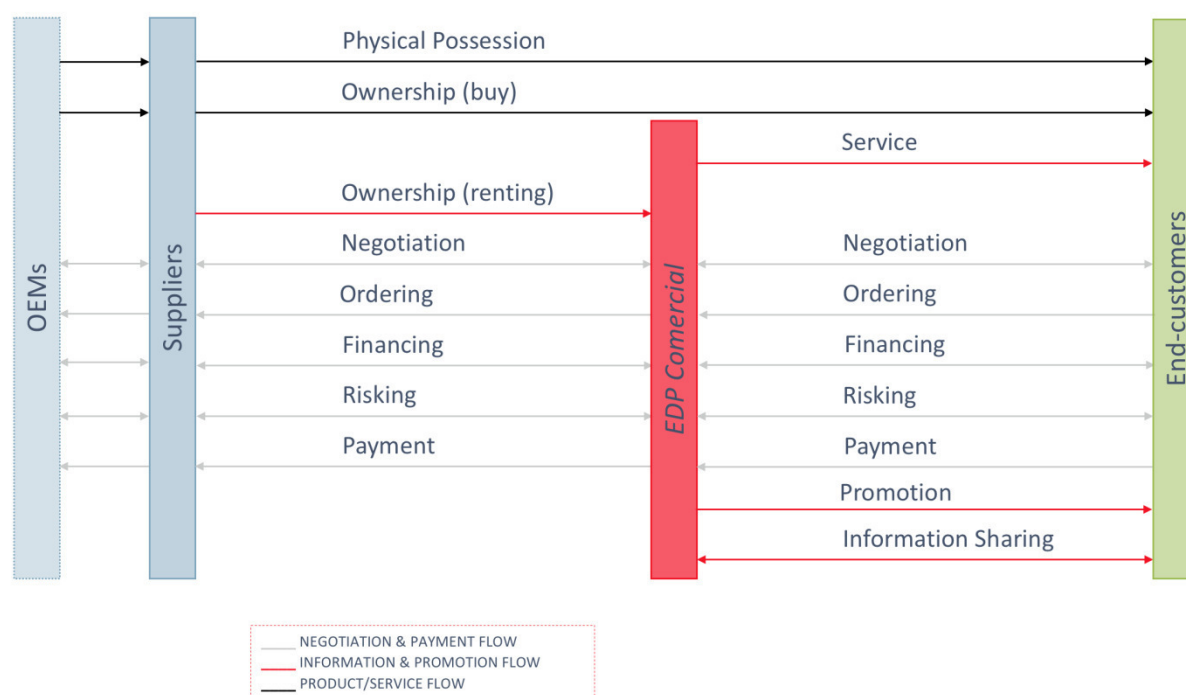
Source: Authors' Own Creation according to Coughlan, Anderson, Stern, and El-Ansary (2006)

Appendix 61 – Channel Mix per Segment

Segments	Customer Service SOD level	Channel Mix – Information and Promotion
1: SME, Complex	High	External sales team (dedicated) – personal visits S2C SMEs specific promotion channels*
2: Large company, Complex	High	Internal sales team – personal visits S2C Large companies' specific promotion channels*
3: SME, Functional	Low	External sales team (dedicated) – email/call S2C SMEs specific promotion channels*
4: Large company, Functional	Low	Internal sales team – email/call S2C Large companies' specific promotion channels*

Source: Authors' Own Creation

Appendix 62 – EDP Frota Verde's Channel Flows and Responsibilities



Source: Authors' Own Creation according to Palmatier, Stern and El-Ansary (2015)

Appendix 63 – Service Output Demand Gap Analysis

Segment	Spatial convenience	Waiting/delivery time	Assortment/variety	Customer service	Information sharing
1: SME, Complex	SS=SD	SS<SD	SS<SD	SS=SD	SS=SD
2: Large company, Complex	SS=SD	SS<SD	SS<SD	SS=SD	SS=SD
3: SME, Functional	SS>SD	SS=SD	SS=SD	SS>SD	SS>SD
4: Large company, Functional	SS>SD	SS=SD	SS=SD	SS>SD	SS>SD

Source: Authors' Own Creation according to Palmatier, Stern and El-Ansary (2015)

Appendix 64 – Behavioural Sequence Model

Decision Stage									
	Problem recognition	General description of need	Supplier search	Acquisition and analysis of proposals	Supplier selection	Delivery of products/services	Usage and evaluation	Optional: repeat steps 3-7	Contract renewal
Who: Individuals involved and decision roles	Persons in charge for fleet or senior management (initiator), sales people (initiators and influencers), referrals from current customers (influencer)	Persons in charge for fleet (initiator and influencer)	Persons in charge for fleet (initiator and influencer), purchasing department (initiator and influencer)	Persons in charge for fleet (initiator, influencer and decider), purchasing/financial department (initiator, influencer, and decider), senior management (influencer and decider)	Persons in charge for fleet (influencer and decider), purchasing department (purchaser), senior management (influencer and decider)	Persons in charge for fleet (initiator and user), purchasing department (initiator)	Persons in charge for fleet (user and influencer), employees (user and influencer), finance department (influencer)	If further products and/or services are considered after the consulting services, but the customer is not sure if he wants to stay with EDP Full Power for the remaining services	Persons in charge for fleet (influencer or decider), purchasing department (influencer or decider), senior management (influencer and/or decider)
Where the stage is likely to occur	At the company premises, at a conference or other event	Company premises	Internet, phone, email, conferences and events	Internet, phone, personal meetings, email	Personal meetings, phone, email	Company premises	Company premises, trips of employees		Company premises, supplier premises, mail, personal meeting
Timing of the stage	Anytime, but more often a couple of months before renewal of fleet contracts	Shortly after need arousal	Same month as description of need	Within 4 weeks after supplier search	Shortly after analysis of proposals	At specified delivery date	As long as products/services are used		Several months before the current 4-year contract expires
How the stage is going to occur	See an ad, see a presentation, are contacted by a sales person, persons in charge for fleet get contacted by senior management	Persons in charge for fleet works on determining characteristics, if needed with other departments	Persons in charge for fleet identifies a number of adequate suppliers	Different proposals are reviewed and analyzed by the person in charge for the fleet and members of the purchasing/financial department	Negotiations with a few potential suppliers and selection of supplier	Products are installed, services are delivered	Employees drive and charge the cars and evaluate the performance, person in charge for fleet monitors performance and costs, finance department monitors costs		After a positive evaluation of the service, the contract is renewed (and if needed modified)

Source: Authors' Own Creation according to Rossiter and Bellman (2005)

Appendix 65 – Creative Brief

Consumer perspective

Behavioural Sequence Model: See Appendix 64.

Source of business: NCUs and OBSs of electric mobility solutions for businesses

Creative target: Persons in charge for the fleet of their companies and senior management of these companies

Media: Several media channels, including the internet, magazines, brochures, newsletters, and email marketing

Media target: Large companies and SMEs

Marketing objectives and action objectives

Marketing objectives: Raise awareness for the sub-category of electric mobility solutions for businesses and create a positive attitude toward it, create brand awareness, generate a market penetration of 2% for large companies and 0.5% for SMEs

Action objective: Generate sub-category and brand trial by acquisition of consultancy services

Communication objectives

Category need: ‘Sell’ to target audience by showing the advantages of electric mobility

Brand awareness: Brand recall

Brand attitude: Create a positive brand attitude

Brand purchase intention: Generate intention to acquire consultancy services by *EDP Frota Verde*

Brand purchase facilitation: Webpage, phone number, contact form, S2C

Positioning statements for the campaign

Large companies:

To all persons in charge for the fleet of large companies that are open to electrifying their fleets and to senior management of these companies, *EDP Frota Verde* is the brand of electric

mobility solutions for businesses that offers the most convenient solution and cost savings, integrated consulting taking into account the electric installations of the building and the corresponding EVs as well as the improvement of the company image because of electric mobility and the turnkey solution provided by a brand of *EDP Comercial*, a well-established energy player in Portugal, with a team of experts in electric mobility solutions for businesses. Emphasize: Cost savings and convenience because of one-stop-shopping and electric mobility (a → b in an attribute-benefit-emotion model).

Entry ticket: Leasing of PEVs

Trade off or omit: None

SMEs:

To all persons in charge for the fleet of SMEs that are open to electrifying their fleets and to senior management of these companies, *EDP Frota Verde* is the brand of electric mobility solutions for businesses that offers the most convenient solution and cost savings as well as ongoing support during the entire process because of electric mobility and the service-menu provided by a brand of *EDP Comercial*, a well-established energy player in Portugal, with dedicated sales people and an expert team for electric mobility solutions for businesses.

Emphasize: Cost savings and convenience because of electric mobility, a tailor-made service menu and one-stop shopping and the ongoing support and relationship with a dedicated sales person (a → b in an attribute-benefit-emotion model).

Entry ticket: None

Trade off or omit: None

Desired customer response

Companies will understand the benefits of electric mobility solutions for businesses and that *EDP Frota Verde* offers the best service in this sub-category and they will acquire consultancy services to electrify their fleets with *EDP Frota Verde*.

Mandatory content

Association of sub-category and brand logo or brand name, Web-address, phone number, call-to-action to contact *EDP Comercial*

Source: Authors' Own Creation according to Rossiter and Bellman (2005)

Appendix 66 – Sales Force Activities

Large Companies	
Interest Creation	<i>Create awareness:</i> calls from internal account managers, newsletter with success cases, email marketing, workshops, breakfasts, conferences and events, website, branded content, paid search, display ads, print ads <i>Generate leads:</i> workshops and breakfasts, conferences and events, cold calling by internal account managers <i>Handle inbound calls:</i> internal account managers (supported by call centre that receives the first call) <i>Provide information to prospects:</i> internal account managers in personal meetings, calls, emails, brochures, website <i>Identify purchase influencers:</i> internal account managers in meetings or calls
Pre-Purchase	<i>Qualify prospects:</i> internal account managers via phone call or via questionnaire on S2C <i>Explain features/benefits:</i> internal account managers in meetings, emails, calls, with support of expert team if needed <i>Assess needs:</i> internal account managers in meetings, calls, questionnaire on S2C <i>Problem solving with customer:</i> internal account managers in meetings, emails, calls, supported by expert team if needed <i>Demonstrate capabilities:</i> internal account managers in meetings, emails, calls <i>Compare offering to competition:</i> internal account managers in meetings, emails, calls
Purchase	<i>Write proposals:</i> internal account managers with the support of the expert team, prospects can download proposals from S2C <i>Write orders:</i> internal account managers <i>Persuade:</i> internal account managers with the support of the expert team if needed in meetings, calls, emails <i>Negotiate:</i> internal account managers in meetings, calls, emails <i>Finalize terms:</i> internal account managers in meetings, calls, emails <i>Close the sale:</i> internal account managers in meetings
Immediate Post-Purchase	<i>Check order status:</i> internal account managers <i>Deliver product and/or service:</i> consulting service is provided by the expert team, charging stations are delivered by the supplier, EVs are collected at leasing company <i>Install product:</i> charging stations are installed by the supplier <i>Handle returns:</i> internal account managers, with support of other entities <i>Collect payment:</i> accounting departments and via electronic systems
Ongoing Post-Purchase	<i>Introduce new products and services:</i> internal account managers in meetings, calls, emails, newsletters, workshops, and breakfasts

	<i>Provide customer service:</i> internal account managers with support of other entities such as the expert team or external technicians <i>Handle complaints:</i> internal account manager with support of other entities such as suppliers <i>Stay in touch:</i> internal account managers <i>Place reorders:</i> internal account managers <i>Collect payments:</i> accounting departments and via electronic systems
SMEs	
Interest Creation	<i>Create awareness:</i> calls from external account managers, newsletter with description of service, email marketing, seminars, conferences and events, website, branded content, paid search, display ads, print ads <i>Generate leads:</i> seminars, conferences and events, cold calling by external account managers <i>Handle inbound calls:</i> external account managers (supported by call centre that receives the first call) <i>Provide information to prospects:</i> external account managers in personal meetings, calls, emails, brochures, website <i>Identify purchase influencers:</i> external account managers in meetings or calls
Pre-Purchase	<i>Qualify prospects:</i> external account managers via phone call or via questionnaire on S2C <i>Explain features/benefits:</i> external account managers in meetings, emails, calls, with support of expert team if needed <i>Assess needs:</i> external account managers in meetings, calls, questionnaire on S2C <i>Problem solving with customer:</i> external account managers in meetings, emails, calls, supported by expert team if needed <i>Demonstrate capabilities:</i> external account managers in meetings, emails, calls <i>Compare offering to competition:</i> external account managers in meetings, emails, calls
Purchase	<i>Write proposals:</i> external account managers with the support of the expert team, prospects can download proposals from S2C <i>Write orders:</i> external account managers <i>Persuade:</i> external account managers with the support of the expert team if needed in meetings, calls, emails <i>Negotiate:</i> external account managers in meetings, calls, emails <i>Finalize terms:</i> external account managers in meetings, calls, emails <i>Close the sale:</i> external account managers in meetings
Immediate Post-Purchase	<i>Check order status:</i> external account managers <i>Deliver product and/or service:</i> consulting service is provided by the expert team, charging stations are delivered by the supplier, EVs are collected at leasing company <i>Install product:</i> charging stations are installed by the supplier <i>Handle returns:</i> external account managers, with support of other entities <i>Collect payment:</i> accounting departments and via electronic systems
Ongoing Post-Purchase	<i>Introduce new products and services:</i> external account managers in meetings, calls, emails, newsletters, seminars <i>Provide customer service:</i> external account managers with support of other entities such as the expert team or external technicians

