Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Department of the Environment, Transport, Energy and Communications DETEC

Swiss Federal Office of Energy SFOE
Energy Research and Cleantech

SWEET Call X-2020: SWEET EDGE

Deliverable report

Deliverable n°	D1.10
Deliverable name	Report with the results of the rolling storage for electrifying corporate fleets.
Authors The authors bear the entire responsibility for the content of this report and for the conclusions drawn therefrom.	Cristian Pons-Seres de Brauwer, IWÖ-HSG, cristian.debrauwer@unisg.ch
Delivery date	04.2025

Table of contents

sweet swiss energy research for the energy transition

Summary

The end-user stands as a key stakeholder in the mass-uptake of technological innovations and acceleration of sustainability transitions. However, socio-technical transitions research has tended to focus rather exclusively on the residential or household user. Comparatively little attention has been devoted to investigate corporate users despite their substantive demand of societal services such as clean energy or electromobility. This paper explores the role of companies as 'innovation users' at the intersection between the electricity and (road) transport sectors. To this aim, I conduct a 'qualitative-exploratory' analysis of 31 semi-structured company interviews to examine the influence of different adoption factors in either fostering or undermining the willingness of corporate energy consumers to partake in 'solar V2G charging at work'. In doing so, the analysis reveals a range of adoption chain and co-innovation risks undermining the adoption potentials of corporate users for cross-sectoral business model innovations. The analytical outputs are used to outline a number of policy recommendations targeting the corporate end-user as a key stakeholder to accelerate sustainability transitions across sectors.

1 Introduction

Socio-technical transitions entail disruptive processes of radical system reconfiguration towards functionally superior formats of societal service provision (Geels et al., 2017; Markard et al., 2012). Throughout this process, the mass-scale diffusion of technological innovations such as renewable energies (RES) or electric vehicles (EVs) plays a crucial role, positioning the end-user as an important actor driving market uptake (Huttunen et al., 2022; Verhees and Verbong, 2015). At the same time, the production, commercialisation, and roll-out of such innovations places manufacturing companies and other market players along the adoption chain[1] as equally relevant actors in the 'delivery' of societal services such as clean energy or electromobility (Groot-Kormelinck et al., 2022; Schaltegger et al., 2023). Yet despite being recognised as important stakeholders in shaping how innovations diffuse, firms and other industry actors remain relatively under-studied in sustainability transitions research vis-à-vis other well-researched actor groups such as policymakers, niche innovators, intermediaries, or households (Köhler et al., 2019; Nordt et al., 2024).

On the one hand, transitions studies have tended to frame mainstream corporate actors as opponents – rather than proponents – of sustainability-oriented system transformations (Sovacool et al., 2020b; van Mossel et al., 2018). Such 'one-sided' characterisations risk forwarding a rather biased notion of companies as simply contesting disruptive niche innovations and resisting regime reconfigurations (Sovacool et al., 2020a; Turnheim, 2022). Yet a growing number of transition studies shows that incumbent industry firms can also take a more proactive stance to support and adopt niche innovations[2] (Altunay et al., 2021; Bulah et al., 2023; Scherrer and Rogge, 2025), as well as reorient their strategies and resources towards sustainable system transformations (Ertelt and Kask, 2024; Gregory and Geels, 2024; Karltorp et al., 2024; Pons-Seres de Brauwer, 2024).

However, these and other transition studies of organisations mostly focus on firms operating on the 'supply-side' of sectoral value chains while leaving unattended their 'demand-side' role as innovation users. Yet besides being producers and suppliers, organisations are also major consumers of goods and services (Meelen and Schwanen, 2023). For instance, corporate energy consumers (i.e. companies) in Europe today account for almost 70% of final energy use, while residential consumers (i.e. households) account for just about 27%[3] (Eurostat, 2024). Similarly, 40% of new car sales in Europe are destined to individual users (i.e. private cars), while 60% are bought by corporate users (i.e. company cars) – 90% of which are petrol and diesel vehicles accounting for 74% of new vehicle emissions (Dalder et al., 2024). These examples showcase how despite being a major consumer across various end-use sectors, and therefore a crucial player for accelerating the market uptake of technological innovations, the corporate actor remains an overlooked stakeholder in socio-technical transitions research targeting the user dimension.

Against this backdrop, this paper explores the role of companies as innovation users 'located' at the intersection between the electricity and (road) transport sectors. Given that both sectors are undergoing profound changes to decarbonise (electricity) and electrify (transport) their societal functions, focusing on this inter-sectoral locus allows to investigate how the corporate actor can – inadvertently or purposefully – accelerate sustainability transitions by adopting technological innovations that couple different sectors under an integrated adoption model (De Wit et al., 2002; Kaufmann et al., 2021). In doing so, this study sheds light on how user-mediated multi-system interactions occur across sectors under transformation (Andersen and Geels, 2023).

---

[1] E.g. wholesale suppliers, retail distributors/dealerships, component replacement and repair service providers, etc.

[2] Empirical examples include the 'Toyota Open Labs' (the Japanese car manufacturer's innovation platform to finance, mentor, and participate in scaling startup businesses in the fields of energy and mobility) or Enel's 'Open Innovation' platform and 'Hub&Lab' network (the Italian energy utility's scheme to crowdsource disruptive technologies, business ideas, and solution-driven projects).

[3] Note that Eurostat's (2024) statistic on corporate energy consumption excludes consumption from the energy sector itself and only includes end-use sectors such as agriculture, commercial services, or industry (e.g. iron/steelmaking, chemical manufacturing, machinery production, etc.).

Empirically, the study is embedded in the context of Switzerland's transition to a renewables-based electromobility system, where the joint diffusion of RES (spearheaded by solar photovoltaics) and EVs is giving way to the emergence of bi-directional or 'vehicle-to-grid' (V2G) charging applications (Van Liedekerke et al., 2024). V2G technology enables the grid-interactive management of EVs by coordinating charging schedules during low-cost periods of peak RES generation[4], storing excess electricity into EV batteries at times of RES oversupply, and feeding it back to the electricity grid or own building during off-peak/high-cost periods (Mehrjerdi and Rakhshani, 2019). 'Smart' charging patterns can then be optimised to reduce charging costs and flexibilise electricity loads[5], repurposing EVs as a mobile storage device supporting the grid-friendly integration of variable RES (Hannan et al., 2022). Furthermore, combining V2G charging with solar power at the workplace can help companies reduce their electricity consumption costs as the solar electricity stored in the parked EVs can be fed back into the building to maximise self-consumption (Ioakimidis et al., 2018; Needell et al., 2023).

Within this empirical setting, this paper reports a qualitative-explorative study of corporate actors' adoption potentials for solar-powered V2G charging for own use[6]. To this aim, I interview 31 companies (28 of which operating a solar PV system in their buildings' rooftops for self-consumption purposes) elaborate a typology of the various factors shaping their decisions to install V2G charging stations at their workplace, and assess the direction and strength of influence that different perceived factors have on their inclination to take (or not) such a decision. In doing so, this study responds to Costa et al.'s (2022) call for corporate-level analyses as two previously disconnected socio-technical systems (i.e. electricity, transportation) become increasingly intertwined through the adoption of business model innovations operating at their intersection. The research questions guiding this effort are:

- RQ1. What factors do corporate users consider when assessing whether to adopt V2G charging for workplace use? What is the influence of such factors in driving/hindering their willingness to do so?
- RQ2. Are the perceived drivers incentivising adoption stronger than the perceived barriers hindering it, or not?
- RQ3. How are such barriers undermining the path to market of a cross-sectoral business model innovation on 'solar V2G charging at work'?

Following this Introduction, in Section 2 I mobilise insights from the sustainability management and market acceptance literatures to outline the conceptual anchors framing the empirical investigation. I then summarise a number of 'blind spots' from prior studies on corporate e-mobility. Section 3 introduces the 'case country' and explains the data collection/analysis methods. Section 4 reports and discusses the results of the empirical analysis. Section 5 concludes by highlighting the study's policy/managerial relevance and academic contributions for an enriched appreciation of the user dimension to accelerate sustainability transitions across sectors.

2 Deliverable content

2.1 Corporate users' innovation adoption potentials: conceptual grounding and empirical 'blind spots'

2.1.1 <u>Sustainable business model innovations: co-innovation and adoption chain risks</u>

Multi-system sustainability transitions[7] provide a suitable context to investigate whether business model innovations can leverage corporate actors' user practices in order to integrate previously disconnected sectors (Costa et al., 2022; Meelen and Schwanen, 2023). In that respect, the notion of 'solar V2G

[4] E.g. solar PV production during mid-day.

[5] E.g. by smoothening peaks in electricity demand, a strategy known as 'peak-shaving' (Ioakimidis et al., 2018).

[6] I.e. by their employees and visitors (e.g. business partners, clients, etc.).

[7] I.e., transitions simultaneously unfolding across different – yet interconnected – socio-technical systems (Bakhuis et al., 2024).

charging at work' outlined above can be conceived of as a cross-sectoral business model innovation (CS-BMI) for sustainability, conceptualised here as novel ways in which organisations and their innovation networks co-create and -deliver value propositions that generate sustained economic returns based on their positive socio-ecological impacts (Guerrero and Hansen, 2021; Pedersen et al., 2020; Stål et al., 2022). Examples include human-powered fitness centres[8], 'Solar-as-a-Service' (SaaS)[9], or e-carsharing platforms[10], to name a few.

These examples reveal how successful value co-creation hinges upon the willingness of end-users and other stakeholders from different systems to change their traditional roles and behaviours in order to realise a CS-BMI's value proposition (Adner, 2016, 2013). For instance, the roll-out of V2G charging might be undermined if car manufacturers are reluctant to produce 'smart' (i.e. grid-interactive) EVs, if distribution system operators are resistant to grant EVs access to the electricity grid, or if EV drivers are unwilling to use their cars' batteries for non-mobility purposes (e.g. electricity storage), among other factors. CS-BMIs can therefore be theoretically viable yet still fail in practice due to rigid business practices or inflexible user behaviours (Budde Christensen et al., 2012).

