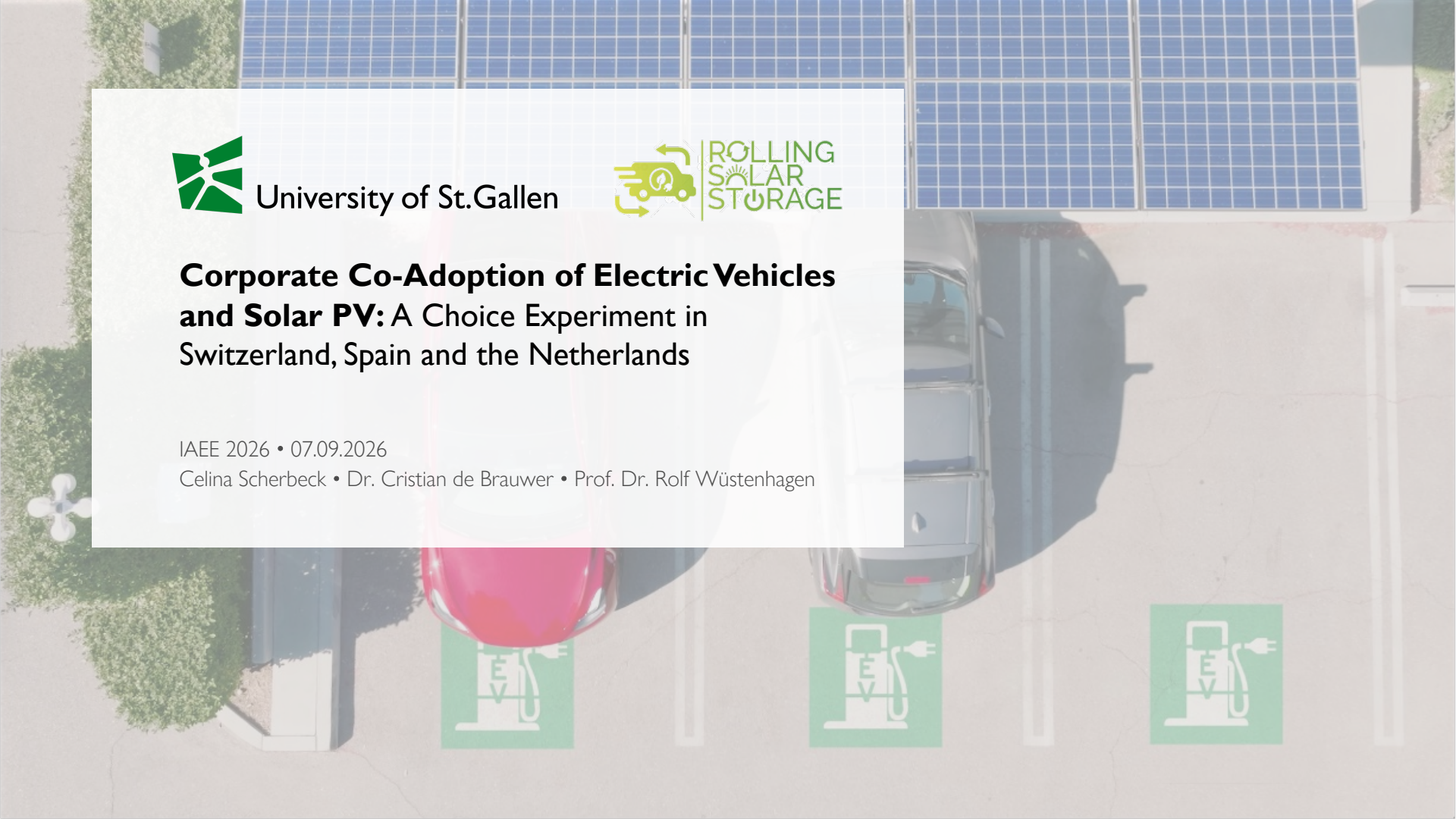


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ROLLING SOLAR STORAGE

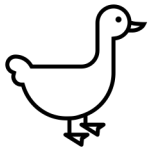
Corporate Co-Adoption of Electric Vehicles and Solar PV: A Choice Experiment in Switzerland, Spain and the Netherlands