	<i>Handle complaints:</i> external account manager with support of other entities such as suppliers <i>Stay in touch:</i> external account managers <i>Place reorders:</i> external account managers <i>Collect payments:</i> accounting departments and via electronic systems

Source: Authors' Own Creation according to Zoltners, Sinha, and Lorimer (2004)

Appendix 67 – Media Budget and Split per Medium

Split per Medium	Total	%
Total Campaign Budget	318 270 €	100%
Costs for Creating Content	27 950 €	9%
Media and Events	290 320 €	91%
Events for Senior Management	141 400 €	44%
Workshops (Energy Talks) (large companies)	60 000 €	19%
Breakfasts (large companies)	1 400 €	0%
Seminars (SMEs)	80 000 €	25%
Conferences and Other Events	64 620 €	20%
Rent for space and other costs	60 000 €	19%
Hostesses	4 500 €	1%
Brochures	120 €	0%
Online Activities	6 300 €	2%
Webpage (own tab)	-	0%
Paid search	1 800 €	1%
Display ads	4 500 €	1%
Newsletter large companies	-	0%
Newsletter SMEs	-	0%
E-mail marketing large companies	-	0%
E-mail marketing SMEs	-	0%
Branded Content	30 000 €	9%
Print Ads in Magazines	48 000 €	15%

	Total	%
Primary Media	78 120 €	25%
Secondary Media	6 300 €	2%
Events for Senior Management	141 400 €	44%
Conferences and Events	64 620 €	20%
Content Creation	27 950 €	9%

Source: Authors' Own Creation

Appendix 68 – Schedule for the Campaign

Launch Campaign for Large Companies

	2018						2019					
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
	Launch Campaign for Large Companies											
Events for senior management												
Workshops (large companies)												
Breakfasts (large companies)												
Seminars (SMEs)												
Sales teams / Direct sales												
Internal key account managers												
External dedicated account managers												
Conferences and other events												
Online activities												
Webpage (own tab)												
Paid search												
Display ads												
Newsletter large companies												
Newsletter SMEs												
E-mail marketing large companies												
E-mail marketing SMEs												
Branded content												
Print ads in magazines												

Launch Campaign for SMEs

	2019						2020					
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
	Launch Campaign for SMEs											
Events for senior management												
Workshops (large companies)												
Breakfasts (large companies)												
Seminars (SMEs)												
Sales teams / Direct sales												
Internal key account managers												
External dedicated account managers												
Conferences and other events												
Online activities												
Webpage (own tab)												
Paid search												
Display ads												
Newsletter large companies												
Newsletter SMEs												
E-mail marketing large companies												
E-mail marketing SMEs												
Branded content												
Print ads in magazines												

Source: Authors' Own Creation

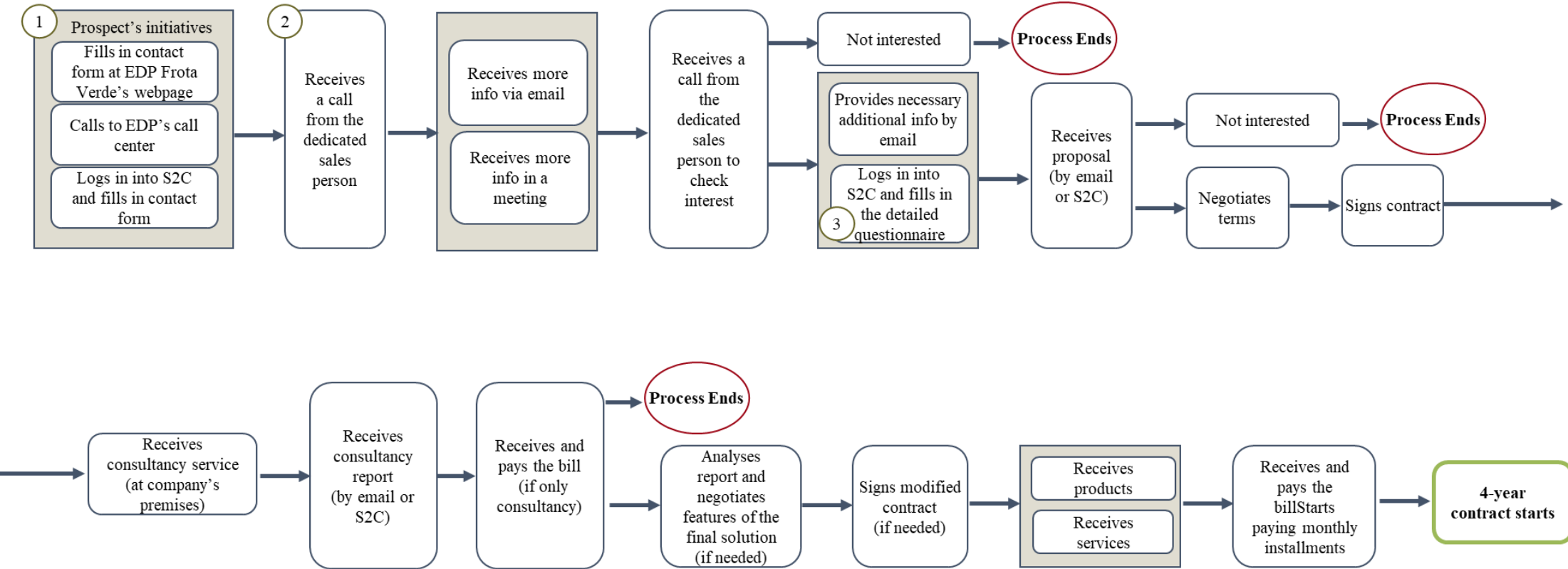
Appendix 69 – Detailed questionnaire to be placed on S2C

1. Quantos trabalhadores tem a sua empresa?
2. Quantos veículos tem a sua empresa?
3. Quantos veículos eléctricos tem a sua empresa?
4. Quantos veículos da sua frota gostaria de mudar para veículos eléctricos?
5. Quantos postos de carregamento tem a sua empresa?
6. Quantos veículos pretende carregar em simultâneo?
7. Qual a altura mais adequada para carregar os seus veículos?
☐ Dia ☐ Noite
8. Em que horário específico?
9. Em que local pretende instalar o(s) posto(s)?
☐ Exterior ☐ Interior
10. Escolha a opção adequada ao perfil da sua frota
☐ Própria
☐ Aluguer de longa duração
☐ Outra: _____

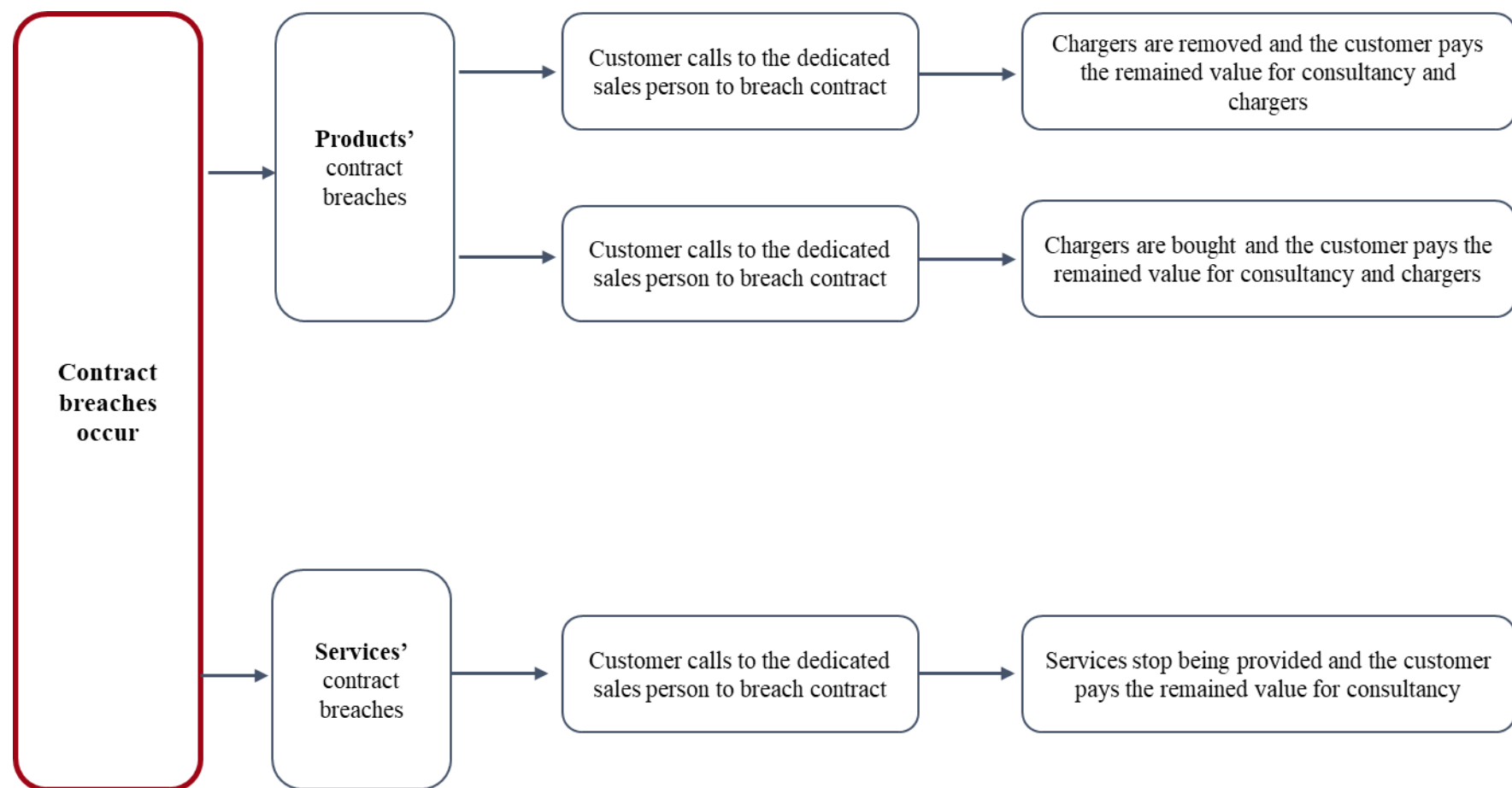
Source: Authors' Own Creation

Appendix 70 – EDP Frota Verde’s Flowcharts

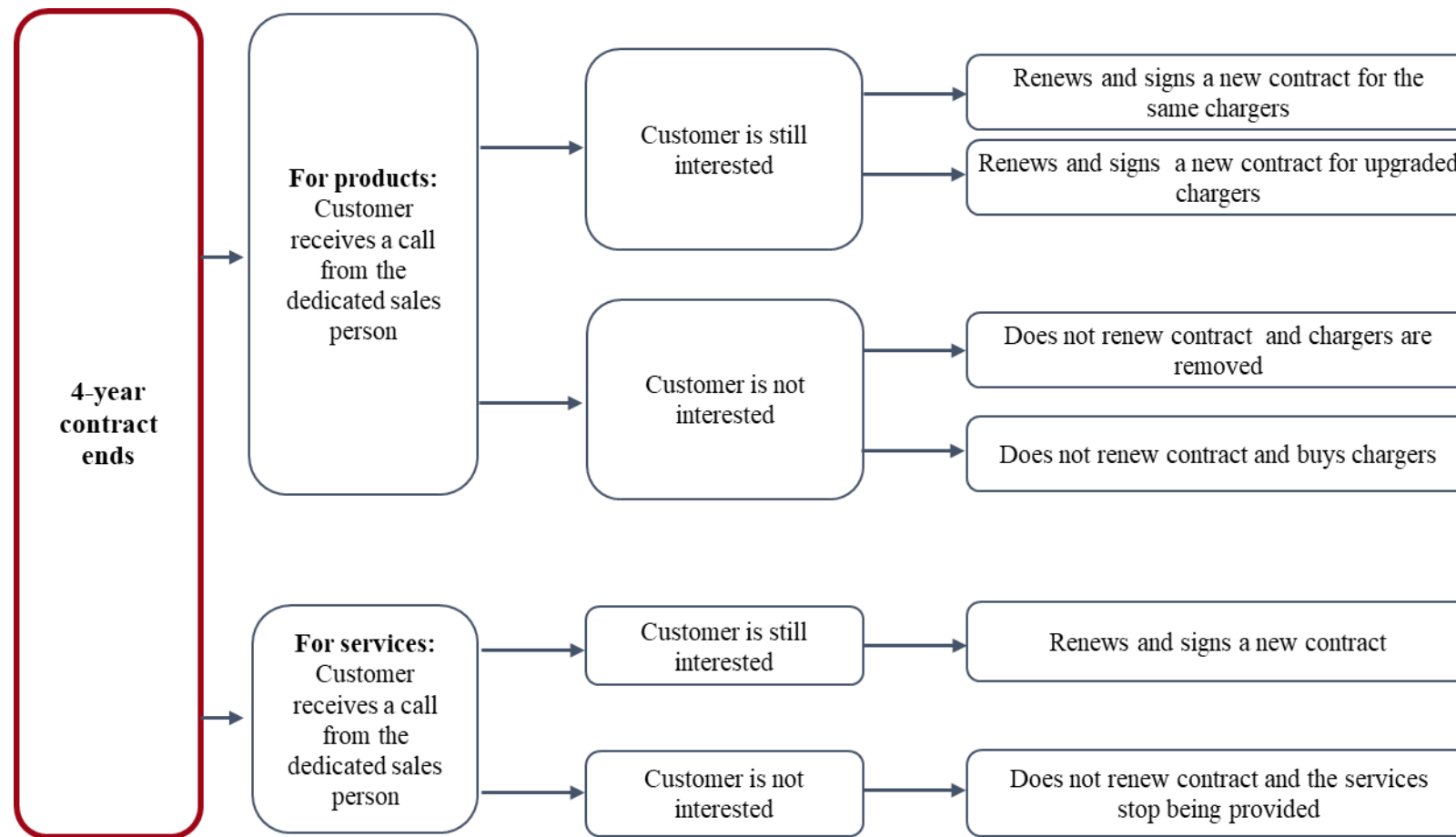
Flowchart for the acquisition of EDP Frota Verde’s products/services