Relying upon different stakeholders to co-create a CS-BMI's value proposition generates new actor dependencies and uncertainties or what Adner (2013) refers to as 'co-innovation' and 'adoption chain risks'. Co-innovation risks reflect the uncertainty related to the extent in which the successful diffusion of a 'focal' innovation (e.g. V2G charging) depends on the successful commercialization of other 'complementary' innovations (e.g. smart EVs). On the other hand, adoption chain risks emerge from the likelihood that value network partners endorse and adopt the focal innovation in order to realise the CS-BMI's full value proposition. Adoption chain risks are therefore contingent upon the extent to which co-innovation risks are mitigated[11], and vice-versa[12]. As such, both adoption chain and co-innovation risks are co-dependent. Managing these risk co-dependencies is crucial for bringing any CS-BMI to market successfully.

On this note, both EV manufacturers and grid operators are progressively shifting their own operations to support the roll-out of smart charging infrastructure (Sovacool et al., 2020a): more and more EV models are being equipped with bi-directional charging capabilities (The Mobility House, 2023) while a growing number of grid access points is being adapted for the management of smart EVs operating as flexible e-storage devices (Hecht et al., 2023). Co-innovation risks from various actors along the adoption chain are thus being progressively contained. Yet without the willingness of the (corporate) end-user to actively engage in solar V2G charging at work, the adoption chain becomes compromised and, as a consequence, the path to market risks not being successfully realised. Unpacking the range of potential factors shaping corporate end-users' acceptance for solar V2G charging at work thus stands as a pre-requisite for managing the CS-BMI's adoption chain and co-innovation risks. Incentivising corporate end-user participation would entail not only the 'buy-in' of firm managers to install a rooftop solar PV system (co-innovation risk #1) and V2G charging infrastructure for the use of the company's workforce (adoption chain risk #1), but a sufficient volume of employees adopting smart EVs (co-innovation risk #2) and allowing company access to their cars' batteries to support their employer's solar energy self-consumption (adoption chain risk #2).

From a technical standpoint, there are no major obstacles undermining the path to market of solar V2G charging. Yet while necessary, technical feasibility in itself remains insufficient to trigger market uptake (O'Connor and Rice, 2013). Rather, it is usually a broader set of 'non-technical' characteristics (e.g.

[8] Whereby the energy generated by the exercise of gym members powers the building's electricity needs and, in return, they obtain discounted membership fees (e.g. EcoGym).

[9] Substituting solar PV ownership by rooftop renting in exchange for cheaper solar electricity supply; enabling households to avoid the high capital costs of solar panels (e.g. SunRun).

[10] EV owners leasing their cars and/or sharing their drive with other users through ridesharing platforms, substituting EV ownership with e-mobility services while reducing CO_2 emissions (e.g. Eniwa).

[11] E.g. V2G charging not adopted until a sufficient volume of EVs is reached.

[12] EV uptake stalling due to limited charging infrastructure availability/capacity.

investor risk perceptions, user involvement, innovation network configuration) which tend to play a more prominent role in inducing (or hindering) an innovation's path to market – especially when this requires the proactive involvement from the final customer (Kristensson et al., 2020; Nieto Cubero et al., 2021). As noted above, understanding the extent by which a CS-BMI's path to market can be undermined by co-innovation and adoption chain risks entails an assessment of the willingness of (corporate) end-users to change their traditional roles and behaviours in order to co-create its core value proposition. Yet to better understand the risk implications from corporate end-user participation, a more refined conceptualisation of their willingness to do so is required.

2.1.2 Market acceptance of clean energy innovations

Within the broader literature on the social acceptance of clean energy innovations (Ellis et al., 2023; Wüstenhagen et al., 2007), the notion of 'market acceptance' refers to the various drivers influencing the adoption patterns of RES technologies by end-users, as well as factors shaping energy-related investments from different actors such as utility companies, financial institutions, or project developers (Wüstenhagen and Menichetti, 2012). Market acceptance can therefore be disaggregated into a demand-side (consumer acceptance) and a supply-side (investor acceptance) (Hampl and Wustenhagen, 2012; Motz, 2021). Despite this conceptual distinction, both dimensions are in fact closely interrelated; for instance when consumer attitudes over corporate sustainability commitments drive banks' ESG investment criteria (Kinghorn et al., 2021). At times, both dimensions can even be treated indistinctly from one another; for example when consumers take on the role of retail investors to collectively finance community energy initiatives (Pons-Seres de Brauwer and Cohen, 2022).

This latter facet – which is in fact an overlap of consumer and investor acceptance – is particularly instructive as a conceptual reference for the empirical examination of a CS-BMI's co-innovation and adoption chain risks, as this entails the analysis of market acceptance characteristics cutting across both consumer/investor dimensions. The notion of 'market acceptance' thus stands as a useful conceptual anchor to operationalise the empirical analysis of co-innovation and adoption chain risks related to the end-user's endorsement of a CS-BMI's value proposition. This is reflected in below, which showcases the foundational dimensions of market acceptance, the positioning of a CS-BMI on 'solar V2G charging at work' at their intersection, and the translation of 'co-innovation/adoption chain risks' from conceptual constructs into empirical variables.

2.1.3 Corporate users' adoption potentials: the role of (non-)price factors

Within the market acceptance literature, the research stream on corporate and project finance has been instrumental in quantifying the economic factors shaping companies' investment propensities towards clean energy innovations (Hampl and Wustenhagen, 2012; Hürlimann and Bengoa, 2017; Steffen, 2018). Yet at the same time, various studies within the sustainability management and marketing literatures have shown the salience of a wider range of 'non-price' factors in shaping corporate actors' innovation adoption potentials; that is, their willingness or ability to adopt focal/complementary innovations in order to realise the CS-BMI's value proposition and, in doing so, accelerate its path to market (Globisch et al., 2018a; Sierzchula, 2014; Wikström et al., 2016).

In effect, in addition to financial assessments as a core tool to estimate corporate/project investment risks, there are a host of additional considerations that are not necessarily reflected in the outputs of financial analyses themselves, which play an equally salient role in shaping a company's willingness to adopt or invest in clean energy innovations (Kaplan et al., 2016; Kaufmann et al., 2021; Nesbitt and Davies, 2013; Nienhueser and Qiu, 2016; Vuichard, 2021). Financial analyses thus provide a necessary yet insufficient (i.e. partial) assessment related to the corporate user's market acceptance. A comprehensive analysis of a CS-BMI's co-innovation and adoption chain risks therefore remains incomplete without due consideration to how such 'non-price' factors influence its adoption potential. In the case of a CS-BMI on 'solar V2G charging at work', this may include the availability of parking space (private/shared use), the tenancy status of a company's building (owning/renting), or the commuting patterns of employees (predictable/stochastic), to name a few.

While these and other ‘non-price’ factors can play a salient role in nudging corporate adoption potentials for V2G charging infrastructure, they have received little attention within the sustainability and innovation management literatures on e-mobility. The reason being that most studies on corporate decision-making on e-mobility focus solely on EV uptake in regards with the electrification of commercial fleets (i.e. company cars), without due consideration to the underlying EV charging requirements (Globisch et al., 2018a, 2018b; Kaplan et al., 2016; Klauenberg et al., 2016; Margaritis et al., 2016; Sierzchula, 2014; Vuichard, 2021). Furthermore, corporate fleet electrification literature that acknowledges EV charging implications from EV uptake has consolidated around analyses of single technology adoption in isolation (Gonçalves et al., 2022; Mohammed et al., 2020; Skippon and Chappell, 2019; Wikström et al., 2014; Willard et al., 2020). Comparatively little attention has been directed on the adoption propensities stemming from the synergies obtained via technology combinations under an integrated adoption model (i.e. EV charging + solar PV) (Nesbitt and Davies, 2013). In sum, the literature has yet to accommodate studies forwarding a systematic analysis of the various (non-)price factors shaping corporate users’ adoption potentials over, in this case, workplace V2G charging *in tandem with* solar PV generation. This stands as a notable ‘blind spot’ limiting our understanding of how user-mediated multi-system interactions occur in sustainability transitions (Andersen and Geels, 2023).

2.2 Methods

2.2.1 Case country’ selection: Switzerland’s transition to a renewables-based electromobility system

This study sharpens its attention to the ongoing efforts of Switzerland as representative of Europe’s overall ambition to decarbonise its largest energy-consuming and carbon-emitting end-use sector – transportation – based on the transition towards electromobility. Switzerland’s (road) transport decarbonisation efforts therefore lend itself as a suitable case with generalisable potential informing other European and OECD countries pursuing transport decarbonisation measures and with similar EV market penetration rates[13] (Alšauskas et al., 2024). The choice to examine the Swiss experience thus follows an “information-oriented” selection logic of a “typical” case study, where the aim is to maximise the utility of information from the in-depth analysis of a single case as representative of the phenomena under scrutiny (Flyvbjerg, 2006; Gerring, 2009; Seawright and Gerring, 2008).

In effect, transportation stands today as Switzerland’s largest carbon-emitting end-use sector, contributing about 40% of the country’s CO_2 emissions. These are dominated by motorised passenger vehicles, accounting for 75% of greenhouse gas (GHG) emissions . Almost 95% of transport-driven energy demand in Switzerland is supplied by fossil fuels, while less than 3% is covered by renewables (SFOE, 2024). The electrification of passenger vehicles has therefore emerged as a priority area to decarbonise the transport sector. To this aim, the Swiss Government targets a +90% share of plug-in electric vehicles (EVs) for new car sales by 2035. This entails a 12-fold increase projected throughout the next 11 years to reach a total volume of 2.8 million EVs (from 237’138 in 2023). Yet the market uptake by the end of 2023 stood at a 21% share of new car sales, resulting in an ‘adoption gap’ of 69% (FSO, 2024a).

To charge all these future EVs in a user-friendly manner, the Government is projects the build-out of up to 2 million homeplace charging points by 2035, along with an up to 7-fold increase of public EV charging stations throughout the next 12 years[14] (Rosser et al., 2023; SFOE, 2023). The projected increase in electricity demand from the Government’s EV charging strategy will be substantial[15] and emerges as a prominent challenge to ensure the grid stability of an electricity system with growing shares of variable RES (Kemmler et al., 2021; Rosser et al., 2023). This is particularly so given the increase of 30 TWh from solar PV that the country targets by 2035 (Federal Assembly of the Swiss Confederation, 2023). Grid integration of solar energy thus emerges as an additional challenge risking to slow down the

[13] With the exception of Norway, whose EV market share currently stands at 88% of new vehicle registrations (EAFO, 2024).