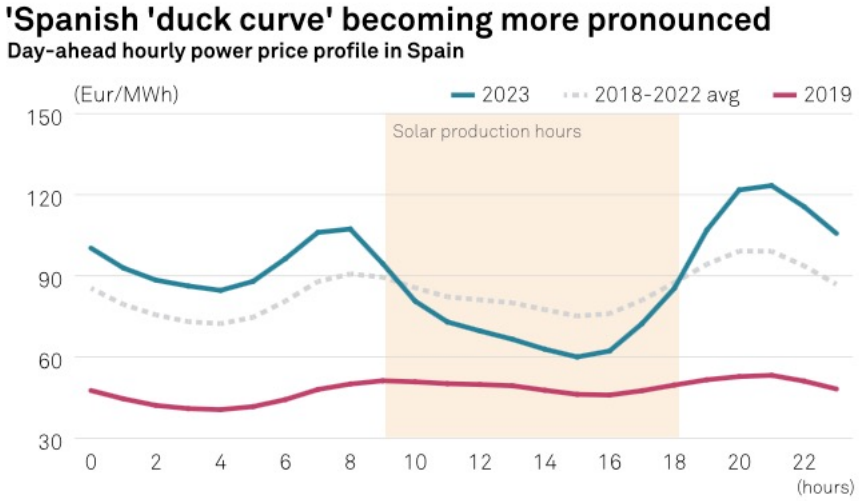
IAEE 2026 • 07.09.2026

Celina Scherbeck • Dr. Cristian de Brauwer • Prof. Dr. Rolf Wüstenhagen

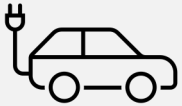
The grid integration of solar PV and electric vehicles bears challenges

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Sources: S&P Global Commodity Insights (2023)



If **unmanaged**, the rapid uptake of EVs can exacerbate early evening **demand peaks** as people predominantly charge at home

Even with smart charging there is a **temporal mismatch** between current EV charging patterns and solar PV generation

Charging EVs at the workplace is a solution to this temporal mismatch

Workplace charging deserves a stronger focus by policymakers & researchers

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Currently policymakers & researchers focus on two pillars of EV charging infrastructure:



Homeplace

+



Public

!

The IEA projects that the 2035 charger stock consists of: **35% workplace** vs. **only 5% public chargers** – better understanding of workplace charging required

Sources: IEA (2026)

3 relevant literature streams have been identified

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Residential smart charging

- Motivators and barriers to acceptance identified
  (e.g., Will & Schuller, 2016)
- Financial compensation is key driver of acceptance
  (e.g., Bailey & Axsen, 2015)
- Mobility concerns due to insufficient battery state of charge remain
  (e.g., Amaris et al., 2025)

Solar residential charging

- Temporal overlap constrained by individuals being at work (de Sa et al., 2023)
- Installation of solar PV and charging stations remains hurdle for renters and condominium owners
  (Poshnath et al., 2023)

Workplace smart charging

- Technical feasibility and opportunity to reduce peak loads confirmed
  (Seger et al., 2025; Opoku & Jochem, 2026)
- Current focus on bidirectional charging
  (Meyer et al., 2025; Gong et al., 2021

We combine the focus on solar PV and workplace charging

Research Questions:

1. To what extent are actual and potential EV adopters willing to participate in smart workplace charging?
2. How do different features of smart workplace charging schemes shape employees' willingness to participate?
3. How does the willingness to participate in workplace charging vary across countries with different levels of PV and EV adoption?

Three different countries chosen with varying levels of EV and PV adoption

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Adoption levels	Spain	Switzerland	Netherlands
	Low	Medium	High
BEV share of new car sales (H1 2026)	10.1%	23.7%	36.5%
	High	Medium	High
Per-capita solar generation (2025)	2nd highest in Europe; focus on utility-scale	Representative of EU-27 average; focus on commercial-scale	Highest in Europe; focus on residential-scale

Notes: Countries chosen based on joint solar and EV potential; high EV adoption countries such as Norway excluded due to low solar PV adoption