Flowchart for the contract breaches of *EDP Frota Verde*'s products/services

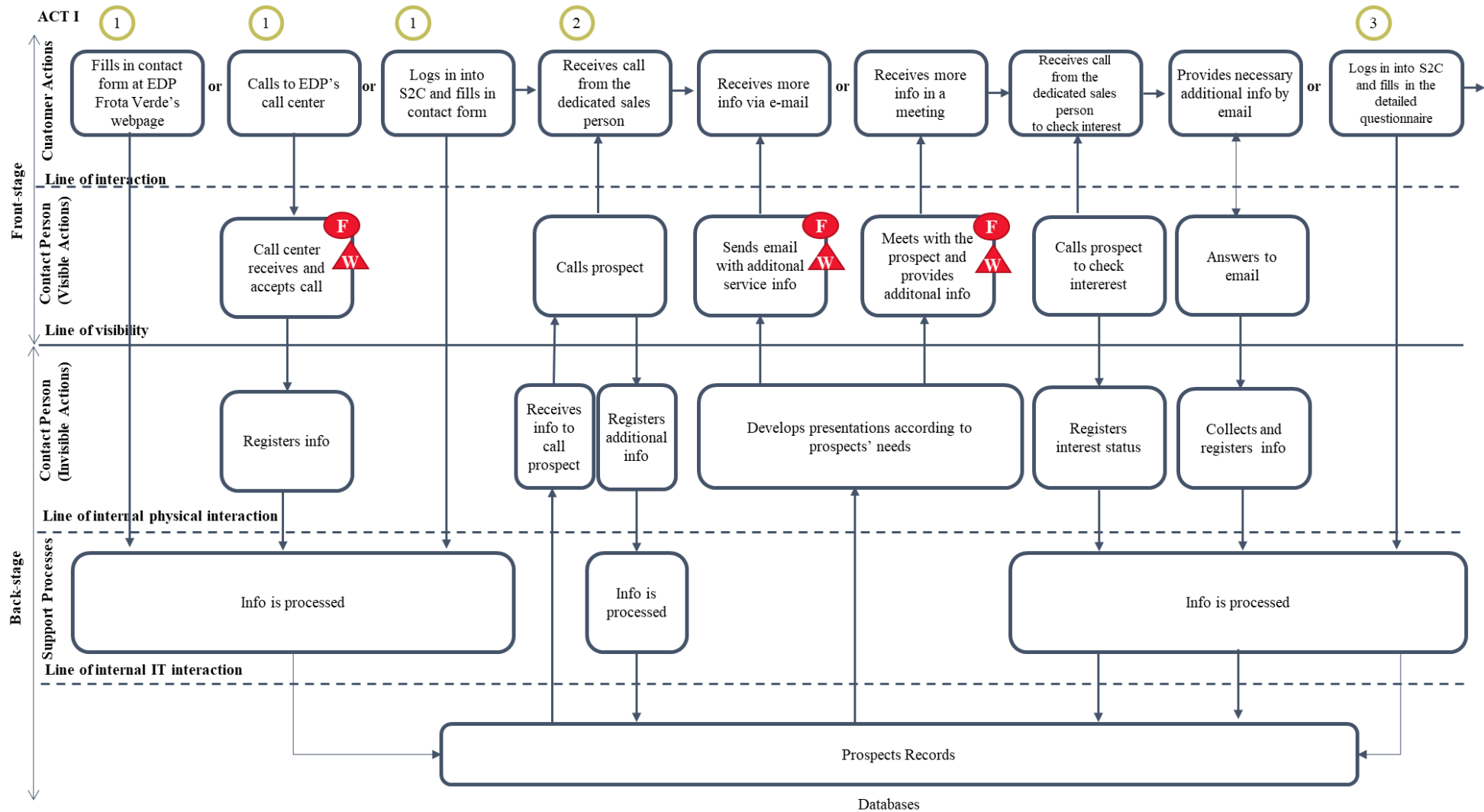


Flowchart for contract renewals of *EDP Frota Verde's* products/services

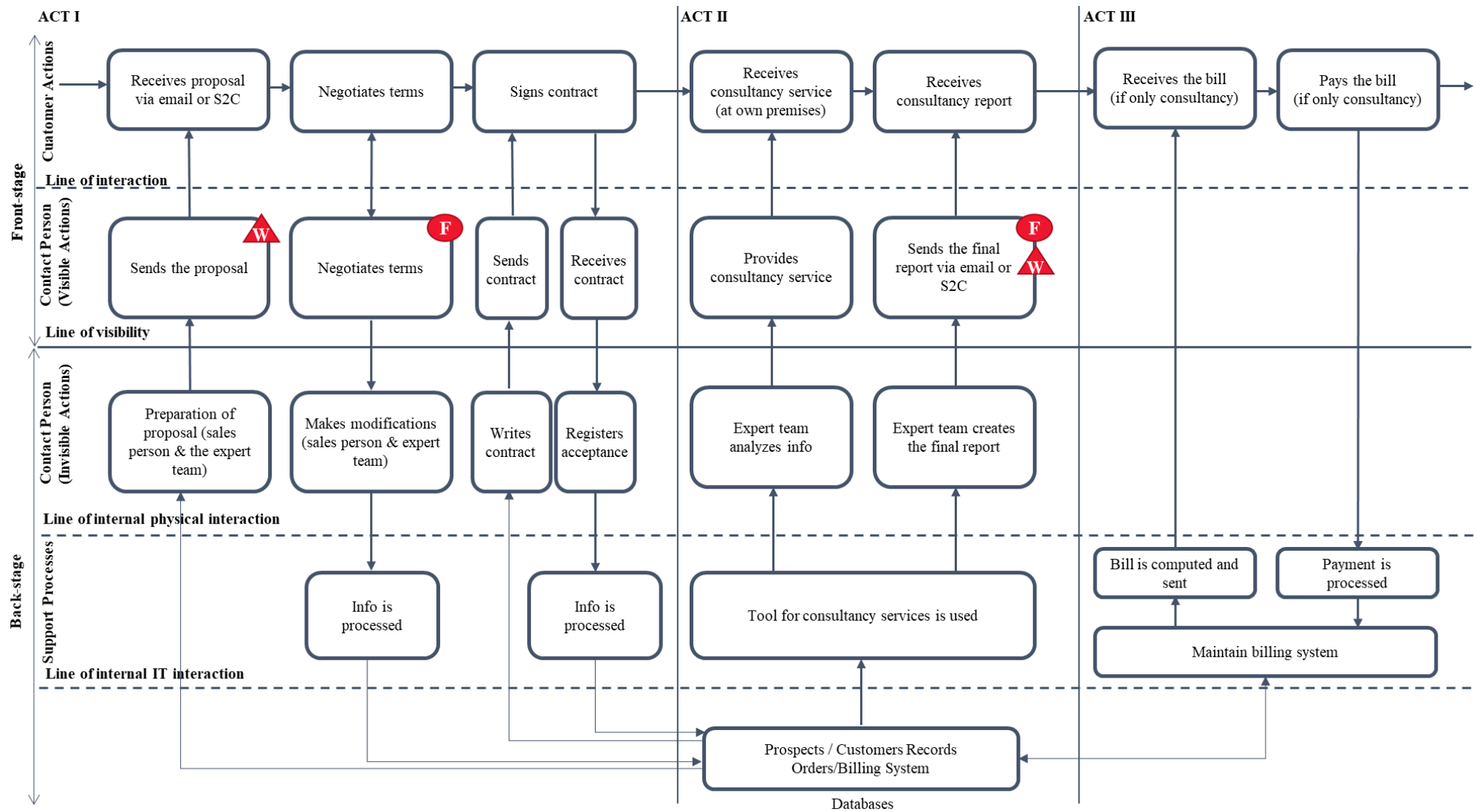


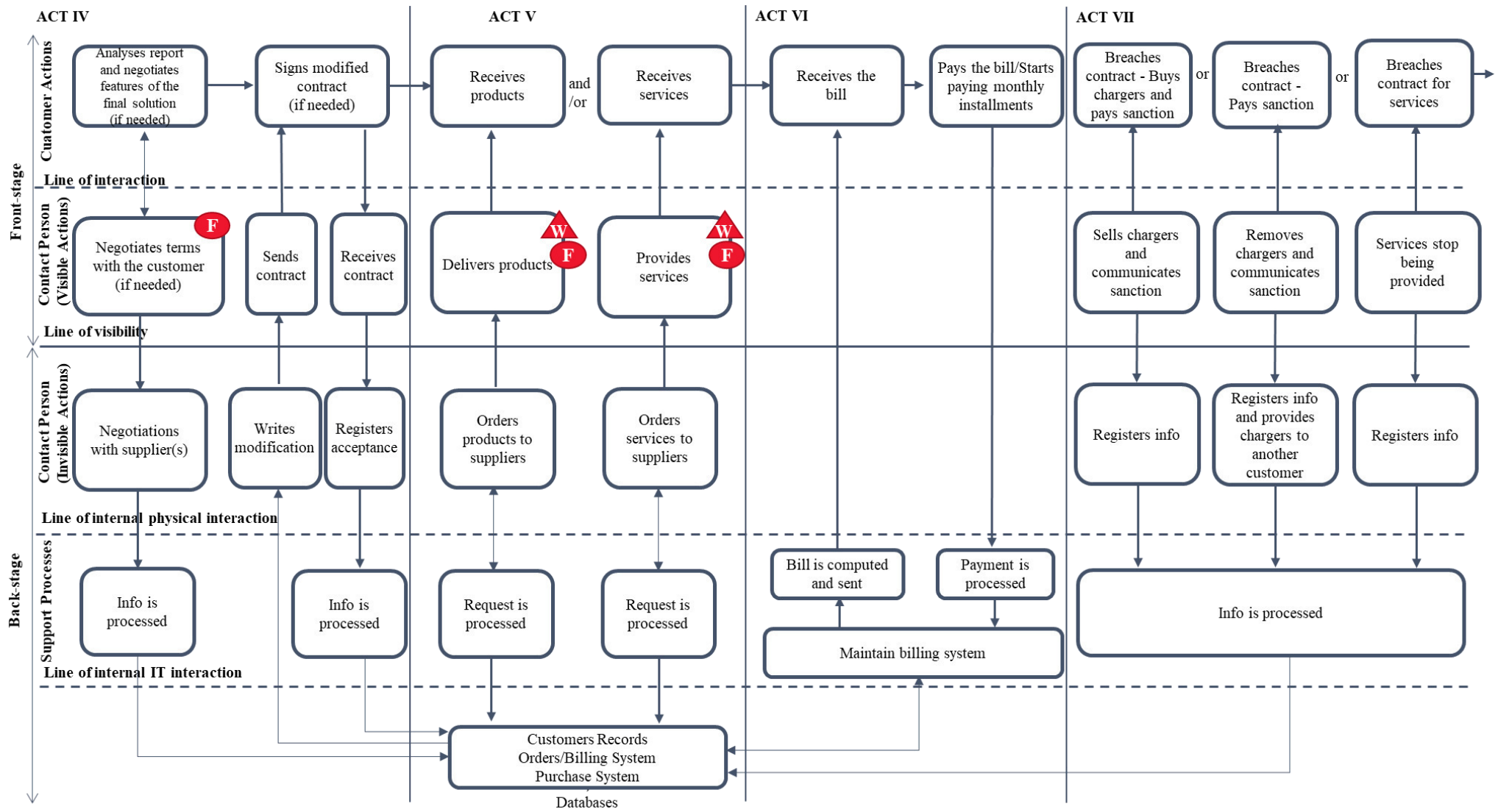
Source: Authors' Own Creation according to Wirtz and Lovelock (2016)