[14] From 11,300 public chargers in 2023, to 84,000 in 2035.

[15] An increase of over 7.4 TWh expected by 2035.

projected pace of renewable's expansion consistent with the country's net-zero goal by mid-century[16] (Jorio, 2022).

Adding to the Government's homeplace and public charging targets, workplace charging could become a third pillar solution to help address Switzerland's 'trilemma' over its national EV charging strategy: user-centredness, grid-friendliness, and renewables' integration. Importantly, the country hosts optimal conditions for companies and their employees to co-create such a solution, given that:

a) About 50% of Switzerland's active workforce commutes by car, with an average distance below 14 km (FSO, 2024b);
b) Cars are parked an average of 23 hours a day: 16.8 hours at home (73%) and 5.3 hours at work (23%) (Nagler, 2021). In fact, cars are typically used only about 6% of the time for mobility purposes (Kempton and Tomić, 2005);
c) EV charging requirements for mobility purposes are thus minimal, while the remaining EV battery potential for secondary (i.e. non-mobility) uses is substantial. This is particularly so during working hours, as over 73% of Switzerland's workforce has car parking space available at their workplace; yet only about BUT (ARE, 2021; Rosser et al., 2023).

2.2.2 Research design & methodological protocol: data collection and analysis

Given the early market penetration of V2G charging technology today, corporate end-user preferences might not yet be fully developed nor comprehensively accounted for. In those instances, a 'qualitative-exploratory' research design is better-suited to yield more substantive results, as it enables sufficient flexibility to change the direction of the enquiry in response to the revelation of new data or novel insights (Saunders et al., 2019). The exploratory nature of the proposed approach should not however sacrifice the methodological rigour form a systematic protocol for qualitative analysis (Sukumar and Metoyer, 2019). With this in mind, the methodological procedure follows a structured and systematic approach to data collection/analysis through five distinct methodological steps (Bingham and Witkowsky, 2021).

First, a comprehensive review of studies on corporate user preferences for EV adoption was conducted in order to identify an initial set of adoption decision factors on vehicle electrification and EV charging implications. To determine the relevant literature, three journal article searches were conducted through the abstract and citation database Scopus[17]. Abstracts were scanned for duplicates and topical/disciplinary relevance[18]. This was complemented with a 'reference tracing' strategy in order to identify additional articles which might have been missed in the database search (Rosenbloom and Rinscheid, 2020). Furthermore, a snowball sampling strategy was pursued in order to add various grey literature from information obtained in the academic articles and based on own industry knowledge (Parker et al., 2019). With this, a final total of 49 articles/reports were shortlisted for review.

In a second step, the identified adoption decision factors were discussed and assessed through 3 exploratory interviews with V2G industry experts, following an expert elicitation approach (Verdolini et al., 2018). The purpose of the exploratory interviews was to obtain authoritative insights that, when combined, would confirm/discredit the validity of the identified factors as well as nuance their interpretation. Furthermore, the expert elicitations served to identify new factors not encountered in the literature review, as well as to start assigning their direction of influence either as a *driver* (positive influence) or as a *barrier* (negative influence). As such, they allowed to procure more granular evaluations and interpretative insights of emerging adoption factors for which empirical material was not readily available, inconsistent, or incomplete (Usher and Strachan, 2013).

[16] 35 TWh by 2035, 45 TWh by 2050 (excluding hydro and nuclear power) (Kemmler et al., 2021).

[17] Table A1 in the Appendix showcases the string of terms used in the Scopus database searches.

[18] The vast majority of articles were distinctly outside the subject matter and/or disciplinary pertinence of the study in question. As such, articles under the topical areas of 'materials and chemical engineering', 'earth and computer sciences', 'biochemistry and genetics', as well as 'medicine and pharmacology', were excluded from further review.

In a third step, 28 semi-structured interviews were conducted with different 'case' companies operating their own rooftop solar PV system. Interviews were conducted until no more novel insights were obtained and a point of 'data saturation' was reached[19] (Guest et al., 2006; Saunders et al., 2018). Company interviews were conducted online with managerial decision-makers between May 2023 – February 2024, with the three-fold objective to i) scope their knowledge and attitudes over solar PV, V2G charging, demand flexibility, etc.; ii) elucidate their motivations, preferences, and perceived challenges to adopt solar V2G charging at work for employee and visitor use[20]; and iii) rank their relative importance in influencing the decision-making process. In order to ensure compliance with ethical collection and handling of personal or sensitive data, all expert and company interviews were anonymised and conducted following the Chatham House rule[21] (Chatham House, 2024; Segalla and Rouziès, 2023).

Fourth, following best practice on case-based research design, interviews were audio-recorded (prior consent), transcribed, and categorised according to emerging patterns of recurrent drivers/barriers (Yin, 2023). To this aim, interview transcripts were qualitatively analysed through axial coding[22] (Simmons, 2017). This allowed to inductively identify a more comprehensive set of 'price' and 'non-price' factors shaping corporate user adoption propensities, and aggregate them under a nested typology of drivers/barriers based on 'umbrella' categories. The typology was then used as an analytical framework guiding a second coding round, following an iterative process of data analysis ⇄ code review[23] (Srivastava and Hopwood, 2009).

In a fifth and final step, the analytical outputs from this second iteration served to aggregate the respondents' responses in order to capture the strength of influence of each factor previously identified. This analytical step yielded a more nuanced ranked categorisation of different barriers/drivers based on their relative salience in shaping company managers' adoption deliberations over solar-powered V2G charging infrastructure for workplace use. Ultimately, the step-wise methodological procedure described here delivered a systematic protocol for the qualitative-exploratory analysis of managerial decision-making related to the adoption of clean energy innovations.

2.3 Results: factors influencing corporate users' adoption potentials for 'solar V2G charging'.

This section reports the main drivers fostering the willingness of corporate energy consumers to partake in 'solar V2G charging at work', along with their most prominent hurdles. The identified factors are evaluated in terms of the extent by which they shape (i.e. incentivise, undermine) the adoption potentials of corporate end-users; with Figure 1 showcasing a quantitative assessment of ranked perceptions from company managers. These are further discussed in terms of the adoption chain and co-innovation risks they pose for realising the CS-BMI's path to market; with Figure 2 showcasing the connection between risk type and perceived (price/non-price) barrier.

[19] Table A2 in the Appendix showcases the anonymised list of interviewed companies.

[20] E.g. lowering carbon footprint, positive corporate image, 'first mover' advantage, etc.

[21] The Chatham House rule states that "participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s)… may be revealed" (Chatham House, 2024). This allows for a 'trust-based' discussion format supporting a more insightful collection of data. While typically used by local government and commercial organizations, the Chatham House rule has also been used in scientific research (e.g. Đukan and Kitzing, 2021; Egli, 2020).

[22] With axial coding, a subset of codes from an initial coding scheme are grouped and 'elevated' into a higher-order code or 'category', resulting in a layered system of 1st, 2nd, 3rd order codes based on broader levels of aggregation and/or incommensurability (Corbin and Strauss, 2008).

[23] Figure A1 in the Appendix showcases the final version of the typology.

Figure 1. Summary table of perceived drivers/barriers shaping corporate adoption potentials over a CS-BMI on 'solar V2G charging at work'. Ranked perceptions are disclosed for the entire sample of interviewed companies, and disaggregated based on company sizes. These are determined following Eurostat's (2016) company size categorisation based on number of employed persons: micro enterprise (<10 persons employed), small enterprise (10-49 persons), medium-sized enterprise (50-249 persons), large enterprise (≥250 persons).
Source: Own elaboration.

2.3.1 Financial factors and market conditions

Financial factors are those concerning the CS-BMI's ability to enhance the cost-effectiveness of a firm's daily operations and/or to generate additional revenue streams complementing its core business(es). For most interview participants, deliberations cutting across these two factor areas (i.e. cost-effectiveness, additional revenues) were primarily discussed in terms of the potential of V2G charging to enhance the performance – and hence economic output – of the company's solar PV system.

To this end, an initial set of price drivers refer to the possibility of further reducing electricity consumption costs and grid use fees by increasing solar energy self-consumption. All the interviewed companies perceived this as the most visible and immediate financial benefit. Yet upon further deliberation, some company managers revealed revenue loss fears from reducing the amount of excess renewable electricity (RES-E) fed back into the grid. Yet company managers raising this counterargument concluded with a net-positive financial benefit from increasing solar self-consumption via V2G, given that the established feed-in-tariffs (FiTs) for back-feeding excess RES-E into the grid are lower than the current electricity prices paid for their energy supply. However, this was not translated into an overall increased willingness to engage in V2G charging for increasing solar self-consumption given the technology's prohibitively high acquisition costs.

An additional price driver relates to the prospect of increasing demand flexibility via 'smart' EV charging strategies to further reduce electricity consumption costs and provide grid ancillary services (e.g. frequency regulation, spinning reserves). However, various company managers admitted little awareness of demand-side flexibility or of the pre-requisites needed for it (e.g. smart metering, dynamic pricing, communication protocols); and only upon highlighting these factors did they deliberate over the potential financial benefits from flexibilizing the company's electricity load via solar V2G charging.

Adoption chain risks emerging from company managers' perceived barriers relate to the lack of financial incentives provided by limiting market conditions and an unfavourable fiscal regime, along with inadequate public support schemes and regulatory provisions. First, the acquisition costs for a 10kW DC charger with bi-directional charging capabilities stand today at almost CHF 15,000 (in Switzerland) while the costs of a conventional EV charger range between CHF 1,500-3,600. Interview participants thus perceived high acquisition costs as a substantive price barrier hindering their adoption potentials for solar V2G charging, despite the prospective financial benefits from increased RES-E self-consumption. This was particularly the case for all micro/small companies interviewed – given their smaller budgets, tighter cashflows, and lower liquidities. As expressed by one micro company manager, *"there's no way we're buying a [V2G] charger that's like 6 times more expensive than a normal one. Even if we gain on electricity savings, we would need [to buy] like a couple of those chargers, it doesn't pay off"* (C19).