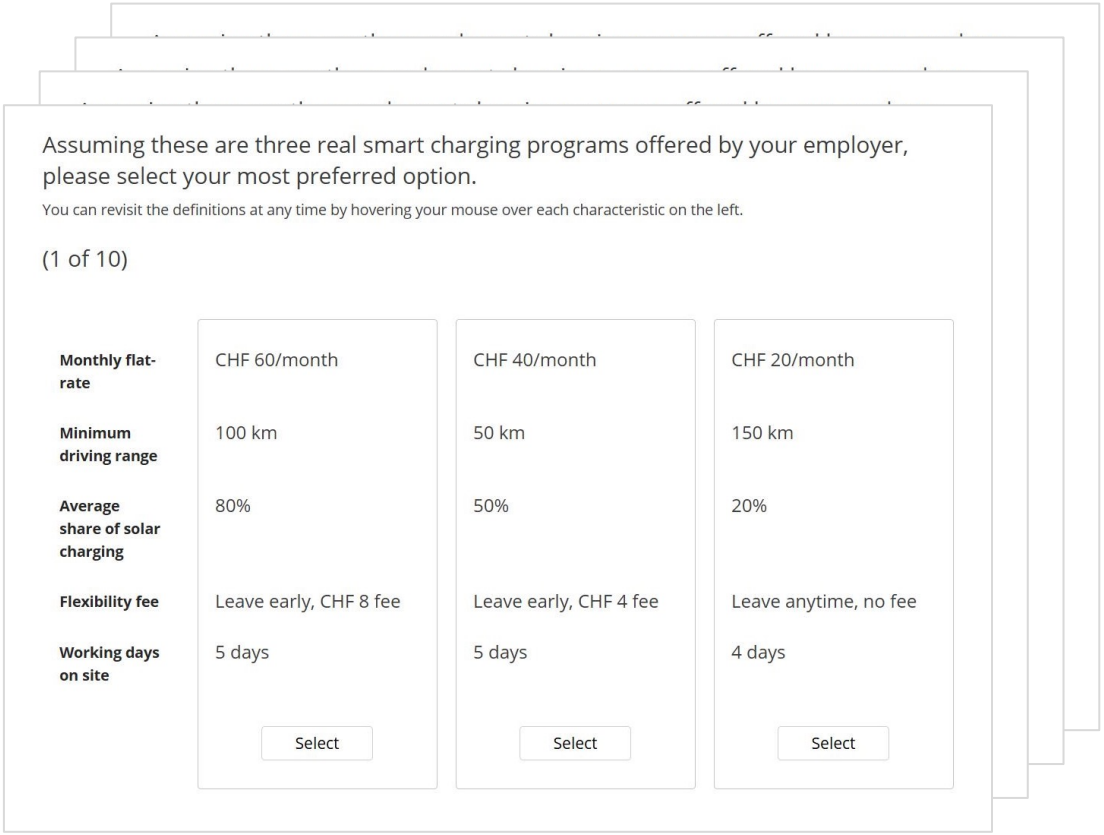
5 key attributes identified to shape acceptance of smart solar charging at work

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Attributes	Description	Levels
Monthly flat rate	Monthly participation fee for your employer's smart solar charging program, including all electricity costs for charging at the workplace.	• CHF/EUR 20/month • CHF/EUR 40/month • CHF/EUR 60/month
Average share of solar charging	Average annual share of solar power used to charge your electric vehicle at work. The rest is charged with electricity from the grid.	• 80% • 50% • 20%
Minimum driving range	Guaranteed minimum range that your vehicle will have at the end of your workday.	• 150 km • 100 km • 50 km
Flexibility fee	Fee you have to pay if you unplug your car early on a given day and leave work before the scheduled end of the charging process.	• No fees • CHF/EUR 4 each • CHF/EUR 8 each
Working days on site	Minimum number of days per week you must work at your workplace to be eligible to participate in this program.	• 3 days a week • 4 days a week • 5 days a week

A choice experiment estimates influence of select attributes on acceptance of smart solar charging at work

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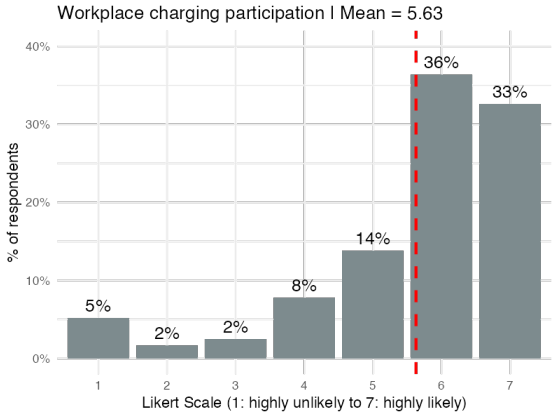


Choice tasks are **repeated 10x** resulting in **31,490 choices made** by respondents from Switzerland, Spain and the Netherlands

Across all three countries we see high acceptance for workplace charging

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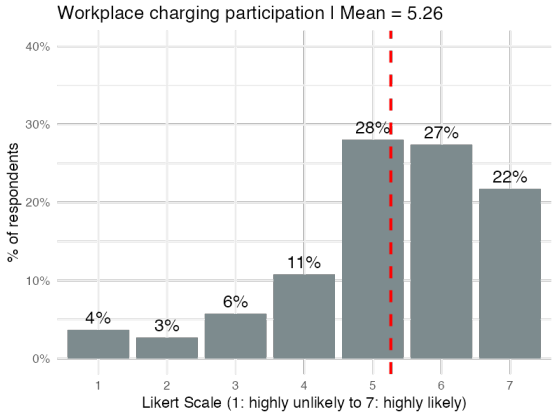
Spain



83% of respondents likely to participate

Opportunity to leapfrog straight to workplace charging; higher intrinsic motivation to support employer