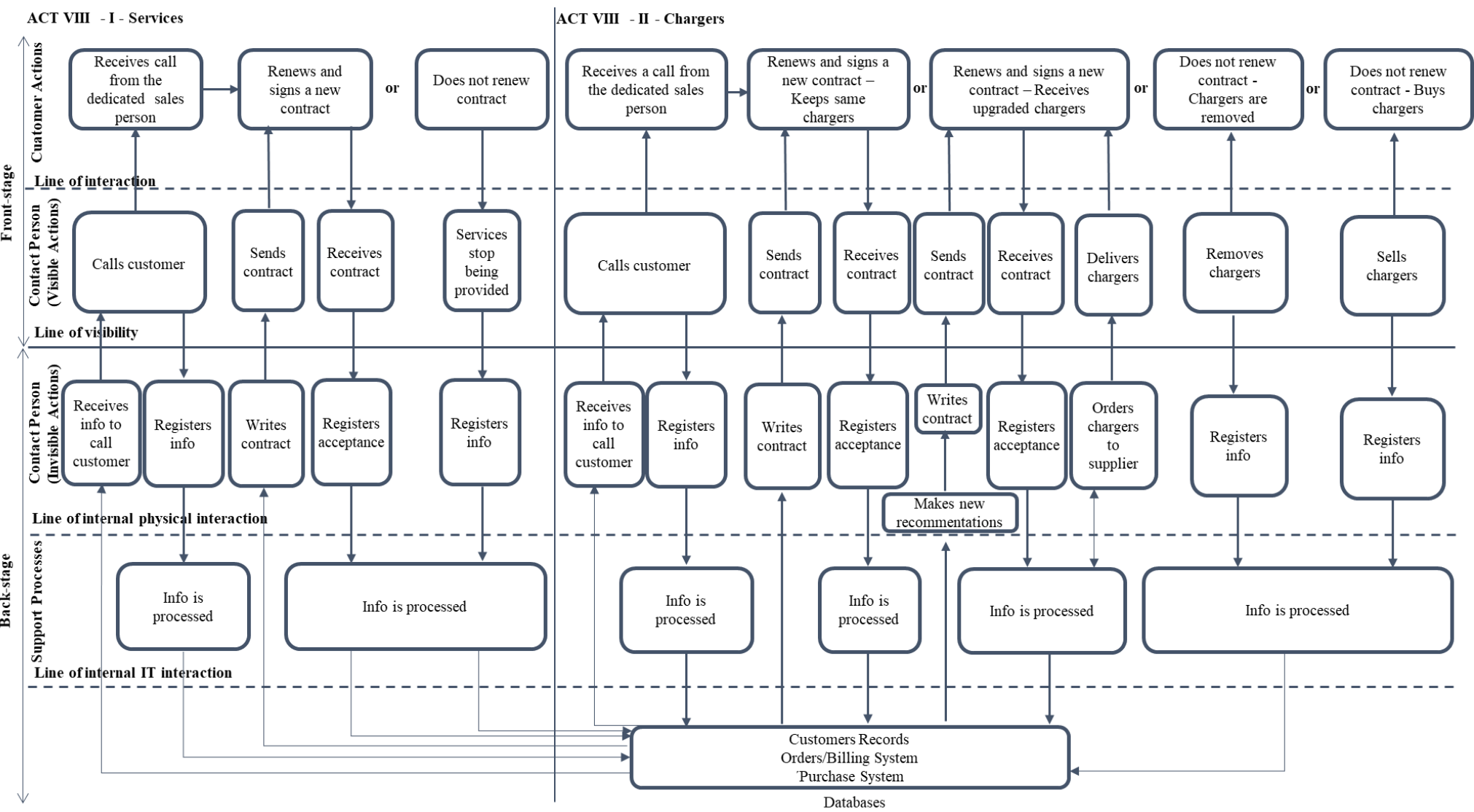
Appendix 71 – EDP Frota Verde's Service Blueprint



1, 2 and 3 are different entry points.





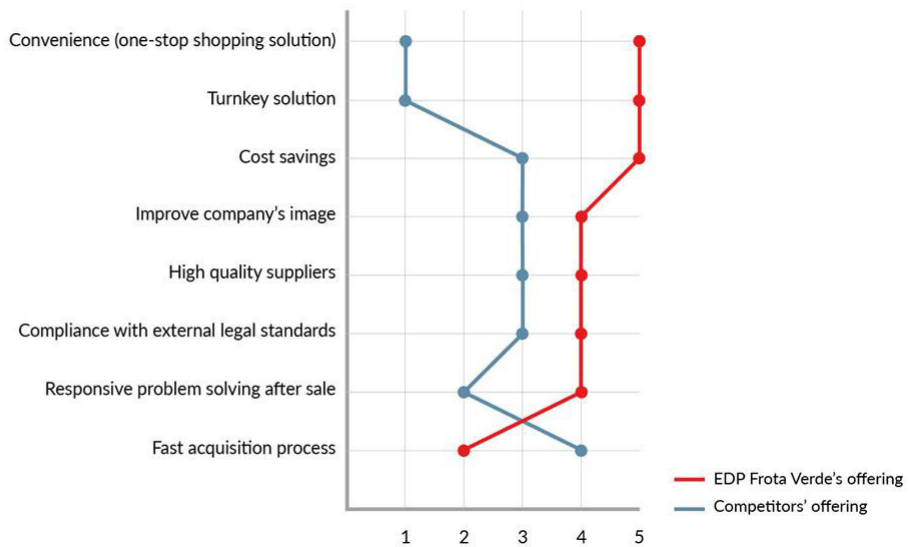


Source: Authors' Own Creation according to Wirtz and Lovelock (2016)

Appendix 72 – Attribute maps for *EDP Frota Verde*

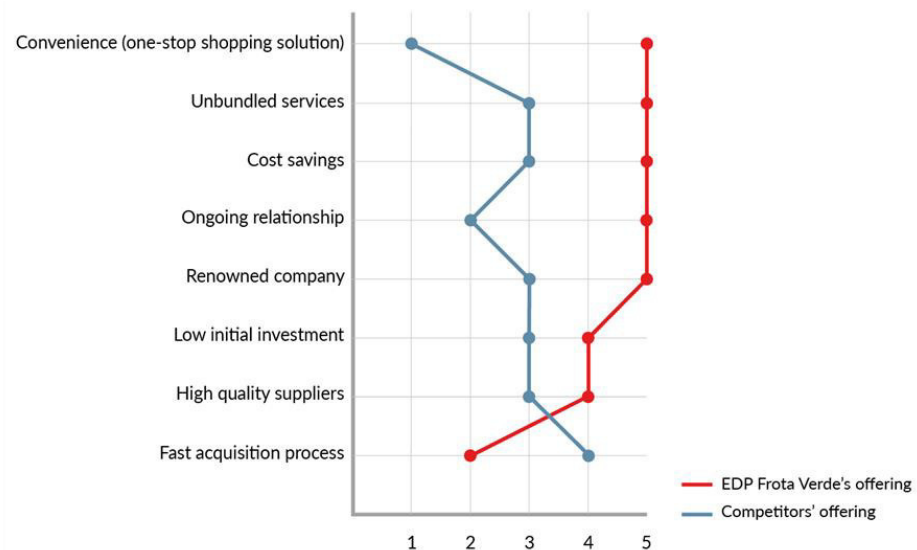
Most important to large companies

Least important to large companies



Most important to SMEs

Least important to SMEs



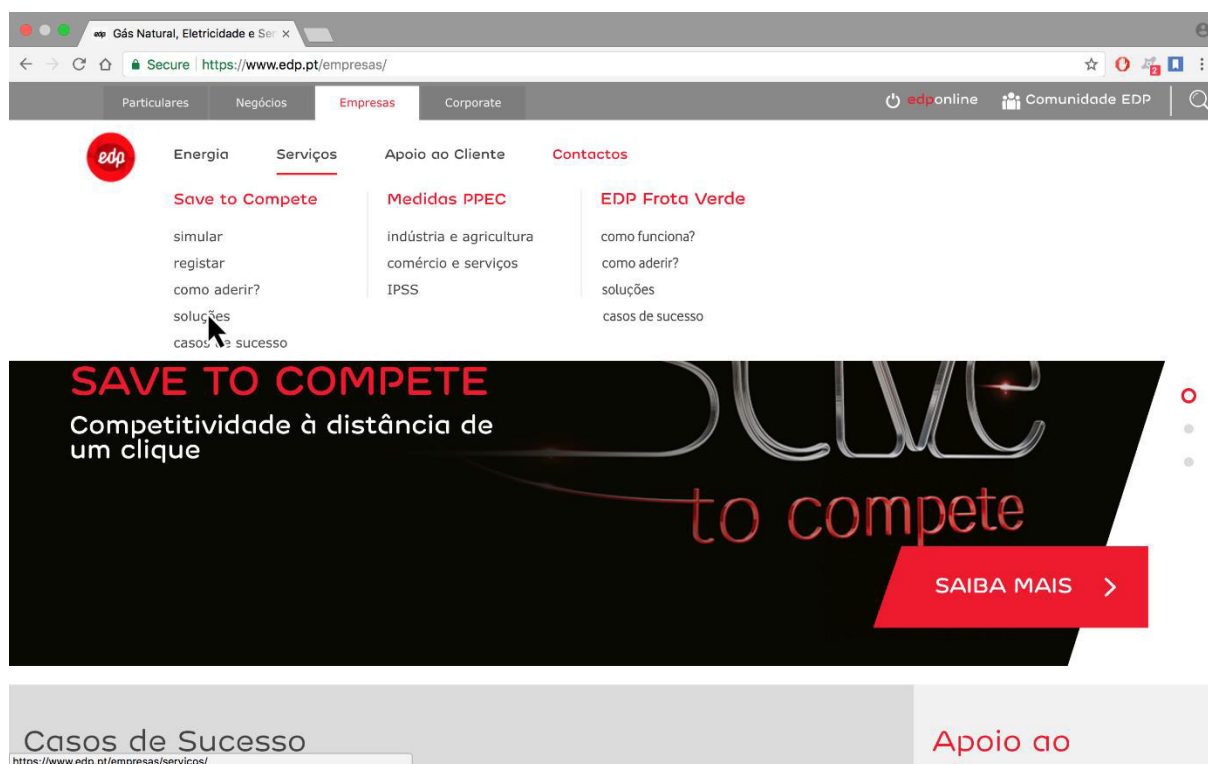
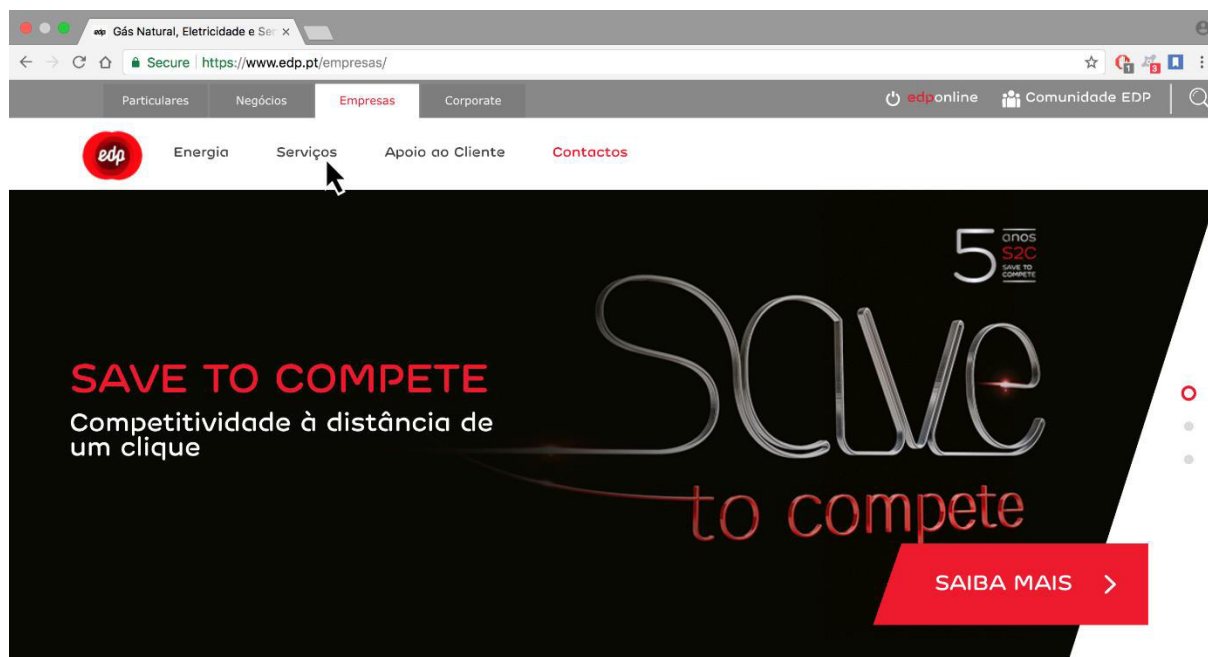
Source: Authors' Own Creation according to Frei and Morriss (2012)

Appendix 73 – EDP Frota Verde's Stand



Source: Authors' Own Creation

Appendix 74 – EDP Frota Verde's Webpage



Gás Natural, Eletricidade e Serviços

Secure | <https://www.edp.pt/corporate/servicos/save-to-competer/#section-solucoes>

Apresentação Como aderir **Soluções** Casos de sucesso **Simular já**

Conheça as soluções Save to Compete



Solar Fotovoltaico
A EDP tem um quota de mercado de 74% em instalações solares.
[SAIBA MAIS](#)



EDP Frota Verde
Eletrifique a sua frota.
[SAIBA MAIS](#)



Iluminação Eficiente
Reduções de até 75% consumo de energia.
[SAIBA MAIS](#)



Eliminação Custo Reativa
Até 25% de poupança na fatura.
[SAIBA MAIS](#)

<https://www.edp.pt/corporate/servicos/solar-fotovoltaico/>

Gás Natural, Eletricidade e Serviços

Secure | <https://www.edp.pt/empresas/>

Particulares Negócios **Empresas** Corporate [edp online](#) [Comunidade EDP](#)