Larger companies showcased more nuanced perceptions, expressing less concern over the broad price differentials between V2G and other EV charging options. As noted by one multinational company manager: *"it's just another line in the annual budget. We have multiple expenses of this order"* (C10). For some of these larger companies – many of which operate internationally – maximising RES-E self-consumption from their solar PV systems appears to offer a sufficiently high set of incentives (financial or otherwise) to overcome the adoption chain risk factor of high upfront costs.

A second set of adoption chain risks emerges from a combined lack of public support schemes and unfavourable fiscal regime to make solar V2G charging a more financially attractive proposition for corporate energy consumers. For instance, despite interview participants' favourable perceptions of government subsidies for lowering acquisition costs from V2G chargers, these are only being offered by two cantonal authorities (out of 26) in the entire country and for residential users only[24]. Furthermore, such subsidies only cover 13% and 20% (respectively) of the total acquisition costs. Widespread government support for corporate V2G uptake is therefore absent, as well as too low to substantially lower acquisition costs to the extent that companies would be willing to adopt V2G charging. On this point, one company manager noted how *"investment grants to lower CAPEX are always welcomed, but yeah they need to offer a real cut in price"* (C11).

Another company manager instead argued that *"I am not really a believer of [government] subsidies. I think probably some tax cuts might be better [to incentivise adoption]"* (C20). On this note, while various cantons offer fiscal and other complementary incentives for company EV purchases (e.g. vehicle tax exemptions, car insurance discounts), there are no such options available for V2G charging infrastructure. Furthermore, according to the exploratory interviews with V2G industry experts, there are currently no alternative adoption models available to lower the price barrier of high acquisition costs, such as the possibility to pay through instalments or leasing models, or lowering electricity prices for V2G charging. On this latter note, the path to market of solar V2G charging is further undermined by an outdated taxation regime for bi-directional energy flows, whereby tariff duties are applied both when the end-user draws energy from the grid to charge its EV, and again when energy is fed back into the grid from the EV. Every unit of energy therefore gets effectively 'taxed' multiple times, resulting in yet an

[24] Namely the cantons of Zurich and Bern, which offer clearly defined purchase subsidies of CHF 2,000 and CHF 3,000 (respectively) for the acquisition of bi-directional EV chargers (Kanton Bern, 2024; Kanton Zürich, 2024). These are only eligible for private parking spaces in single- and multi-family buildings. Corporate users or commercial fleets are not eligible. Other Swiss cantons have a less refined subsidy program in place, often including non-transparent and contradictory qualification criteria for their respective subsidy schemes (Orgland, 2024).

additional adoption chain risk lowering corporate energy consumers' adoption potentials for solar V2G charging[25].

Additional co-innovation risks emerge from the competing benefits obtained from back-feeding excess RES-E into the grid. As noted above, even though the established FiTs are lower than current electricity prices, some company managers appeared to be more inclined (particularly the micro/small ones) to maintain these revenues rather than maximising solar self-consumption via V2G charging. For these companies, the 'convenience' and revenue certainty provided by FiTs seems to offer a greater incentive than the electricity cost-savings obtained from solar V2G charging. In that respect, while FiTs have successfully promoted 'behind-the-meter' solar PV uptake by guaranteeing a minimum remuneration for excess RES-E, they have at the same time de-incentivised some end-use electricity consumers to optimise their solar self-consumption profiles through battery storage solutions. The competing benefits of FiTs thus emerge as an important co-innovation risk undermining the value proposition from solar V2G charging.

Other price barriers relate to the lack of financial benefits from demand-side flexibility for end-users. Such a hurdle is (partly) rooted in Switzerland's limited implementation of dynamic electricity pricing (Burger, 2024). This limits the value potential of V2G charging to leverage changes in hourly electricity prices for the benefit of, in this case, corporate energy consumers. For instance, all company interviews evidenced that their companies' energy supply contracts are based on flat-rate electricity pricing (i.e. day/night tariffs). Furthermore, V2G expert interviews revealed the limited options end-users have to opt for energy supply contracts based on 'time-of-use' tariffs. As noted in one V2G expert interview: *"without retail [electricity] prices that reflect changes in [energy] supply and demand, then the entire purpose of V2G is gone. It kills the deal. What's the benefit for the consumer then?"* (C2).

Lack of dynamic pricing thus emerges as a notable adoption chain risk limiting corporate energy users' adoption potentials for solar V2G charging. These are further undermined by the impossibility to opt for a flexible grid tariff scheme[26] that reduces grid connection/usage fees in response to lower/adjusted electricity demand. Furthermore, limited use of such tariffs as the standard pricing procedure is illustrative of Switzerland's lack of dedicated local grid congestion markets incentivising end-users to flexibilize their electricity demand in line with distribution grid capacity constraints.

Additional adoption chain and co-innovation risks emerge, first, from the lack of a competitive and actor-diverse market, as only one single company commercialises V2G charging infrastructure in Switzerland today. This results in a *de facto* monopoly without competition-induced cost-reductions nor consumer choice. Negative perceptions from company managers over the lack of consumer choice were coupled with a rather poor awareness – generalised across all interview participants – over the range of smart EV models with bi-directional charging capabilities. While the number of EV models equipped with such features is slowly growing, these still represent a minor share of the overall EV offer today[27]. Most company managers thus found the lack of consumer choice on both the V2G and EV fronts a rather limiting realisation.

2.3.2 Organisational traits and competitive levers

Adding to the economic considerations above, company interviews revealed a range of organisational and competitive considerations shaping companies' adoption potentials for solar V2G charging.

[25] The recently approved 'Federal Act on a Secure Electricity Supply from Renewable Energy Sources' includes regulatory provisions to redress the issue of 'double taxation'. Yet at the time of this study the Act had not yet been formally voted by popular referendum. Hence, the issue of 'double taxation' was still a regulatory hurdle. The Act will come into force on 1st January 2025.

[26] E.g. Time- or location-dependent tariffs adjusting a consumer's grid usage fees based on changes in electricity demand or grid capacities in different locations.

[27] From the top 15 passenger EV models sold in Switzerland today, only one model is equipped with smart or bi-directional charging features (Auto Schweiz, 2024; The Mobility House, 2023)**. This illustrates how the market for grid-interactive EVs is still in its infancy (Funke et al., 2024).**

A first set of (non-price) drivers refers to the possibility of further lowering the environmental footprint of company buildings. While this was less of a concern for micro/small companies, larger companies did find such a possibility particularly relevant, given their required compliance with regulatory mandates (in Switzerland and abroad) for non-residential building performance standards on energy efficiency, heating, etc. On this note, some large company managers discussed the possibility to leverage the extra GHG emissions avoided by the increase in RES-E self-consumption (via V2G charging) to lower their Scope 1 and 2 emissions. As expressed by one multinational company manager: *"we are always looking for ways to improve the [environmental] performance of our offices. So if this [solar V2G charging] can get us closer to our sustainability targets then great"* (C9).

A second set of (non-price) drivers captures the pressure to reflect a pro-environmental public image as a 'sustainability champion'. To this effect, one company manager explained how "*the reputational risk nowadays for any company that is not supporting climate change and the environment is just too high, so we need to reflect this in some way"* (C12). Such an insight highlights how increased public scrutiny and consumer choices over the environmental impacts of companies is gaining salience as a motivational factor driving corporate sustainability behaviours (Chauhan et al., 2023; Zhou and Ding, 2023; Zhou et al., 2021). Yet at the same time it also reveals a lack of a genuine intent to, in this case, adopt solar V2G charging for purposes beyond greenwashing practices (Pimonenko et al., 2020; Sierzchula, 2014).

Various other companies however did showcase a genuine interest to adopt solar V2G charging, particularly as a means to attract/retain a highly motivated and skilled workforce. This was emphasized by companies whose workforce had expressed a demand for workplace EV charging. As noted by one medium-sized company manager, *"like any other company, we want to retain our talent, so if our employees have a strong wish to charge their [electric] cars here [at work], then we listen. If this means a happier employee, then we all win"* (C13). Adding to this argument, another large company manager noted how *"if we use our own solar [PV] system to provide free [EV] charging to our employees, this is a service that is a fringe benefit and so we can claim it as a tax-free contribution"* (C23). Company efforts to secure greater employee satisfaction, retention, and loyalty are therefore incentivised with some favourable corporate tax features, generating relevant synergies between different price/non-price drivers (Kacperski and Kutzner, 2020; Maguire, 2022).

This latter argument in turn points towards the 'competitive edge' of companies as yet an additional (non-price) factor driving their adoption potentials for solar V2G charging. Some company managers for instance highlighted first-mover advantages from being a 'sustainability frontrunner' or an 'innovation pioneer' within their respective sectors. Such an argument was alternatively framed in terms of the 'competitive pressures' that some companies experience from competitors. As reflected by one company manager: *"we always keep an eye out to see what others are doing. It helps us to stay awake to whatever trends are coming"* (C27).

On the other hand, a considerable share of interviewed companies reflected corporate behaviours of 'competitive inertia' and 'organisational lagging' characterised by a rather trivial attitude towards adopting sustainability innovations including V2G charging. One large company manager for instance noted how *"we have tried for so long to push for something like this [in reference to EV charging] but they [in reference to upper executives] have more urgent problems on their table; they're just not interested"* (C16). Manager resistance to invest in corporate sustainability strategies thus emerged as an additional non-price barrier hindering some companies' adoption potentials for solar V2G charging.

Finally, company interviews captured a considerable divide regarding the internal resources of companies to uptake a CS-BMI around solar V2G charging. For instance, while all large companies had dedicated teams/budgets to operationalise well-calibrated corporate sustainability strategies and emissions-reduction targets, smaller-sized enterprises did not have the same resource endowments such as a procurement office or a building manager. Hence, larger companies are better-equipped (yet not necessarily more willing) to realise their respective adoption potentials for solar V2G charging; corroborating prior findings (Khaled et al., 2021).

2.3.3 Operational idiosyncrasies

Lastly, company interviews uncovered a range of distinct operational characteristics shaping the integration of solar V2G charging into firms' daily operations and organisational routines. For instance, companies located in urban centres, whose majority workforce commute by public transport, or with a small number of employees using an EV, found the prospects of adopting solar V2G charging rather impractical. On this latter note, the fact that EVs have not yet reached upfront acquisition cost-parity with ICE vehicles stands as a co-innovation risk factor hindering their wider uptake from a broader number of commuting employees (Alšauskas et al., 2024).

