

Corporate Co-Adoption of Electric Vehicles and Solar PV: A Choice Experiment in Switzerland, Spain and the Netherlands

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Extended Abstract

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Abstract Summary

Decarbonising power and transport is essential for Europe's net-zero transition, with companies playing a critical role due to their large share in energy demand and vehicle fleets. Workplace-based smart electric vehicle (EV) charging powered by solar energy offers significant potential to align charging demand with renewable generation, reduce peak loads, and lower costs for employees. However, its adoption depends not only on corporate investment but also on employee acceptance of trade-offs such as reduced flexibility and mobility constraints.

This study investigates employee preferences for workplace smart solar EV charging across Switzerland, Spain, and the Netherlands, representing different levels of EV and solar adoption. Using a discrete choice experiment with 3,149 respondents and 31,490 observations, the analysis evaluates how program attributes, including price, guaranteed driving range, solar share, flexibility fees, and required office days, influence participation.

Results show moderate to high willingness to participate, highest in Spain (69%), followed by Switzerland (49%) and the Netherlands (42%). The findings suggest that effective workplace charging programs should emphasize low costs, high mobility assurance, and minimal restrictions. Thereby, price is the most important factor across all countries, indicating that employees view workplace charging primarily as a cost-based decision. Guaranteed driving range is the second key driver, reflecting the importance of mobility assurance. Flexibility-related features, particularly penalties for regaining control over charging, are especially important in the Netherlands. Solar energy integration increases attractiveness but remains secondary to economic and functional considerations.

Cross-country differences further reveal that Spanish employees are willing to trade flexibility for charging access, Dutch employees prioritize maintaining flexible work routines, and Switzerland represents an intermediate case. Taken together, these differences indicate that acceptance hinges on affordability and reliable mobility rather

than environmental benefits alone, underscoring the importance of aligning EV adoption and smart charging incentives to convert infrastructure availability into actual adoption.

Presenting Author Biography

Celina Scherbeck is a PhD student and research associate at the Institute of Responsible Innovation, Sustainability and Energy of the University of St.Gallen. Her research focuses on the grid integration of electric vehicles and solar PV systems by analyzing smart solar EV charging solutions at the workplace. Prior to enrolling in the PhD, she worked in Strategy Consulting and has experience advising clients in the energy and automotive industries.