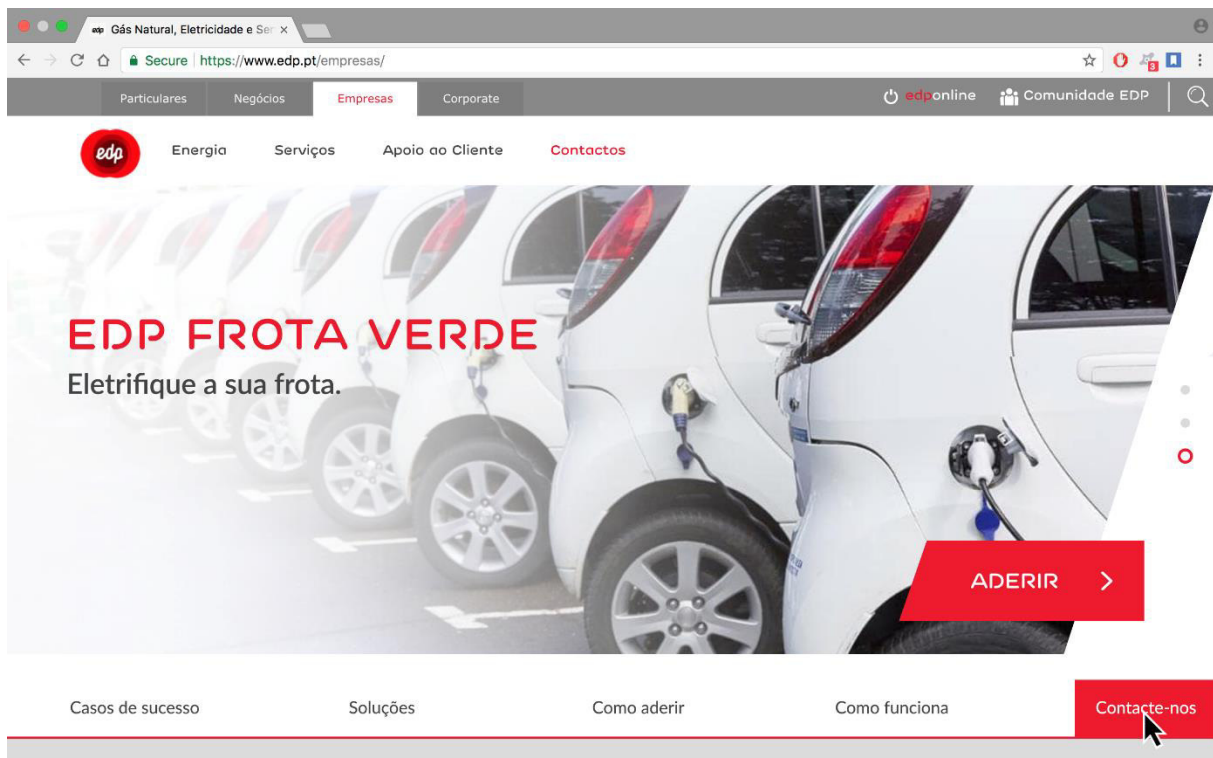
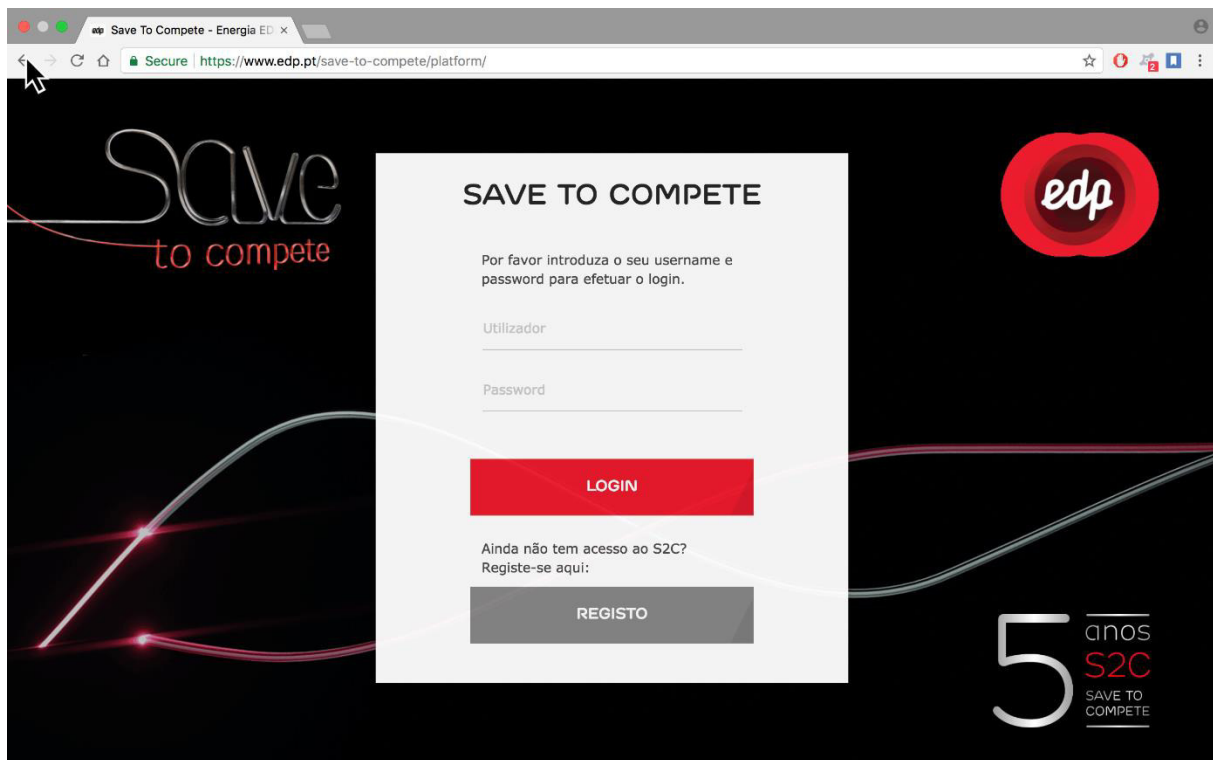
edp Energia Serviços Apoio ao Cliente **Contactos**

EDP FROTA VERDE

Eletrifique a sua frota.

ADERIR >

Casos de sucesso Soluções Como aderir Como funciona **Contacte-nos**



Peça para ser contactado:

Nome *

Empresa *

NIPC *

Email *

Telefone *

☐ Autorizo a EDP Frota Verde a recolher os meus dados pessoais e a utilizá-los exclusivamente para efeitos de ações promocionais desenvolvidas pela EDP Comercial.

* Campos de preenchimento obrigatório

SUBMITER

Source: Authors' Own Creation

Appendix 75 – EDP’s S2C Platform

SAVE TO COMPETE

Por favor introduza o seu username e password para efetuar o login.

Utilizador

Password

LOGIN

Ainda não tem acesso ao S2C?
Registe-se aqui:

REGISTO

edp

5 anos S2C
SAVE TO COMPETE

Source: EDP (n.d.g)

Appendix 76 – Sales Force Size

Duration of Activities at Different Stages and Success Rates

Lead generation and qualification			
Total calls	1		
Call duration (hours)	0,5		
Total time required (hours)	0,5		
Success rate (ask for more information)	70%		
Provision of more information (complex project) and check interest		or	Provision of more information (uncomplex project) and check interest
Total personal meetings to provide info	1		Total emails to provide more information
Meeting duration (hours)	1		Preparation of email (hours)
Meeting preparation (hours)	0,5		Total calls to check interest
Transport (hours)	2		Call duration (hours)
Total calls to check interest	1		Total time required (hours)
Call duration (hours)	0,5		Success rate (request for proposal)
Total time required (hours)	4		50%
Success rate (request for proposal)	50%		
Preparation of proposal and negotiation			
Total personal meetings	1		
Meeting duration (hours)	1,5		
Preparation of proposal (hours)	1,5		
Transport (hours)	2		
Total time required (hours)	5		
Success rate (require consultancy services)	70%		
Proposal for further products/services			
Total personal meetings	1		
Meeting duration (hours)	1		
Meeting/proposal preparation (hours)	1,5		
Transport and (hours)	2		
Total time required (hours)	4,5		
Success rate (require further services)	70%		
Ongoing support for customers			
Total calls per year	4		
Call duration (hours)	0,5		
Total time required (hours)	2		

Time Required for Sales Activities per Year and Number of Sales People

Large companies	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Number of prospects	82	327	351	376	320	336	353	359	366	376	382
Number of prospects that request more information	57	229	246	263	224	235	247	251	256	263	267
Number of prospects that request a proposal	29	114	123	131	140	147	154	157	160	164	167
Number of customers (consultancy services)	20	80	86	92	98	103	108	110	112	115	117
Time required (new complex projects)	502	2009	2160	2310	2197	2309	2421	2466	2511	2578	2623
Time required (new uncomplex projects)	0	0	0	0	0	0	0	0	0	0	0
Sum	502	2009	2160	2310	2197	2309	2421	2466	2511	2578	2623
SMEs	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Number of prospects		204	714	820	943	869	957	1051	1104	1159	1218
Number of prospects that request more information	14	143	500	574	660	608	670	736	773	811	853
Number of prospects that request a proposal	7	71	250	287	330	380	419	460	483	507	533
Number of customers (consultancy services)	5	50	175	201	231	266	293	322	338	355	373
Time required (new complex projects)	92	1004	3516	4038	4641	4771	5255	5775	6062	6367	6690
Time required (new uncomplex projects)	15	165	579	665	764	828	912	1002	1052	1105	1161
Sum	107	1170	4095	4703	5405	5598	6167	6777	7114	7472	7851
Ongoing customers	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Number of ongoing customers (large companies)		19	95	177	264	357	455	558	662	769	878
Additional time required for these customers		38	190	353	528	714	910	1115	1324	1537	1756
Number of ongoing customers (SMEs)		5	52	219	409	629	882	1160	1466	1787	2124
Additional time required for these customers		10	105	437	819	1258	1763	2320	2932	3574	4248
Total time required	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Total time required (large companies)	502	2047	2350	2664	2725	3023	3331	3581	3835	4115	4379
Total time required (SMEs)	107	1179	4199	5140	6224	6856	7930	9097	10046	11046	12099
Number of sales people required	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Number of internal key account managers (large companies)	2	2	2	2	2	3	3	3	3	4	4
Number of external dedicated account managers (SMEs)	0	2	3	4	5	6	6	7	8	9	9

Assumptions	
New projects each year from existing customers (%)	20%
% complex projects (large companies)	100%
% uncomplex projects (large companies)	0%
% complex projects (SMEs)	80%
% uncomplex projects (SMEs)	20%
Annual call/meeting capacity of a sales person (hours)	1260

Source: Authors' Own Creation according to Zoltners, Sinha, and Lorimer (2004)

Appendix 77 – Number of employees per year per job function

Job Functions	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Team leader	1	1	1	1	1	1	1	1	1	1	1
Expert team	3	5	5	5	5	5	7	7	7	7	7
Internal key account managers	2	2	2	2	2	3	3	3	3	4	4
External dedicated account managers	0	2	3	4	5	6	6	7	8	9	9