Other company managers noted a lack of dedicated parking space to instal V2G charging infrastructure, either because they share it with other companies under one same building, because it might be too far away from the company's solar PV system, or simply because they have no private parking space available. This latter factor emerges as a co-innovation risk as it might contribute to lower employees EV adoption propensities. At the same time, companies who were not the owners of the buildings they occupied, but tenants under a rental contract, highlighted their limited autonomy over certain adoption decisions and thus equally improbable to expect the installation of V2G infrastructure by their landlords.

On this note, one company manager highlighted the need for so-called 'right to charge' legislative provisions ensuring that multi-unit building owners (residential and commercial alike) provide tenants with permission to install and access EV charging infrastructure in shared or communal spaces in advance. Such provisions would be particularly relevant for those companies located in urban or densely populated areas, as well as those renting (rather than owning). In that respect, while various European countries (e.g. UK, Germany, France) and US states (e.g. California, Colorado, Florida) have engrained "right to charge" provisions in their respective Building Codes and Performance Standards regulations[28], Switzerland is lagging behind with no formal legal mandate requiring building owners to facilitate EV charger installations, nor with a streamlined process for tenants to request and install EV charging infrastructure on rented properties. A lack of legislative efforts on that front thus emerges as yet another adoption chain risk factor undermining the path to market of solar V2G charging at work.

Finally, some interview participants reflected how their company's 'flexible' or 'home' workplace policies effectively translated into relatively unpredictable vehicle use patterns and therefore with a limited capacity to anticipate EV availability at the workplace, ultimately undermining the planning of V2G charging schedules. While these singularities might first emerge as somewhat trivial considerations, such operational idiosyncrasies do materialise as salient perceived barriers hindering companies' adoption potentials for solar V2G charging.

[28] E.g. The European Union's *Energy Performance of Buildings Directive 2024*, the UK's *Automated and Electric Vehicles Act 2018* and *Building Regulations 2021*, California's *Electric Vehicle Charging Stations Open Access Act 2019*.

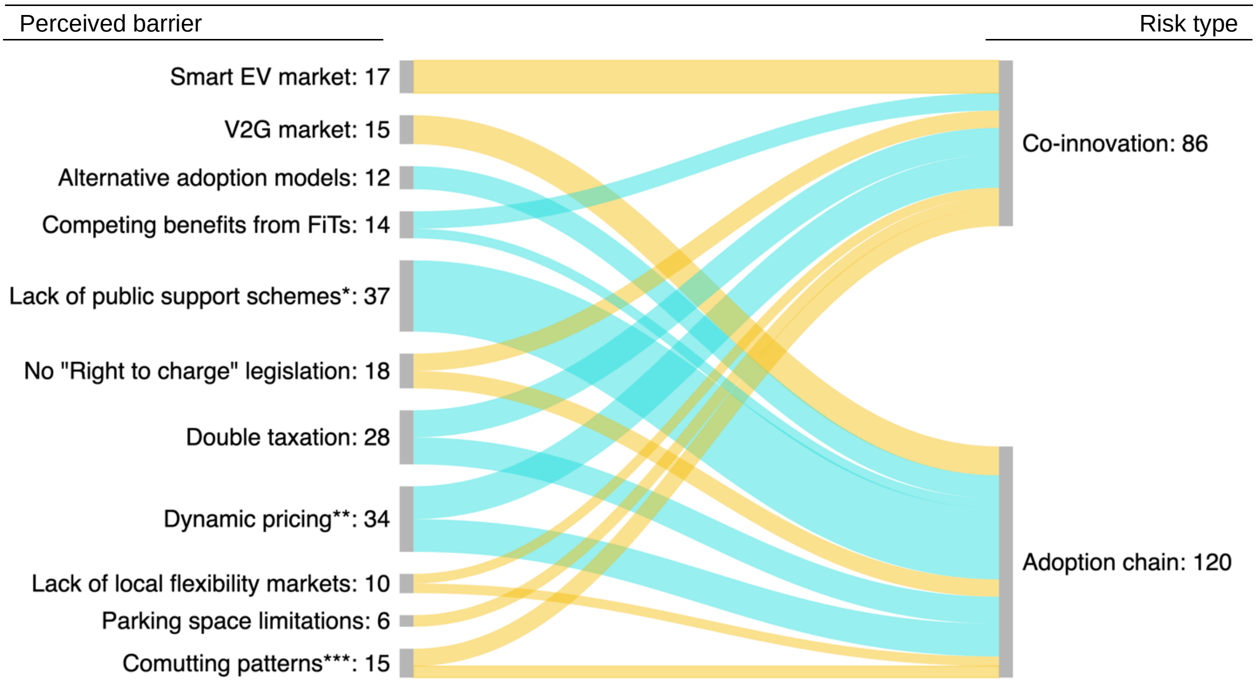

Figure 2. Relationship between perceived barriers and adoption chain/co-innovation risks undermining the path to market of a CS-BMI on 'solar V2G charging at work'. Note that several barriers relate to one risk type, while on occasions several risk types are caused by one same barrier. As such, the count does not represent the number of coded statements but the number of code co-occurrences. The width of the causal link is proportional to the frequency of co-occurrences. Factors with less than 4 co-occurrences are excluded. Colour coding used to further characterise perceived barriers as price factors (blue) and non-price factors (orange). Notes: * Includes flexible workplace policies. ** Includes purchase subsidies and fiscal incentives. *** Includes flexible grid tariffs and 'time of use' electricity tariffs.
Source*:* Own elaboration.

3 Conclusion

Sustainability transitions towards net-zero Greenhouse gas (GHG) emissions entail the mass-diffusion of technological innovations – such as renewable energies (RES) or electric vehicles (EVs) – at a pace and scale consistent with today's decarbonisation challenge. Efforts to accelerate such a process position companies as a key actor in expediting their market uptake. Yet despite being a major player in the 'supply' of clean energy or electromobility, the corporate actor remains grossly overlooked in its 'demand' facet as a consumer of such societal services (Meelen and Schwanen, 2023). In light of this shortcoming, this paper unpacks the role of companies as 'innovation users' through a systematic examination of their adoption potentials for a CS-BMI operating at the intersection between the electricity and (road) transport sectors. In doing so, this study delivers the following contributions.

On the one hand, the study mobilises insights from the sustainability management and market acceptance literatures to uncover and explore the influence of different (non-)price factors in either fostering or undermining the willingness of corporate energy consumers to partake in 'solar V2G charging at work'. In doing so, the analysis reveals a range of adoption chain and co-innovation risks undermining the path to market of a CS-BMI. The study's outputs thus provide an empirically-validated knowledge base to inform policy mixes targeting sector-specific as well as multi-system risk factors related to companies' adoption potentials. As such, it serves as a starting point to inform well-calibrated governance strategies focusing on overcoming some of the regulatory hurdles characterising early-stage adoption rates of technological innovations (Delmas et al., 2019).

Specifically, given corporate consumers' substantive share of societal service use in the energy and mobility domains, policy mixes aiming to accelerate sustainability transitions should prioritise tackling those co-innovation risk factors undermining the path to market of both focal and complementary innovations alike (e.g. 'right to charge', flexible grid tariffs, dynamic pricing, flexibility markets). Ultimately, such efforts would enable to reorient the adoption decisions from a critical mass of companies into actively supporting the path to market of CS-BMIs conceived to accelerate the diffusion of multi-purpose innovations across different market segments (Battke and Schmidt, 2015; Scherrer and Rogge, 2025).

On the other hand, this study furthers socio-technical transitions research on various fronts. First, it showcases a novel combination of previously unconnected literatures to addresses recent calls for corporate-level analyses as two previously disconnected systems become increasingly intertwined through the adoption of CS-BMIs (Costa et al. 2022). Second, the exploratory yet systematically-executed analysis provides an entry point to start examining how the corporate actor can accelerate sustainability transitions by adopting technological innovations that couple different sectors under an integrated adoption model (De Wit et al., 2002; Kaufmann et al., 2021). As such, it forwards a methodologically-rigorous proposition to start unravelling how user-mediated multi-system interactions occur in sustainability transitions (Andersen and Geels, 2023). Third and final, the exploratory risk analysis and policy implications outlined above combine to translate conceptually-grounded propositions into more actionable insight with sufficient policy salience to bridge the science-policy divide aching transitions research (Rosenbloom, 2025).

4 References

Adner, R., 2016. Ecosystem as Structure: An Actionable Construct for Strategy. J Manage 43, 39–58. https://doi.org/10.1177/0149206316678451

Adner, R., 2013. The Wide Lens: What Successful Innovators See That Others Miss. Penguin Random House.

Alšauskas, O., Connelly, E., Huismans, M., Jenness, E., Jorquera Copier, J., Le Marois, J.-B., Lombardo, T., McDonagh, S., O'Riordan, V., Petropoulos, A., Sery, J., 2024. Global EV Outlook 2024: Moving towards increased affordability. Paris.

Altunay, M., Bergek, A., Palm, A., 2021. Solar business model adoption by energy incumbents: the importance of strategic fit. Environ Innov Soc Transit 40, 501–520. https://doi.org/https://doi.org/10.1016/j.eist.2021.10.013

Andersen, A.D., Geels, F.W., 2023. Multi-system dynamics and the speed of net-zero transitions: Identifying causal processes related to technologies, actors, and institutions. Energy Res Soc Sci 102, 103178. https://doi.org/https://doi.org/10.1016/j.erss.2023.103178

ARE, 2021. Mobility and Transport Microcensus. Bern.

Auto Schweiz, 2024. Zulassungen neuer Personenwagen nach Marken [WWW Document]. Mobilität Bewegt Nachhaltig. URL https://www.auto.swiss/ (accessed 12.11.24).

Bakhuis, J., Kamp, L.M., Barbour, N., Chappin, É.J.L., 2024. Frameworks for multi-system innovation analysis from a sociotechnical perspective: A systematic literature review. Technol Forecast Soc Change 201, 123266. https://doi.org/https://doi.org/10.1016/j.techfore.2024.123266

Battke, B., Schmidt, T.S., 2015. Cost-efficient demand-pull policies for multi-purpose technologies – The case of stationary electricity storage. Appl Energy 155, 334–348. https://doi.org/https://doi.org/10.1016/j.apenergy.2015.06.010

Bingham, A.J., Witkowsky, P., 2021. Deductive and Inductive Approaches to Qualitative Data Analysis, in: Vanover, C., Mihas, P., Saldaña, J. (Eds.), Analyzing and Interpreting Qualitative Research: After the Interview. SAGE, pp. 133–146.