Source: Authors' Own Creation

Appendix 78 – Forecasted P&L (10 years)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Sales/Revenues	€1,049,222,81	€1,056,295,618	€1,060,360,970,6,11	€1,060,983,356,42	€1,062,531,233,22	€1,063,109,438,41	€1,063,669,952,20	€1,064,215,259,63,74	€1,064,696,109,7,93	€1,065,216,218,28,55	€1,065,705,995,94
Large Companies											
Charging Stations, Consulting, Charging Services	€1,059,702,1,60	€1,065,794,834,75	€1,066,876,333,73	€1,067,197,024,24	€1,067,474,073,0,69	€1,067,755,177,3,15	€1,068,031,200,10,29	€1,068,307,257,13,04,32	€1,068,583,478,89,68	€1,068,859,760,212,48	€1,069,135,145,96,20
Contract Breaches	€1,060,000,000,00	€1,060,000,000,00	€1,060,000,000,00	€1,060,000,000,00	€1,060,000,000,00	€1,060,000,000,00	€1,060,000,000,00	€1,060,000,000,00	€1,060,000,000,00	€1,060,000,000,00	€1,060,000,000,00
Additional Energy/Sales	€1,079,598,00	€1,082,670,02,00	€1,085,067,512,00	€1,087,371,244,50	€1,089,671,283,00	€1,091,961,071,50	€1,094,251,864,85	€1,096,541,750,85	€1,098,831,641,85	€1,101,121,531,65	€1,103,411,421,65
SMEs											
Charging Stations, Consulting, Charging Services	€1,055,555,22	€1,057,158,51,43	€1,058,439,89,88	€1,059,717,17,18	€1,060,995,54,90	€1,062,273,14,63	€1,063,551,74,63	€1,064,829,03,82	€1,066,107,35,18	€1,067,385,82,69	€1,068,663,51,25
Contract Breaches	€1,060,000,000,00	€1,060,000,000,00	€1,060,000,000,00	€1,060,000,000,00	€1,060,000,000,00	€1,060,000,000,00	€1,060,000,000,00	€1,060,000,000,00	€1,060,000,000,00	€1,060,000,000,00	€1,060,000,000,00
Additional Energy/Sales	€1,072,074,80,00	€1,075,292,068,00	€1,078,509,55,00	€1,081,726,99,00	€1,084,943,91,00	€1,088,159,80,00	€1,091,376,70,00	€1,094,593,60,00	€1,097,809,50,00	€1,101,026,40,00	€1,104,243,30,00
Cost of Goods Sold	€1,019,257,00	€1,026,341,917,98	€1,033,063,654,86	€1,039,318,931,17	€1,045,704,001,48	€1,052,091,586,78	€1,058,477,809,99	€1,064,863,342,84	€1,071,249,30,50	€1,077,635,97,22,17	€1,084,029,596,26
Large Companies											
Hardware (Charging Stations)	€1,034,574,00	€1,039,969,50,00	€1,045,142,16,00	€1,050,318,82,00	€1,055,493,24,00	€1,060,668,40,00	€1,065,843,78,00	€1,071,018,44,00	€1,076,193,44,00	€1,081,368,44,00	€1,086,543,44,00
Complementing Charging Services	€1,030,720,00	€1,035,289,60,00	€1,040,472,00,00	€1,045,660,00,00	€1,050,848,00,00	€1,056,036,00,00	€1,061,224,00,00	€1,066,412,00,00	€1,071,600,00,00	€1,076,788,00,00	€1,081,976,00,00
Energy	€1,067,128,45	€1,072,662,07,75	€1,078,197,56,69	€1,083,725,92,14	€1,089,253,95,44	€1,094,782,97,26	€1,100,312,98,14	€1,105,843,81,83	€1,111,374,26,15	€1,116,905,71,62	€1,122,436,67,46
SME's											
Hardware (Charging Stations)	€1,038,286,00	€1,043,600,26,00	€1,048,959,32,00	€1,054,272,70,00	€1,059,584,44,00	€1,064,893,48,00	€1,070,203,86,00	€1,075,513,60,00	€1,080,823,12,00	€1,086,133,64,00	€1,091,443,16,00
Complementing Charging Services	€1,034,400,00	€1,039,148,00,00	€1,043,542,60,00	€1,048,039,20,00	€1,052,536,40,00	€1,057,033,20,00	€1,061,529,20,00	€1,066,026,00,00	€1,070,523,00,00	€1,075,020,00,00	€1,079,517,00,00
Energy	€1,072,074,80,55	€1,075,292,068,74,23	€1,078,509,55,94,17	€1,081,726,99,17,03	€1,084,943,91,07,65,03	€1,088,159,80,14,52	€1,091,376,70,14,85	€1,094,593,60,17,67,01	€1,097,809,50,21,82,35	€1,101,026,40,26,36,55	€1,104,243,30,31,52,80
Transportation	€1,000,000,00	€1,000,000,00,00	€1,000,000,00,00	€1,000,000,00,00	€1,000,000,00,00	€1,000,000,00,00	€1,000,000,00,00	€1,000,000,00,00	€1,000,000,00,00	€1,000,000,00,00	€1,000,000,00,00
Gross Revenue	€1,055,665,81	€1,058,287,538,20	€1,060,246,051,25	€1,062,163,625,25	€1,064,081,31,74	€1,066,002,98,62	€1,067,918,42,21	€1,069,833,120,90	€1,071,748,567,43	€1,073,663,206,38	€1,075,578,999,68
Gross Margin	13%	27%	24%	29%	30%	31%	32%	32%	32%	32%	32%
Marketing Costs	€1,089,896,00	€1,095,501,09,00	€1,101,64,50	€1,107,78,09,00	€1,113,92,00,00	€1,120,06,00,00	€1,126,20,00,00	€1,132,34,00,00	€1,138,48,00,00	€1,144,62,00,00	€1,150,76,00,00
Operating Costs	€1,062,910,86	€1,068,585,70,31	€1,074,261,96,52	€1,079,946,53	€1,085,621,54	€1,091,307,36	€1,096,983,56	€1,102,669,98	€1,108,346,22	€1,114,022,82	€1,119,698,27
Total Operating Expenses	€1,062,910,86	€1,068,585,70,31	€1,074,261,96,52	€1,079,946,53	€1,085,621,54	€1,091,307,36	€1,096,983,56	€1,102,669,98	€1,108,346,22	€1,114,022,82	€1,119,698,27
EBITDA	€1,062,910,86	€1,068,585,70,31	€1,074,261,96,52	€1,079,946,53	€1,085,621,54	€1,091,307,36	€1,096,983,56	€1,102,669,98	€1,108,346,22	€1,114,022,82	€1,119,698,27
Depreciation	€1,092,920,75	€1,098,468,11,75	€1,104,011,81,25	€1,109,556,65,50	€1,115,101,46,38,25	€1,120,646,31,64,75	€1,126,191,16,26,00	€1,131,736,01,11,25	€1,137,280,86,18,50	€1,142,825,71,59,00	€1,148,370,56,77,75
EBT	€1,068,515,80	€1,070,117,47,14	€1,070,245,15,28,02	€1,070,389,90,22	€1,070,531,85,95,95	€1,070,673,02,59,52	€1,070,814,18,28,23	€1,070,955,27,77,66	€1,071,096,36,52,93	€1,071,237,45,10,56	€1,071,378,54,85,11
Taxes Paid	€1,068,515,80	€1,070,117,47,14	€1,070,245,15,28,02	€1,070,389,90,22	€1,070,531,85,95,95	€1,070,673,02,59,52	€1,070,814,18,28,23	€1,070,955,27,77,66	€1,071,096,36,52,93	€1,071,237,45,10,56	€1,071,378,54,85,11
Taxes to Pay	€1,068,515,80	€1,070,117,47,14	€1,070,245,15,28,02	€1,070,389,90,22	€1,070,531,85,95,95	€1,070,673,02,59,52	€1,070,814,18,28,23	€1,070,955,27,77,66	€1,071,096,36,52,93	€1,071,237,45,10,56	€1,071,378,54,85,11
Taxes Forward	€1,068,515,80	€1,070,117,47,14	€1,070,245,15,28,02	€1,070,389,90,22	€1,070,531,85,95,95	€1,070,673,02,59,52	€1,070,814,18,28,23	€1,070,955,27,77,66	€1,071,096,36,52,93	€1,071,237,45,10,56	€1,071,378,54,85,11
Profit After Taxes (NOPAT)	€1,068,515,80	€1,070,117,47,14	€1,070,245,15,28,02	€1,070,389,90,22	€1,070,531,85,95,95	€1,070,673,02,59,52	€1,070,814,18,28,23	€1,070,955,27,77,66	€1,071,096,36,52,93	€1,071,237,45,10,56	€1,071,378,54,85,11
Depreciation	€1,092,920,75	€1,098,468,11,75	€1,104,011,81,25	€1,109,556,65,50	€1,115,101,46,38,25	€1,120,646,31,64,75	€1,126,191,16,26,00	€1,131,736,01,11,25	€1,137,280,86,18,50	€1,142,825,71,59,00	€1,148,370,56,77,75
Operating Cash Flow	€1,062,910,86	€1,068,585,70,31	€1,074,261,96,52	€1,079,946,53	€1,085,621,54	€1,091,307,36	€1,096,983,56	€1,102,669,98	€1,108,346,22	€1,114,022,82	€1,119,698,27
CAPEX	€1,079,211,00	€1,084,704,36,00	€1,090,197,326,00	€1,095,681,858,00	€1,101,169,102,00	€1,106,642,942,00	€1,112,127,000,00	€1,117,601,710,00	€1,123,074,30,00	€1,128,547,31,00	€1,134,022,46,00
Equipment (Charging Station for Rent)	€1,069,211,00	€1,074,704,36,00	€1,080,197,326,00	€1,085,681,858,00	€1,091,169,102,00	€1,096,642,942,00	€1,102,127,000,00	€1,107,601,710,00	€1,113,074,30,00	€1,118,547,31,00	€1,124,022,46,00
Liquid Assets Value	€1,069,211,00	€1,074,704,36,00	€1,080,197,326,00	€1,085,681,858,00	€1,091,169,102,00	€1,096,642,942,00	€1,102,127,000,00	€1,107,601,710,00	€1,113,074,30,00	€1,118,547,31,00	€1,124,022,46,00
Development (Consulting Tool & Changes)	€1,050,000,00	€1,050,000,00	€1,050,000,00	€1,050,000,00	€1,050,000,00	€1,050,000,00	€1,050,000,00	€1,050,000,00	€1,050,000,00	€1,050,000,00	€1,050,000,00
GPS Trackers and Software	€1,060,000,00	€1,060,000,00	€1,060,000,00	€1,060,000,00	€1,060,000,00	€1,060,000,00	€1,060,000,00	€1,060,000,00	€1,060,000,00	€1,060,000,00	€1,060,000,00
Net Income (FCF)	€1,055,424,05	€1,062,025,77,11	€1,068,047,35,77	€1,074,063,01,08	€1,080,079,62,70,83	€1,086,095,79,73,88	€1,092,112,90,74,38	€1,098,129,92,46,44	€1,104,147,94,18,52	€1,110,165,96,85,69	€1,116,183,99,80,21
Discounted Cash Flows	€1,055,424,05	€1,062,025,77,11	€1,068,047,35,77	€1,074,063,01,08	€1,080,079,62,70,83	€1,086,095,79,73,88	€1,092,112,90,74,38	€1,098,129,92,46,44	€1,104,147,94,18,52	€1,110,165,96,85,69	€1,116,183,99,80,21
Accumulated Discounted Cash Flows	€1,055,424,05	€1,062,025,77,11	€1,068,047,35,77	€1,074,063,01,08	€1,080,079,62,70,83	€1,086,095,79,73,88	€1,092,112,90,74,38	€1,098,129,92,46,44	€1,104,147,94,18,52	€1,110,165,96,85,69	€1,116,183,99,80,21

Source: Authors' Own Creation

Appendix 79 – Company profiles for Consultancy Project (Assumption)

	Company Profiles		
	Simple	Medium	Complex
SMEs	20% 10 PEVs	75% 26 PEVs	5% 100 PEVs
Large Companies	0%	40% 47 PEVs	60% 134 PEVs

1 Charging Station for 4 PEVs

Source: Authors' Own Creation

Appendix 80 – Sales Revenues - Large Companies

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Simple	0	0	0	0	0	0	0	0	0	0	0
Medium	5500	16500	16500	22000	22000	22000	22000	22000	22000	27500	27500
Complex	10600	53000	53000	53000	63600	63600	63600	74200	74200	74200	74200
Simple-Buy	0	0	0	0	0	0	0	0	0	0	0
Medium-Buy	55741,74	167225,2	167225,2	167225,2	222967	222967	222967	222967	222967	222967	222967
Complex-Buy	146710,2	733551,2	733551,2	733551,2	880261,4	880261,4	880261,4	880261,4	880261,4	1026972	1026972
Simple-Buy-Services	0	0	0	0	0	0	0	0	0	0	0
Medium-Buy-Services	55610,49	362575,4	362575,4	362575,4	423004,7	423004,7	483433,9	483433,9	483433,9	483433,9	483433,9
		9637,5	57825	57825	57825	67462,5	67462,5	77100	77100	77100	77100
			9637,5	48187,5	48187,5	48187,5	57825	57825	67462,5	67462,5	67462,5
				9637,5	48187,5	48187,5	48187,5	57825	57825	67462,5	67462,5
					8400	33600	33600	33600	33600	33600	42000
						8400	33600	33600	33600	33600	33600
							8400	25200	25200	25200	25200
								8400	25200	25200	25200
									8400	16800	16800
										8400	16800
											8400
Complex-Buy-Services	300525,5	1306842	1470197	1633552	1633552	1796908	1796908	1960263	1960263	1960263	1960263
		52370	209480	235665	261850	261850	288035	288035	314220	314220	314220
			52370	183295	209480	235665	235665	235665	235665	261850	261850
				52370	183295	209480	235665	235665	235665	235665	261850
					23800	119000	142800	142800	142800	142800	142800
						23800	119000	142800	142800	142800	142800
							23800	95200	119000	119000	119000
								23800	95200	119000	119000
									23800	71400	95200
										23800	71400
											23800

Simple Renting	0	0	0	0	0	0	0	0	0	0	0
Medium Renting	61927,41	495419,3	544961,2	569732,2	619274,1	644045	668816	693587	693587	718357,9	718357,9
		123854,8	495419,3	544961,2	569732,2	619274,1	644045	668816	693587	693587	718357,9
			99083,85	421106,4	470648,3	495419,3	520190,2	544961,2	569732,2	594503,1	594503,1
				99083,85	421106,4	470648,3	495419,3	520190,2	544961,2	569732,2	594503,1
					0	14395,5	14395,5	14395,5	14395,5	14395,5	14395,5
					0	22795,5	22795,5	22795,5	22795,5	45591	45591
					13481,88	40445,65	53927,53	53927,53	53927,53	53927,53	67409,41
					70600,39	258868,1	282401,6	305935	329468,5	329468,5	353002
						0	8400	8400	8400	8400	16800
						13481,88	40445,65	53927,53	53927,53	53927,53	53927,53
						70600,39	258868,1	282401,6	305935	329468,5	329468,5
							0	8400	8400	8400	8400
							13481,88	40445,65	40445,65	40445,65	40445,65
							70600,39	211801,2	235334,6	258868,1	282401,6
								0	8400	8400	8400
								13481,88	40445,65	40445,65	40445,65
								70600,39	211801,2	235334,6	258868,1
									0	8400	8400
									0	0	0
									0	0	0
									0	10651,31	10651,31
									23533,46	47066,93	47066,93
									0	0	0
									0	22795,5	22795,5
									13481,88	26963,76	26963,76
									47066,93	141200,8	164734,2
										0	16800
										10651,31	10651,31
										26963,76	26963,76
										141200,8	164734,2
											0
											10651,31
											26963,76
											117667,3

Complex Renting	260406,3	1953047	2083250	2278555	2408758	2538961	2669164	2734266	2734266	2799367	2864469
		520812,5	1953047	2083250	2278555	2408758	2538961	2669164	2734266	2734266	2799367
			455711	1692641	1757742	1953047	2018149	2148352	2278555	2343656	2343656
				455711	1692641	1757742	1953047	2018149	2148352	2278555	2343656
					0	40787,25	40787,25	40787,25	40787,25	40787,25	40787,25
					0	129174,5	129174,5	129174,5	129174,5	129174,5	129174,5
					38198,67	190993,3	190993,3	229192	229192	267390,7	267390,7
					313582,8	1066182	1128898	1254331	1254331	1317048	1442481
						0	47600	47600	47600	47600	47600
						38198,67	190993,3	190993,3	229192	229192	267390,7
						313582,8	1066182	1128898	1254331	1254331	1317048
							0	47600	47600	47600	47600
							38198,67	152794,7	152794,7	190993,3	190993,3
							250866,3	878031,9	940748,5	1066182	1066182
								0	47600	47600	47600
								38198,67	152794,7	152794,7	190993,3
								250866,3	878031,9	940748,5	1066182
									0	23800	23800
									0	0	0
									0	0	0
									0	30178,7	30178,7
									62716,57	188149,7	188149,7
									0	0	0
									0	64587,25	64587,25
									38198,67	114596	114596
									188149,7	564449,1	627165,7
										0	47600
										30178,7	30178,7
										114596	114596
										564449,1	627165,7
										0	0
											30178,7
											114596
											501732,5
TOTAL	897021,6	5794835	8763834	11703924	14740731	17551773	20120010	22573104	24788970	27602112	29514696

Source: Authors' Own Creation

Appendix 81 – Sales Revenues – SMEs

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Simple	0	2700	10800	10800	13500	13500	16200	16200	18900	18900	18900
Medium	0	22000	71500	82500	93500	110000	121000	132000	137500	148500	154000
Complex	0	0	10600	10600	10600	10600	10600	21200	21200	21200	21200
Simple-Buy	0	30727,5	122910	138273,8	153637,5	184365	199728,8	215092,5	230456,3	245820	261183,8
Medium-Buy	34891,63	279133,1	1046749	1186315	1360774	1570123	1709690	1884148	1988823	2093498	2198173
Complex-Buy	0	111522,3	223044,5	223044,5	334566,8	334566,8	334566,8	446089,1	446089,1	446089,1	446089,1
Simple-Buy-Services	0	31282,5	125130	140771,3	156412,5	187695	203336,3	218977,5	234618,8	250260	265901,3
		0	13200,25	52801,01	59401,14	66001,26	79201,52	85801,64	92401,77	99001,9	105602
			0	13200,25	46200,88	52801,01	59401,14	66001,26	72601,39	79201,52	85801,64
				0	13200,25	46200,88	52801,01	59401,14	66001,26	72601,39	79201,52
					0	2100	10500	12600	12600	14700	16800
						0	2100	10500	12600	12600	14700
							0	2100	8400	10500	10500
								0	2100	8400	10500
									0	2100	6300
										0	2100
											0
Medium-Buy-Services	37496,85	360416,5	1351562	1531770	1757030	2027343	2207551	2432811	2567967	2703124	2838280
		6137,5	49100	184125	208675	239362,5	276187,5	300737,5	331425	349837,5	368250
			6137,5	42962,5	159575	177987,5	202537,5	233225	257775	282325	294600
				6137,5	42962,5	159575	177987,5	202537,5	233225	257775	282325
					4900	24500	88200	98000	112700	132300	142100
						4900	24500	88200	98000	112700	132300
							4900	19600	73500	83300	98000
								4900	19600	73500	83300
									4900	14700	53900
										4900	14700
											4900
Complex-Buy-Services	0	121867,3	243734,5	243734,5	365601,8	365601,8	365601,8	487469,1	487469,1	487469,1	487469,1
		0	19885	39770	39770	59655	59655	59655	79540	79540	79540
			0	19885	39770	39770	59655	59655	59655	59655	59655
				0	19885	39770	39770	59655	59655	59655	59655
					0	47251,7	47251,7	47251,7	94503,4	94503,4	94503,4
						0	47251,7	47251,7	47251,7	94503,4	94503,4
							0	47251,7	47251,7	47251,7	94503,4
								0	47251,7	47251,7	47251,7
									0	47251,7	47251,7
										0	47251,7
											0

Simple Renting	0	19800,38	59401,14	72601,39	79201,52	92401,77	105602	112202,1	118802,3	125402,4	132002,5
		0	19800,38	59401,14	72601,39	79201,52	92401,77	105602	112202,1	118802,3	125402,4
			0	19800,38	52801,01	59401,14	66001,26	79201,52	92401,77	92401,77	99001,9
				0	19800,38	52801,01	59401,14	66001,26	79201,52	92401,77	92401,77
					0	0	3598,875	3598,875	3598,875	3598,875	3598,875
					0	0	5698,875	5698,875	5698,875	5698,875	5698,875
					0	3370,471	6740,941	10111,41	10111,41	13481,88	13481,88
					0	5992,626	23970,51	23970,51	29963,13	29963,13	35955,76
						0	0	2100	2100	2100	2100
						0	3370,471	6740,941	10111,41	10111,41	13481,88
						0	5992,626	23970,51	23970,51	29963,13	29963,13
							0	0	2100	2100	2100
							0	3370,471	6740,941	10111,41	10111,41
							0	5992,626	17977,88	17977,88	23970,51
								0	0	2100	2100
								0	3370,471	6740,941	10111,41
								0	5992,626	17977,88	17977,88
									0	0	2100
									0	0	0
									0	0	0
									0	0	2662,827
									0	0	5992,626
									0	0	0
									0	0	0
									0	0	3370,471
									0	0	5992,626
										0	0
										0	2662,827
										0	3370,471
										0	5992,626
											0
											0
											0
											0
											0

Medium Renting	7555,215	151104,3	528865,1	619527,6	710190,2	815963,2	891515,4	982178	1027509	1087951	1133282
		15110,43	151104,3	528865,1	619527,6	710190,2	815963,2	891515,4	982178	1027509	1087951
			15110,43	135993,9	453312,9	528865,1	604417,2	695079,8	755521,5	831073,7	876404,9
				15110,43	135993,9	453312,9	528865,1	604417,2	695079,8	755521,5	831073,7
					0	8397,375	25192,13	33589,5	33589,5	41986,88	41986,88
					0	13297,38	39892,13	53189,5	53189,5	66486,88	66486,88
					0	23593,29	70779,88	86508,74	94373,17	110102	117966,5
					0	55491,72	194221	221966,9	249712,7	291331,5	319077,4
						0	4900	14700	19600	19600	24500
						0	23593,29	70779,88	86508,74	94373,17	110102
						0	55491,72	194221	221966,9	249712,7	291331,5
							0	4900	14700	14700	14700
							0	23593,29	62915,45	70779,88	78644,31
							0	41618,79	166475,2	194221	208094
								0	4900	14700	14700
								0	23593,29	62915,45	70779,88
								0	41618,79	166475,2	194221
									0	4900	9800
									0	0	2519,213
									0	0	7419,213
									0	6213,262	12426,52
									0	13872,93	55491,72
									0	0	8397,375
									0	0	13297,38
									0	7864,431	31457,72
									0	13872,93	69364,65
										0	4900
										6213,262	12426,52
										7864,431	31457,72
										13872,93	69364,65
											0
											6213,262
											7864,431
											13872,93

Complex Renting	0	49636,7	99273,4	148910,1	148910,1	198546,8	198546,8	198546,8	248183,5	248183,5	248183,5								
		0	49636,7	99273,4	148910,1	148910,1	198546,8	198546,8	198546,8	248183,5	248183,5								
			0	49636,7	99273,4	148910,1	148910,1	148910,1	148910,1	148910,1	198546,8								
				0	49636,7	99273,4	148910,1	148910,1	148910,1	148910,1	148910,1								
					0	0	0	0	0	0	0								
					0	0	0	0	0	0	0								
					0	0	28087,25	28087,25	28087,25	28087,25	28087,25								
					0	0	47251,7	47251,7	47251,7	47251,7	47251,7								
						0	0	0	0	0	0								
						0	0	28087,25	28087,25	28087,25	28087,25								
						0	0	47251,7	47251,7	47251,7	47251,7								
							0	0	0	0	0								
							0	0	28087,25	28087,25	28087,25								
							0	0	47251,7	47251,7	47251,7								
								0	0	0	0								
								0	0	28087,25	28087,25								
									0	47251,7	47251,7								
									0	0	0								
										0	0								
											0								
												0							
													0						
														0					
															0				
																0			
																	0		
																		0	
																			0
	TOTAL	7555,215	215851,4	843989,9	1597317	2365755	3214115	4074456	4849404	5625735	6421583	7185551							

Appendix 82 – Contract Breaches – Large companies

OPERATING SERVICES

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Simple Buy Services			0	0	0	0	0	0	0	0	0
Medium Buy Services			0	2750	2750	2750	2750	2750	2750	2750	2750
Complex Buy Services			0	5300	5300	5300	5300	10600	10600	10600	10600

RENTING

[illegible]

[illegible]

Complex Renting		0	0	0	0	0	0	0	0	0	
		86874,5	260623,5	347498	347498	434372,5	434372,5	434372,5	434372,5	434372,5	
		0	73278,75	73278,75	73278,75	73278,75	73278,75	73278,75	73278,75	73278,75	
						0	0	0	0	0	
						0	24472,35	24472,35	24472,35	24472,35	
						0	0	0	0	0	
						0	0	0	0	0	
						81574,5	163149	163149	163149	163149	
						0	67978,75	67978,75	67978,75	67978,75	
										0	
										0	
										0	
										0	
										0	
										0	
									81574,5		
									0		
TOTAL	€2018,00	€2019,00	€202435,50	€2033797,75	€203673,25	€203674,25	€203665,25	€2057573,85	€2066212,15	€2066213,15	€2076579,65

Source: Authors' Own Creation

Appendix 83 – Contract Breaches – SMEs

OPERATING SERVICES

[illegible]

RENTING

[illegible]

Medium Renting	0	0	0	0	0	0	0	0	0
	0	19544,75	78179	97723,75	117268,5	117268,5	136813,3	156358	156358
	0	0	16745,63	16745,63	16745,63	33491,25	33491,25	33491,25	33491,25
					0	0	0	0	0
					0	0	5038,425	10076,85	10076,85
					0	0	0	0	0
					0	0	0	0	0
					0	16794,75	33589,5	33589,5	33589,5
					0	0	0	0	13995,63
									0
									0
									0
									0
									0
									0
									0
									0

Appendix 84 – Additional Energy Sales

Energy Consumption Large companies & SMEs

LARGE COMPANIES

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Simple	0	0	0	0	0	0	0	0	0	0	0
Medium	7	35	62	87	116	143	170	195	218	246	268
Complex	11	53	93	133	173	214	254	290	325	367	398
	80%	80%	60%	60%	60%	60%	60%	60%	60%	60%	60%
TOTAL SALES	€79,598,00	€132,670,00	€106,751,00	€137,124,50	€171,238,00	€206,170,50	€238,418,00	€280,387,50	€323,020,00	€371,763,00	€425,526,00
TOTAL COGS	€67,128,45	€126,620,75	€87,756,69	€125,792,14	€156,358,44	€187,789,26	€216,619,14	€231,381,83	€253,262,15	€282,027,16	€310,667,46

SMEs

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Simple	0	7	30	51	72	95	120	145	169	191	217
Medium	3	28	115	192	273	365	454	549	639	732	826
Complex	0	3	8	13	20	26	32	38	44	49	52
	80%	80%	60%	60%	60%	60%	60%	60%	60%	60%	60%
TOTAL SALES	€70,748,00	€92,068,00	€115,955,00	€136,999,00	€158,910,00	€201,480,00	€232,698,00	€285,038,00	€329,448,00	€375,554,00	€427,770,00
TOTAL COGS	€20,208,55	€84,74,23	€94,740,17	€121,717,03	€107,765,03	€133,841,52	€148,647,85	€179,376,01	€211,682,35	€221,436,55	€250,552,80

Source: Authors' Own Creation

Average of Energy Prices & Diesel Prices

Prices:	
€/kWh BTE Full	€ 0.13
€/kWh BTE Super Empty	€ 0.08
€/kWh MT Full	€ 0.11
€/kWh MT Super Empty	€ 0.07
€/kWh Average Cost per kWh	€ 0.097
€/L (DIESEL)	€ 1.34
Assumptions:	
Long usage rate	
Prices on December 1, 2017	

Prices of Electricity Consumption of Regulated Market but applying a margin of 2.6% (assumption) to calculate the Prices for the Liberalized Market (BTE)

BTE Clients			Margin for Liberalized Market Prices (2,6%)
Active Energy		€/kWh	margin €/kWh
Long usage rate	Peak hours	0,1598	0,1640
	Full hours	0,1267	0,12999
	Normal empty hours	0,0844	0,0866
	Super empty hours	0,0742	0,07613

Prices of Electricity Consumption of Regulated Market but applying a margin of 2.6% (assumption) to calculate the Prices for the Liberalized Market (MT)

MT Clients				Margin for Liberalized Market Prices (2,6%)
Active Energy			€/kWh	margin €/kWh
Long usage rate	Period I, IV	Peak hours	0,1384	0,1420
		Full hours	0,1087	0,1115
		Normal empty hours	0,0767	0,0787
		Super empty hours	0,0654	0,0671
	Period II, III	Peak hours	0,1414	0,1451
		Full hours	0,1109	0,1138
		Normal empty hours	0,0793	0,0814
		Super empty hours	0,0729	0,0748

Prices of Electricity Consumption of Regulated Market but applying a margin of 2.6% (assumption) to calculate the Prices for the Liberalized Market (MT) – Average

Long Usage Rate	Average Period I, IV & Period II, III	Full Hours	0,1115	0,1127
		Full Hours	0,1138	
		Super Empty hours	0,0671	0,0709
		Super Empty hours	0,0748	

Source: Authors' Own Creation according to EDP SU (2017a&b) and ERSE (2017b) energy prices

Appendix 85 – COGS

CHARGING STATIONS

LARGE COMPANIES

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Simple	0	0	0	0	0	0	0	0	0	0	0
Medium	2	9	9	9	11	11	12	12	12	12	12
Complex	3	13	14	15	16	17	17	18	18	19	19
TOTAL CHARGING STATIONS	126	550	584	618	676	710	722	756	756	790	790
TOTAL COGS	434574	1896950	2014216	2131482	2331524	2448790	2490178	2607444	2607444	2724710	2724710

SMEs

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Simple	0	4	16	18	20	24	26	28	30	32	34
Medium	2	16	60	68	78	90	98	108	114	120	126
Complex	0	2	4	4	6	6	6	8	8	8	8
TOTAL CHARGING STATIONS	14	174	568	630	756	852	914	1040	1088	1136	1184
TOTAL COGS	48286	600126	1959032	2172870	2607444	2938548	3152386	3586960	3752512	3918064	4083616