Budde Christensen, T., Wells, P., Cipcigan, L., 2012. Can innovative business models overcome resistance to electric vehicles? Better Place and battery electric cars in Denmark. Energy Policy 48, 498–505. https://doi.org/https://doi.org/10.1016/j.enpol.2012.05.054

Bulah, B.M., Tziva, M., Bidmon, C., Hekkert, M.P., 2023. Incumbent entry modes and entry timing in sustainable niches: The plant-based protein transition in the United States, Netherlands, and United Kingdom. Environ Innov Soc Transit 48, 100735. https://doi.org/https://doi.org/10.1016/j.eist.2023.100735

Burger, J., 2024. Imagine all the people: Strong growth in tariffs and services for demand-side flexibility in Europe. Brussels.

Chatham House, 2024. Chatham House Rule [WWW Document]. URL https://www.chathamhouse.org/about-us/chatham-house-rule (accessed 12.8.24).

Chauhan, S., Hans, M., Rittstieg, M., Zafar, S., 2023. Why the economics of electrification make this decarbonization transition different. McKinsey & Company 1–6.

Corbin, J., Strauss, A., 2008. Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory, 3rd ed, Basics of Qualitative Research (3rd ed.): Techniques and Procedures for Developing Grounded Theory. SAGE Publications, Inc. https://doi.org/10.4135/9781452230153

Costa, E., Wells, P., Wang, L., Costa, G., 2022. The electric vehicle and renewable energy: Changes in boundary conditions that enhance business model innovations. J Clean Prod 333, 130034. https://doi.org/https://doi.org/10.1016/j.jclepro.2021.130034

Dalder, J., Pearce-Higgins, Robert, N.H., 2024. Company car fossil fuel subsidies in Europe.

Danese, A., Bonsfills Clotet, M., Mencos, J., 2022. Design Thinking Structure.

De Wit, O., Van Den Ende, J., Schot, J., Van Oost, E., 2002. Innovative Junctions: Office Technologies in the Netherlands, 1880-1980. Technol Cult 43, 50–72. https://doi.org/10.1353/TECH.2002.0012

Delmas, M.A., Lyon, T.P., Maxwell, J.W., 2019. Understanding the Role of the Corporation in Sustainability Transitions. Organ Environ 32, 87–97. https://doi.org/10.1177/1086026619848255

Đukan, M., Kitzing, L., 2021. The impact of auctions on financing conditions and cost of capital for wind energy projects. Energy Policy 152, 112197. https://doi.org/https://doi.org/10.1016/j.enpol.2021.112197

EAFO, 2024. Norway: Country Profile [WWW Document]. URL https://alternative-fuels-observatory.ec.europa.eu/transport-mode/road/norway/vehicles-and-fleet (accessed 12.6.24).

Egli, F., 2020. Renewable energy investment risk: An investigation of changes over time and the underlying drivers. Energy Policy 140, 111428. https://doi.org/10.1016/J.ENPOL.2020.111428

Ellis, G., Schneider, N., Wüstenhagen, R., 2023. Dynamics of social acceptance of renewable energy: An introduction to the concept. Energy Policy 181, 113706. https://doi.org/10.1016/J.ENPOL.2023.113706

Ertelt, S.-M., Kask, J., 2024. Home field advantage: examining incumbency reorientation dynamics in low-carbon transitions. Environ Innov Soc Transit 50, 100802. https://doi.org/https://doi.org/10.1016/j.eist.2023.100802

Eurostat, 2024. Final energy consumption by sector [WWW Document]. URL https://ec.europa.eu/eurostat/databrowser/product/page/TEN00124 (accessed 12.9.24).

Eurostat, 2016. Glossary: Enterprise size [WWW Document]. Statistics Explained. URL https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Enterprise_size (accessed 12.9.24).

Federal Assembly of the Swiss Confederation, 2023. Bundesgesetz über eine sichere Stromversorgung mit erneuerbaren Energien. Parliament, Berne.

Flyvbjerg, B., 2006. Five Misunderstandings About Case-Study Research. Qualitative Inquiry 12, 219–245. https://doi.org/10.1177/1077800405284363

FOEN, 2024. Greenhouse gas emissions from transport [WWW Document]. URL https://www.bafu.admin.ch/bafu/en/home/topics/climate/state/data/greenhouse-gas-inventory/transport.html (accessed 12.6.24).

FSO, 2024a. Road vehicles - Stock, level of motorisation [WWW Document]. URL https://www.bfs.admin.ch/bfs/en/home/statistics/mobility-transport/transport-infrastructure-vehicles/vehicles/road-vehicles-stock-level-motorisation.html (accessed 12.6.24).

FSO, 2024b. Commuting [WWW Document]. URL https://www.bfs.admin.ch/bfs/en/home/statistics/mobility-transport/passenger-transport/commuting.html (accessed 12.8.24).

Funke, A., Kaltwasser, A., Schmitt, L., Adelhardt, C., Ejlebæk Enggaard, C., Simon, L., Gaytandjiev, A., von Guttenberg, L., Subiron, S., Matta, J., Nolting, L., Kranz, T., 2024. European Coalition for bidirectional Charging - Joint Report of the European Working Groups 1 and 2. Berlin.

Geels, F.W., Sovacool, B.K., Schwanen, T., Sorrell, S., 2017. Sociotechnical transitions for deep decarbonization. Science (1979) 357, 1242–1244. https://doi.org/10.1126/science.aao3760

Gerring, J., 2009. Case Selection for Case-Study Analysis: Qualitative and Quantitative Techniques, in: The Oxford Handbook of Political Methodology. Oxford University Press, pp. 645–684. https://doi.org/10.1093/oxfordhb/9780199286546.003.0028

Globisch, J., Dütschke, E., Wietschel, M., 2018a. Adoption of electric vehicles in commercial fleets: Why do car pool managers campaign for BEV procurement? Transp Res D Transp Environ 64, 122–133. https://doi.org/https://doi.org/10.1016/j.trd.2017.10.010

Globisch, J., Schneider, U., Dütschke, E., 2018b. Acceptance of electric vehicles by commercial users in the electric mobility pilot regions in Germany.

Gonçalves, F., de Abreu Borges, L., Batista, R., 2022. Electric Vehicle Charging Data Analytics of Corporate Fleets. World Electric Vehicle Journal 13, 237. https://doi.org/10.3390/wevj13120237

Gregory, J., Geels, F.W., 2024. Unfolding low-carbon reorientation in a declining industry: A contextual analysis of changing company strategies in UK oil refining (1990–2023). Energy Res Soc Sci 107, 103345. https://doi.org/https://doi.org/10.1016/j.erss.2023.103345

Groot-Kormelinck, A., Bijman, J., Trienekens, J., Klerkx, L., 2022. Producer organizations as transition intermediaries? Insights from organic and conventional vegetable systems in Uruguay. Agric Human Values 39, 1277–1300. https://doi.org/10.1007/s10460-022-10316-3

Guerrero, J.E., Hansen, E., 2021. Company-level cross-sector collaborations in transition to the bioeconomy: A multi-case study. For Policy Econ 123, 102355. https://doi.org/https://doi.org/10.1016/j.forpol.2020.102355

Guest, G., Bunce, A., Johnson, L., 2006. How Many Interviews Are Enough? An Experiment with Data Saturation and Variability. Field methods 18, 59–82. https://doi.org/10.1177/1525822X05279903

Hampl, N., Wustenhagen, R., 2012. Management of Investor Acceptance in Wind Power Megaprojects: A Conceptual Perspective. Organization, technology & management in construction : an international journal 4, 0–0. https://doi.org/10.5592/OTMCJ.2012.3.1

Hannan, M.A., Mollik, M.S., Al-Shetwi, A.Q., Rahman, S.A., Mansor, M., Begum, R.A., Muttaqi, K.M., Dong, Z.Y., 2022. Vehicle to grid connected technologies and charging strategies: Operation, control, issues and recommendations. J Clean Prod 339, 130587. https://doi.org/https://doi.org/10.1016/j.jclepro.2022.130587

Hecht, C., Figgener, J., Sauer, D.U., 2023. Vehicle-to-Grid Market Readiness in Europe with a Special Focus on Germany. Vehicles 5, 1452–1466. https://doi.org/10.3390/vehicles5040079

Hürlimann, C., Bengoa, D.S., 2017. Corporate finance in renewable energy investments - a review about theory and practice. Global Business and Economics Review 19, 592–631. https://doi.org/10.1504/GBER.2017.086606

Huttunen, S., Ojanen, M., Ott, A., Saarikoski, H., 2022. What about citizens? A literature review of citizen engagement in sustainability transitions research. Energy Res Soc Sci 91, 102714. https://doi.org/https://doi.org/10.1016/j.erss.2022.102714

Ioakimidis, C.S., Thomas, D., Rycerski, P., Genikomsakis, K.N., 2018. Peak shaving and valley filling of power consumption profile in non-residential buildings using an electric vehicle parking lot. Energy 148, 148–158. https://doi.org/https://doi.org/10.1016/j.energy.2018.01.128

Jorio, L., 2022. Swiss electricity providers face shocking challenges. SWI.

Kacperski, C., Kutzner, F., 2020. Financial and symbolic incentives promote ‘green’ charging choices. Transp Res Part F Traffic Psychol Behav 69, 151–158. https://doi.org/https://doi.org/10.1016/j.trf.2020.01.002

Kanton Bern, 2024. Förderprogramm Energie [WWW Document]. URL https://www.weu.be.ch/de/start/themen/energie/foerderprogramm-energie.html (accessed 12.11.24).

Kanton Zürich, 2024. Förderprogramm Ladeinfrastruktur: Weitere Fördermassnahmen [WWW Document]. URL https://www.zh.ch/de/mobilitaet/gesamtverkehrsplanung/dinamo/foerderprogramm-ladeinfrastruktur/weitere-massnahmen--des-foerderprogramms--ladeinfrastruktur.html (accessed 12.11.24).