CHARGING SERVICES

LARGE COMPANIES

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Simple	0	0	0	0	0	0	0	0	0	0	0
Medium	6	32	59	84	112	138	165	190	213	241	263
Complex	10	48	88	128	167	207	247	283	318	359	390
TOTAL CHARGING STATIONS	412	2016	3700	5360	7022	8694	10378	11902	13368	15098	16416
TOTAL COGS	230720	1128960	2072000	3001600	3932320	4868640	5811680	6665120	7486080	8454880	9192960

SMEs

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Simple	0	5	22	42	62	83	106	130	153	174	199
Medium	2	20	85	158	234	319	402	491	578	667	756
Complex	0	2	6	11	17	23	29	34	40	45	48
TOTAL CHARGING STATIONS	14	205	811	1507	2249	3057	3857	4677	5505	6316	7089
TOTAL COGS	7840	114800	454160	843920	1259440	1711920	2159920	2619120	3082800	3536960	3969840

CONSULTANCY

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Simple	0	8	29	33	37	43	48	51	55	58	61
Medium	11	62	142	160	182	205	222	241	251	265	275
Complex	12	51	58	63	69	73	75	81	82	84	85
TOTAL CONSULTING DAYS	210	1008	1635	1815	2031	2235	2376	2571	2655	2772	2853
TOTAL COGS	10500	50400	81750	90750	101550	111750	118800	128550	132750	138600	142650

Source: Authors' Own Creation

Appendix 86 – Marketing Costs

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Costs for creating content	27950			20000			20000			20000	
Media and Events	71018	150109	81165	58409	58409	58409	58409	58409	58409	58409	58409
Total	98968	150109	81165	78409	58409	58409	78409	58409	58409	78409	58409

Source: Authors' Own Creation

Appendix 87 – Operating Expenses (OPEX)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Salaries											
Experts	2300,00€	21000,00€	21000,00€	21000,00€	21000,00€	21000,00€	29400,00€	29400,00€	29400,00€	29400,00€	29400,00€
Team Leader/Experts	7000,00€	4000,00€	4000,00€	4000,00€	4000,00€	4000,00€	4000,00€	4000,00€	4000,00€	4000,00€	4000,00€
Internal Account Managers	0000,00€	0000,00€	0000,00€	0000,00€	0000,00€	0000,00€	0000,00€	0000,00€	0000,00€	2000,00€	2000,00€
External Account Managers	€	52120,00€	5360,00€	0480,00€	5360,00€	0720,00€	0720,00€	05340,00€	20960,00€	36080,00€	36080,00€
Bonus											
Experts	€	8750,00€	8750,00€	8750,00€	8750,00€	8750,00€	2250,00€	2250,00€	2250,00€	2250,00€	2250,00€
Team Leader/Experts	€	250,00€	250,00€	250,00€	250,00€	250,00€	250,00€	250,00€	250,00€	250,00€	250,00€
Internal Account Managers	€	500,00€	500,00€	500,00€	500,00€	750,00€	750,00€	750,00€	750,00€	500,00€	500,00€
Social Security											
Experts	4962,50€	9375,00€	9375,00€	9375,00€	9375,00€	9375,00€	93825,00€	93825,00€	93825,00€	93825,00€	93825,00€
Team Leader/Experts	6312,50€	2325,00€	2325,00€	2325,00€	2325,00€	2325,00€	2325,00€	2325,00€	2325,00€	2325,00€	2325,00€
Internal Account Managers	7125,00€	4250,00€	4250,00€	4250,00€	4250,00€	1375,00€	1375,00€	1375,00€	1375,00€	8500,00€	8500,00€
External Account Managers	€	3591,00€	0773,00€	4364,00€	7955,00€	1546,00€	1546,00€	5137,00€	8728,00€	2319,00€	2319,00€
Insurance											
Experts	630,00€	2100,00€	2100,00€	2100,00€	2100,00€	2100,00€	2940,00€	2940,00€	2940,00€	2940,00€	2940,00€
Team Leader/Experts	270,00€	540,00€	540,00€	540,00€	540,00€	540,00€	540,00€	540,00€	540,00€	540,00€	540,00€
Internal Account Managers	300,00€	600,00€	600,00€	600,00€	600,00€	900,00€	900,00€	900,00€	900,00€	200,00€	200,00€
External Account Managers	€	51,20€	53,60€	604,80€	756,00€	907,20€	907,20€	1058,40€	209,60€	360,80€	360,80€
Food											
Experts	1030,43€	384,05€	384,05€	384,05€	384,05€	384,05€	1737,67€	1737,67€	1737,67€	1737,67€	1737,67€
Team Leader/Experts	676,81€	676,81€	676,81€	676,81€	676,81€	676,81€	676,81€	676,81€	676,81€	676,81€	676,81€
Internal Account Managers	353,62€	353,62€	353,62€	353,62€	353,62€	1030,43€	1030,43€	1030,43€	1030,43€	5707,24€	5707,24€
External Account Managers	€	353,62€	1030,43€	6707,24€	384,05€	1060,86€	1060,86€	1737,67€	314,48€	51091,29€	51091,29€
Training Expenses											
TOTAL Training	2150,00€	250,00€	775,00€	6300,00€	6325,00€	77875,00€	8925,00€	9450,00€	975,00€	11025,00€	11025,00€
TOTAL	62910,86€	58570,31€	98496,52€	19560,53€	40624,54€	60265,36€	715258,98€	736322,99€	57387,00€	19327,82€	19327,82€

Source: Authors' Own Creation

Appendix 88 – Depreciation Expenses

CHARGING STATIONS

LARGE COMPANIES

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Simple	0	1	2	3	4	5	6	7	8	9	10
Medium	5	20	22	23	25	26	27	28	28	29	29
Complex	8	30	32	35	37	39	41	42	42	43	44
TOTAL CHARGING STATIONS	332	1260	1352	1466	1558	1638	1718	1764	1764	1810	1844
TOTAL COGS	1145068	4345740	4663048	5056234	5373542	5649462	5925382	6084036	6084036	6242690	6359956

SMEs

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Simple	0	3	9	11	12	14	16	17	18	19	20
Medium	1	10	35	41	47	54	59	65	68	72	75
Complex	0	1	2	3	3	4	4	4	5	5	5
TOTAL CHARGING STATIONS	7	104	322	395	440	520	561	606	655	686	710
TOTAL COGS	24143	358696	1110578	1362355	1517560	1793480	1934889	2090094	2259095	2366014	2448790

DEPRECIATION

2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
€111,923,02,75	€111,468,411,75	€111,291,1818,25	€111,516,465,50	€111,594,6938,25	€111,563,1564,75	€111,715,3226,00	€111,759,211,25	€111,795,5118,50	€111,824,6559,00	€111,834,83577,75

Source: Authors' Own Creation

Appendix 89 – Capital Expenditure (CAPEX)

EQUIPMENT CAPEX

2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
€111,169,211,00	€111,704,436,00	€111,577,3626,00	€111,541,8589,00	€111,591,102,00	€111,744,2942,00	€111,786,0271,00	€111,817,4130,00	€111,834,3131,00	€111,850,8704,00	€111,858,746,00

Source: Authors' Own Creation

Appendix 90 – Results

DiscountRate	6,4%
NPV	€17775594213,37
PaybackPeriod(years)	8,408
IRR	15%

Source: Authors' Own Creation

DiscountRate	6,4%
NPV	€17775594213,37
PaybackPeriod(years)	8,408
IRR	20%

Appendix 91 – Results (with Liquid Assets Value)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Sales/Revenues	€108958,81	€163349,18	€13613746,11	€9487598,42	€5416477,22	€13998431,41	€6703000,20	€2130013,74	€696549,93	€2625482,55	€7063451,94
LargeCompanies											
ChargingStations,Consultancy,ChargingServices	€97021,60	€794834,75	€763833,73	€1703924,24	€4740730,69	€7551773,15	€100420010,29	€2573104,32	€4788969,68	€27602112,48	€9514596,20
ContractBreaches	€018,00	€2019,00	€2035,50	€33797,75	€20673,25	€20665,25	€7573,85	€57573,85	€66212,15	€1076579,65	
AdditionalEnergySales	€79598,00	€326702,00	€67512,00	€371244,50	€71283,00	€1061701,50	€384187,00	€580987,50	€0732302,00	€2117630,00	€3152636,00
SMEs											
ChargingStations,Consultancy,ChargingServices	€555,22	€15851,43	€43989,88	€597317,18	€365754,90	€214114,63	€74856,04	€1849803,82	€525735,18	€421582,69	€185155,25
ContractBreaches	€018,00	€2019,00	€2020,00	€24315,75	€17844,38	€48687,88	€70983,63	€73906,25	€2282,93	€62865,23	€79211,85
AdditionalEnergySales	€0748,00	€92068,00	€15955,00	€356999,00	€1958691,00	€601880,00	€232698,00	€895038,00	€1554848,00	€355879,00	€5754777,00
Cost of Goods Sold	€219257,00	€3411917,98	€0363554,86	€3819931,17	€7704001,48	€1391586,78	€5047809,99	€87321842,84	€1926530,50	€5597222,17	€8529596,26
LargeCompanies											
HardwareChargingStations	€3475,00	€1896950,00	€14216,00	€213182,00	€331524,00	€148790,00	€90178,00	€67844,00	€2507844,00	€2724710,00	€2724710,00
ComplementingChargingServices	€30720,00	€128960,00	€72000,00	€301600,00	€332320,00	€68640,00	€11680,00	€66520,00	€386080,00	€354880,00	€192960,00
Energy	€67128,45	€266207,75	€98756,69	€257592,14	€563958,44	€578097,26	€166198,14	€931881,83	€453262,15	€11802571,62	€2810667,46
SMEs											
HardwareChargingStations	€8286,00	€600126,00	€95932,00	€172870,00	€607844,00	€938548,00	€15286,00	€586960,00	€752512,00	€918064,00	€108316,00
ComplementingChargingServices	€840,00	€14800,00	€5460,00	€43920,00	€259840,00	€711920,00	€15920,00	€161920,00	€3082800,00	€536960,00	€969840,00
Energy	€0208,55	€28474,23	€94740,17	€321717,03	€907765,03	€533841,52	€148647,85	€793767,01	€11682,35	€21836,55	€505152,80
Transportation	€0500,00	€0000,00	€1750,00	€90750,00	€01550,00	€11750,00	€18800,00	€28550,00	€32750,00	€38600,00	€42650,00
Gross Revenue	€89701,81	€291576,20	€250991,25	€67667,25	€71275,74	€60644,62	€1655190,21	€397170,90	€538619,43	€7028260,38	€8533855,68
GrossMargin	13%	27%	24%	29%	30%	31%	32%	32%	32%	32%	32%
MarketingCosts	€8968,00	€150109,00	€16164,50	€7809,00	€5809,00	€5809,00	€809,00	€809,00	€809,00	€809,00	€809,00
OperatingCosts	€2910,86	€58570,31	€98896,52	€19560,53	€40524,54	€602565,36	€15258,98	€36322,99	€7387,00	€19327,82	€19327,82
Total Operating Expenses	€61878,86	€68879,31	€79561,02	€97969,53	€99033,54	€60974,36	€93667,98	€949731,99	€15796,00	€979736,82	€7736,82
EBITDA	€2177,05	€162896,89	€170830,23	€69697,72	€13442,20	€945870,27	€0861522,23	€260238,91	€422823,43	€6330523,56	€7656118,86
Depreciation	€92302,75	€146811,75	€111819,25	€151686,50	€1946938,25	€631564,75	€15326,00	€59211,25	€795518,50	€246559,00	€883677,75
EBT	€6479,80	€21485,14	€4188,02	€53232,22	€166203,95	€314305,52	€708296,23	€101027,66	€5267704,93	€883964,56	€172411,11
TaxesPaid	€	€	€	€	€	€	€	€	€	€	€
TaxesToPay	€2007,96	€8259,16	€4123,30	€2477,25	€62395,89	€20718,74	€34366,65	€27323,72	€41023,61	€73892,03	€206379,25
TaxesForward	€2007,96	€3748,80	€8061,10	€6816,15	€	€	€	€	€	€	€
Profit After Taxes (NOPAT)	€6479,80	€21485,14	€4188,02	€28754,97	€66791,92	€793586,78	€873929,58	€883003,94	€48571,32	€110072,54	€108641,86
Depreciation	€92302,75	€146811,75	€111819,25	€151686,50	€1946938,25	€631564,75	€15326,00	€59211,25	€795518,50	€246559,00	€883677,75
Operating Cash-Flow	€2177,05	€162896,89	€170830,23	€945220,47	€81430,17	€225151,53	€0027155,58	€187515,19	€2812589,82	€4356631,54	€5592319,61
CAPEX	€79211,00	€704836,00	€773626,00	€318589,00	€89102,00	€42942,00	€60271,00	€374230,00	€34331,00	€608704,00	€44667,87
EquipmentChargingStationforRent	€69211,00	€704836,00	€773626,00	€318589,00	€89102,00	€42942,00	€60271,00	€374230,00	€34331,00	€608704,00	€44667,87
LiquidAssetsValue	€50000,00										
DevelopmentConsultingToolS2Changes	€										
GPSTrackersandSoftware	€60000,00										
Net Income (FCF)	€51388,05	€211539,11	€103495,77	€473368,53	€6771,83	€882209,53	€166884,58	€300985,19	€469458,82	€747927,54	€803898,48
Discounted Cash-Flows	€51388,05	€39792,39	€274106,56	€223169,11	€9901,18	€20271,12	€93833,92	€38218,98	€720958,49	€288793,71	€700539,26
Accumulated Discount Cash Flows	€51388,05	€391180,45	€632287,00	€855056,11	€81557,29	€695086,17	€201652,25	€63833,27	€142874,78	€946318,93	€1646858,18

Source: Authors' Own Creation