Kaplan, S., Gruber, J., Reinthaler, M., Klauenberg, J., 2016. Intentions to introduce electric vehicles in the commercial sector: A model based on the theory of planned behaviour. Research in Transportation Economics 55, 12–19. https://doi.org/https://doi.org/10.1016/j.retrec.2016.04.006

Karltorp, K., Lu, S.S., Perez Vico, E., 2024. Three incumbents restructuring the Swedish energy and steel regimes: the case of Hybrit. Ind Innov 31, 1058–1092. https://doi.org/10.1080/13662716.2024.2376317

Kaufmann, Robert.K., Newberry, D., Xin, C., Gopal, S., 2021. Feedbacks among electric vehicle adoption, charging, and the cost and installation of rooftop solar photovoltaics. Nat Energy 6, 143–149. https://doi.org/10.1038/s41560-020-00746-w

Kemmler, A., Kirchner, A., Kreidelmeyer, S., Piégsa, A., Spillmann, T., Dambeckv, H., Falkenberg, H., Lübbers, S., Brutsche, A., Tschumi, D., Thurau, J., Ess, F., Thormeyer, C., Jakob, M., Reiter, U., Catenazzi, G., Sunarjo, B., Weinberg, L., Müller, J., Lienhard, L., Althaus, H.-J., Cox, B., Notter, B., 2021. Energy perspectives 2050+. Basel.

Kempton, W., Tomić, J., 2005. Vehicle-to-grid power implementation: From stabilizing the grid to supporting large-scale renewable energy. J Power Sources 144, 280–294. https://doi.org/https://doi.org/10.1016/j.jpowsour.2004.12.022

Khaled, R., Ali, H., Mohamed, E.K.A., 2021. The Sustainable Development Goals and corporate sustainability performance: Mapping, extent and determinants. J Clean Prod 311, 127599. https://doi.org/https://doi.org/10.1016/j.jclepro.2021.127599

Kinghorn, R., O’Connell, K., Marandi, B., 2021. Beyond compliance - Consumers and employees want business to do more on ESG:How business can close the expectations gap [WWW Document]. URL https://www.pwc.com/us/en/services/consulting/library/consumer-intelligence-series/consumer-and-employee-esg-expectations.html (accessed 12.6.24).

Klauenberg, J., Rudolph, C., Zajicek, J., 2016. Potential Users of Electric Mobility in Commercial Transport – Identification and Recommendations. Transportation Research Procedia 16, 202–216. https://doi.org/https://doi.org/10.1016/j.trpro.2016.11.020

Köhler, J., Geels, F.W., Kern, F., Markard, J., Onsongo, E., Wieczorek, A., Alkemade, F., Avelino, F., Bergek, A., Boons, F., Fünfschilling, L., Hess, D., Holtz, G., Hyysalo, S., Jenkins, K., Kivimaa, P., Martiskainen, M., McMeekin, A., Mühlemeier, M.S., Nykvist, B., Pel, B., Raven, R., Rohracher, H., Sandén, B., Schot, J., Sovacool, B., Turnheim, B., Welch, D., Wells, P., 2019. An agenda for sustainability transitions research: State of the art and future directions. Environ Innov Soc Transit 31, 1–32. https://doi.org/10.1016/J.EIST.2019.01.004

Kristensson, P., Pedersen, P.E., Thorbjørnsen, H., 2020. New perspectives on consumer adoption and diffusion of innovations. J Bus Res 116, 522–525. https://doi.org/https://doi.org/10.1016/j.jbusres.2020.04.048

Maguire, K., 2022. The benefits of offering electric cars as a job perk. People Management.

Margaritis, D., Anagnostopoulou, A., Tromaras, A., Boile, M., 2016. Electric commercial vehicles: Practical perspectives and future research directions. Research in Transportation Business & Management 18, 4–10. https://doi.org/https://doi.org/10.1016/j.rtbm.2016.01.005

Markard, J., Raven, R., Truffer, B., 2012. Sustainability transitions: An emerging field of research and its prospects. Res Policy 41, 955–967. https://doi.org/https://doi.org/10.1016/j.respol.2012.02.013

Meelen, T., Schwanen, T., 2023. Organizations as users in sustainability transitions: Embedding Vehicle-to-Grid technology in the United Kingdom. Energy Res Soc Sci 106, 103303. https://doi.org/https://doi.org/10.1016/j.erss.2023.103303

Mehrjerdi, H., Rakhshani, E., 2019. Vehicle-to-grid technology for cost reduction and uncertainty management integrated with solar power. J Clean Prod 229, 463–469. https://doi.org/https://doi.org/10.1016/j.jclepro.2019.05.023

Mohammed, L., Niesten, E., Gagliardi, D., 2020. Adoption of alternative fuel vehicle fleets – A theoretical framework of barriers and enablers. Transp Res D Transp Environ 88, 102558. https://doi.org/https://doi.org/10.1016/j.trd.2020.102558

Motz, A., 2021. Consumer acceptance of the energy transition in Switzerland: The role of attitudes explained through a hybrid discrete choice model. Energy Policy 151, 112152. https://doi.org/https://doi.org/10.1016/j.enpol.2021.112152

Nagler, E., 2021. Standing still. London.

Needell, Z., Wei, W., Trancik, J.E., 2023. Strategies for beneficial electric vehicle charging to reduce peak electricity demand and store solar energy. Cell Rep Phys Sci 4. https://doi.org/10.1016/j.xcrp.2023.101287

Nesbitt, K., Davies, J., 2013. From the top of the organization to the bottom line: Understanding the fleet market for plug-in electric vehicles, in: 2013 World Electric Vehicle Symposium and Exhibition (EVS27). pp. 1–14. https://doi.org/10.1109/EVS.2013.6914995

Nienhueser, I.A., Qiu, Y., 2016. Economic and environmental impacts of providing renewable energy for electric vehicle charging – A choice experiment study. Appl Energy 180, 256–268. https://doi.org/https://doi.org/10.1016/j.apenergy.2016.07.121

Nieto Cubero, J., Gbadegeshin, S.A., Consolación, C., 2021. Commercialization of disruptive innovations: Literature review and proposal for a process framework. International Journal of Innovation Studies 5, 127–144. https://doi.org/https://doi.org/10.1016/j.ijis.2021.07.001

Nordt, A., Raven, R., Malekpour, S., Sharp, D., 2024. Decarbonising industry supply chains: Incumbent-oriented transition intermediation for industry energy transition. Environ Innov Soc Transit 51, 100843. https://doi.org/https://doi.org/10.1016/j.eist.2024.100843

O'Connor, G.C., Rice, M.P., 2013. New Market Creation for Breakthrough Innovations: Enabling and Constraining Mechanisms. Journal of Product Innovation Management 30, 209–227. https://doi.org/https://doi.org/10.1111/j.1540-5885.2012.00996.x

Orgland, M.E., 2024. Grid Integration of Solar Photovoltaics and Electric Vehicles (Master thesis). University of St. Gallen, St.Gallen.

Parker, C., Scott, S., Geddes, A., 2019. Snowball Sampling. SAGE Publications Ltd, London. https://doi.org/10.4135/9781526421036831710

Pedersen, E.R.G., Lüdeke-Freund, F., Henriques, I., Seitanidi, M.M., 2020. Toward Collaborative Cross-Sector Business Models for Sustainability. Bus Soc 60, 1039–1058. https://doi.org/10.1177/0007650320959027

Pimonenko, T., Bilan, Y., Horák, J., Starchenko, L., Gajda, W., 2020. Green Brand of Companies and Greenwashing under Sustainable Development Goals. Sustainability 12, 1679. https://doi.org/10.3390/su12041679

Pons-Seres de Brauwer, C., 2024. Acceptance dynamics of innovation diffusion: A heuristic framework for analysing actor reorientations in sustainability transitions. Energy Res Soc Sci 103480. https://doi.org/10.1016/j.erss.2024.103480

Pons-Seres de Brauwer, C., Cohen, J.J., 2022. Citizen preferences for co-investing in renewable energy : An empirical exploration of the "community-as-investor" acceptance of renewables' innovation, in: Energy Transition in the Baltic Sea Region. Routledge, pp. 61–89. https://doi.org/10.4324/9781032003092-7

Rosenbloom, D., 2025. Building momentum for a 'policy turn' in sustainability transitions: Lessons from Canada to consolidate strengths and bridge science-policy divides. Environ Innov Soc Transit 55, 100956. https://doi.org/https://doi.org/10.1016/j.eist.2024.100956

Rosenbloom, D., Rinscheid, A., 2020. Deliberate decline: An emerging frontier for the study and practice of decarbonization. WIREs Climate Change 11, e669. https://doi.org/https://doi.org/10.1002/wcc.669

Rosser, S., Lanz, L., de Haan, P., 2023. Verständnis Ladeinfrastruktur 2050: Wie lädt die Schweiz in Zukunft? Bern .

Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., Burroughs, H., Jinks, C., 2018. Saturation in qualitative research: exploring its conceptualization and operationalization. Qual Quant 52, 1893–1907. https://doi.org/10.1007/s11135-017-0574-8

Saunders, M.N.K., Lewis, P., Thornhill, A., 2019. Understanding Reseach Philisophy and Approaches to Theory Development, 8th ed, Research Methods for Business Students. Pearson, London.

Schaltegger, S., Loorbach, D., Hörisch, J., 2023. Managing entrepreneurial and corporate contributions to sustainability transitions. Bus Strategy Environ 32, 891–902. https://doi.org/https://doi.org/10.1002/bse.3080

Scherrer, A., Rogge, K.S., 2025. When do incumbents adopt radical net-zero technologies? Analysing differences in strategy trajectories of European truck manufacturers towards alternative vehicle technologies. Technol Forecast Soc Change 211, 123872. https://doi.org/https://doi.org/10.1016/j.techfore.2024.123872

Seawright, J., Gerring, J., 2008. Case Selection Techniques in Case Study Research: A Menu of Qualitative and Quantitative Options. Polit Res Q 61, 294–308. https://doi.org/10.1177/1065912907313077

Segalla, M., Rouziès, D., 2023. The Ethics of Managing People's Data. Harv Bus Rev.

SFOE, 2024. Switzerland's energy balance [WWW Document]. URL https://www.bfe.admin.ch/bfe/en/home/supply/statistics-and-geodata/energy-statistics/overall-energy-statistics.html/ (accessed 12.6.24).

SFOE, 2023. Wie lädt die Schweiz in Zukunft? BFE präsentiert erste Gesamtsicht aller Akteure der Elektromobilität [WWW Document]. URL https://www.bfe.admin.ch/bfe/de/home/news-und-medien/medienmitteilungen/mm-test.msg-id-94975.html (accessed 12.6.24).

Sierzchula, W., 2014. Factors influencing fleet manager adoption of electric vehicles. Transp Res D Transp Environ 31, 126–134. https://doi.org/https://doi.org/10.1016/j.trd.2014.05.022

Simmons, N., 2017. Axial Coding, in: Allen, M. (Ed.), The SAGE Encyclopedia of Communication Research Methods. SAGE Publications, Inc, Thousand Oaks, pp. 80–82. https://doi.org/10.4135/9781483381411

Skippon, S., Chappell, J., 2019. Fleets' motivations for plug-in vehicle adoption and usage: U.K. case studies. Transp Res D Transp Environ 71, 67–84. https://doi.org/https://doi.org/10.1016/j.trd.2018.12.009

Sovacool, B.K., Kester, J., Noel, L., Zarazua de Rubens, G., 2020a. Actors, business models, and innovation activity systems for vehicle-to-grid (V2G) technology: A comprehensive review. Renewable and Sustainable Energy Reviews 131, 109963. https://doi.org/https://doi.org/10.1016/j.rser.2020.109963

Sovacool, B.K., Turnheim, B., Martiskainen, M., Brown, D., Kivimaa, P., 2020b. Guides or gatekeepers? Incumbent-oriented transition intermediaries in a low-carbon era. Energy Res Soc Sci 66, 101490. https://doi.org/https://doi.org/10.1016/j.erss.2020.101490

Srivastava, P., Hopwood, N., 2009. A Practical Iterative Framework for Qualitative Data Analysis. Int J Qual Methods 8, 76–84. https://doi.org/10.1177/160940690900800107

Stål, H.I., Bengtsson, M., Manzhynski, S., 2022. Cross-sectoral collaboration in business model innovation for sustainable development: Tensions and compromises. Bus Strategy Environ 31, 445–463. https://doi.org/https://doi.org/10.1002/bse.2903

Steffen, B., 2018. The importance of project finance for renewable energy projects. Energy Econ 69, 280–294. https://doi.org/https://doi.org/10.1016/j.eneco.2017.11.006

Sukumar, P.T., Metoyer, R., 2019. Replication and Transparency of Qualitative Research from a Constructivist Perspective. https://doi.org/10.31219/OSF.IO/6EFVP

The Mobility House, 2023. Which electric cars support V2G? [WWW Document]. URL https://www.mobilityhouse.com/int_en/knowledge-center/article/which-cars-are-v2g-capable

Turnheim, B., 2022. Destabilisation, decline and phase-out in transitions research, in: Technologies in Decline: Socio-Technical Approaches to Discontinuation and Destabilisation. Taylor and Francis, pp.

43–77. https://doi.org/10.4324/9781003213642-3/DESTABILISATION-DECLINE-PHASE-TRANSITIONS-RESEARCH-BRUNO-TURNHEIM

Usher, W., Strachan, N., 2013. An expert elicitation of climate, energy and economic uncertainties. Energy Policy 61, 811–821. https://doi.org/https://doi.org/10.1016/j.enpol.2013.06.110

Van Liedekerke, A., Schwarz, M., Gjorgiev, B., 2024. Vehicle-to-grid in Switzerland: A first estimate of the value of vehicle-to-grid for the Swiss electricity system. Zürich.

van Mossel, A., van Rijnsoever, F.J., Hekkert, M.P., 2018. Navigators through the storm: A review of organization theories and the behavior of incumbent firms during transitions. Environ Innov Soc Transit 26, 44–63. https://doi.org/https://doi.org/10.1016/j.eist.2017.07.001

Verdolini, E., Anadón, L.D., Baker, E., Bosetti, V., Aleluia Reis, L., 2018. Future Prospects for Energy Technologies: Insights from Expert Elicitations. Rev Environ Econ Policy 12, 133–153. https://doi.org/10.1093/reep/rex028

Verhees, B., Verbong, G., 2015. Users, consumers, citizens: a systematic review of their roles in sustainability transitions. Technische Universiteit Eindhoven, Endhoven.

Vuichard, P., 2021. Electrifying the company car: Identifying hard and soft barriers among fleet managers in Switzerland. Energy Res Soc Sci 77, 102098. https://doi.org/https://doi.org/10.1016/j.erss.2021.102098

Wikström, M., Hansson, L., Alvfors, P., 2016. Investigating barriers for plug-in electric vehicle deployment in fleets. Transp Res D Transp Environ 49, 59–67. https://doi.org/https://doi.org/10.1016/j.trd.2016.08.008

Wikström, M., Hansson, L., Alvfors, P., 2014. Socio-technical experiences from electric vehicle utilisation in commercial fleets. Appl Energy 123, 82–93. https://doi.org/https://doi.org/10.1016/j.apenergy.2014.02.051

Willard, M., Flanagan, K., Fleishman, E., 2020. Workplace Charging: Lessons from Sustainability Trailblazers - Best Practices for Reducing Emissions with Electric Vehicle Charging in the Workplace.

Wüstenhagen, R., Menichetti, E., 2012. Strategic choices for renewable energy investment: Conceptual framework and opportunities for further research. Energy Policy 40, 1–10. https://doi.org/https://doi.org/10.1016/j.enpol.2011.06.050

Wüstenhagen, R., Wolsink, M., Bürer, M.J., 2007. Social acceptance of renewable energy innovation: An introduction to the concept. Energy Policy 35, 2683–2691. https://doi.org/https://doi.org/10.1016/j.enpol.2006.12.001

Yin, R.K., 2023. Case Study Research and Applications: Design and Methods, 6th ed, Japan Marketing Journal. SAGE, Thousand Oaks.

Zhou, B., Ding, H., 2023. How public attention drives corporate environmental protection: Effects and channels. Technol Forecast Soc Change 191, 122486. https://doi.org/https://doi.org/10.1016/j.techfore.2023.122486

Zhou, Y., Luo, L., Shen, H., 2021. Community pressure, regulatory pressure and corporate environmental performance. Australian Journal of Management 47, 368–392. https://doi.org/10.1177/03128962211017172

Appendix

Table A1. String of terms used in the Scopus database searches, with number of article results highlighted in *italics*:

Search stream #1:	[TITLE-ABS-KEY (preferences OR buy OR purchase OR adopt OR use) AND (firm OR company OR corporate OR organisation) AND ("electric vehicle") AND (charging OR "vehicle-to-grid" OR V2G) AND (EXCLUDE (DOCTYPE , "cp") OR EXCLUDE (DOCTYPE , "cr"))] *(N=96)*.
Search stream #2:	[TITLE-ABS-KEY ("company fleet" OR "corporate fleet" OR "company "car") AND ("electric vehicle" OR EV OR "vehicle-to-grid" OR V2G OR "smart charging")] (N=32).
Search stream #3:	[TITLE-ABS-KEY ("workplace charging") AND TITLE-ABS-KEY (preference OR decision OR choice)] *(N=21)*.

Source: Own elaboration.

Table A2. List of interviewees.

Nº	Interview type	Position	Company	Size*
C1	Exploratory	Director of corporate strategy	Smart EV charging software developer	Large
C2	Exploratory	Senior expert – E-mobility & energy	Mobility association	Large
C3	Exploratory	Product owner – Smart EV charging	Smart energy management software provider	Small
C4	Semi-structured	Senior product manager	IoT software developer	Small
C5	Semi-structured	Senior consultant – Data & Energy	Industry association	Small
C6	Semi-structured	Project manager – Corporate development	E-mobility service provider	Large
C7	Semi-structured	Senior business consultant	E-mobility service provider	Large
C8	Semi-structured	Corporate sustainability officer	Insurance company	Large
C9	Semi-structured	Sustainability manager – Corporate real estate	Insurance company	Large
C10	Semi-structured	Operations sustainability manager	Insurance company	Large
C11	Semi-structured	Director – Sustainability services	Consultancy firm	Large
C12	Semi-structured	Senior consultant - corporate sustainability	Consultancy firm	Large
C13	Semi-structured	Co-founder and CEO	Consultancy firm	Medium-sized
C14	Semi-structured	Managing director – Energy and mobility	Food retailer	Large
C15	Semi-structured	Head of sustainability	Real estate developer	Medium-sized
C16	Semi-structured	Chief sustainability officer	Commercial bank	Large

C17	Semi-structured	Sustainability manager – real estate	Public bank	Large
C18	Semi-structured	Co-managing director	Electrical engineering company	Small
C19	Semi-structured	Founder and CEO	Electrical engineering company	Micro
C20	Semi-structured	Head of e-mobility	Industrial engineering company	Large
C21	Semi-structured	Senior Associate – Investments	Institutional investor	Large
C22	Semi-structured	Senior manager – Corporate sales	E-mobility service provider	Small
C23	Semi-structured	Innovation Manager – E-mobility	Utility company	Large
C24	Semi-structured	Team lead – Sustainability	Utility company	Large
C25	Semi-structured	Product manager	Fleet management service provider	Large
C26	Semi-structured	Founder and special advisor	Sola PV panel retailer	Small
C27	Semi-structured	Managing director	Public infrastructure administrator	Micro
C28	Semi-structured	Team lead – sustainable value chains	Furniture manufacturer	Medium-sized
C29	Semi-structured	Managing director	Software developer	Medium-sized
C30	Semi-structured	Manager – Sales and services	Software developer	Micro
C31	Semi-structured	Officer – Corporate social responsibility	Psychiatric clinic	Medium-sized

* Determined following Eurostat's (2016) company size categorisation based on number of employed persons: micro enterprise (<10 persons employed), small enterprise (10-49 persons), medium-sized enterprise (50-249 persons), large enterprise (≥250 persons).

Source: Own elaboration.

Table A1. Typology of drivers and barriers. (Own elaboration).