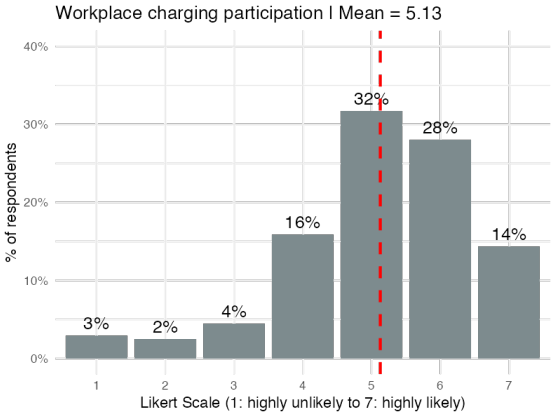
Switzerland



77% of respondents likely to participate

Results generally largely intermediary between Spanish and Dutch respondents

Netherlands



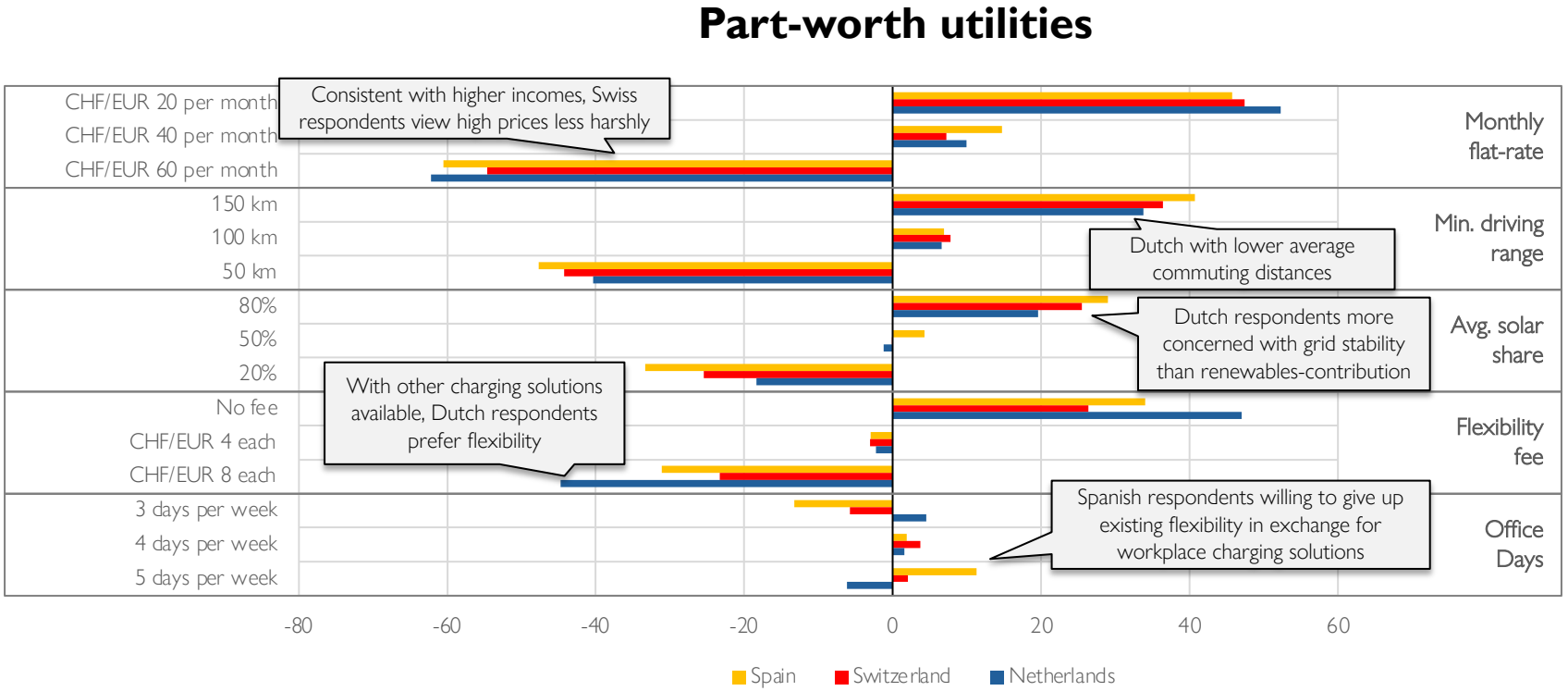
74% of respondents likely to participate

High share of residential and public charging stations reduces reliance on additional workplace charging

Notes: Results based on ES n = 1,052; CH n = 1,048; NL n = 1,049

Dutch respondents are most price-sensitive; Spanish respondents place higher value on solar share

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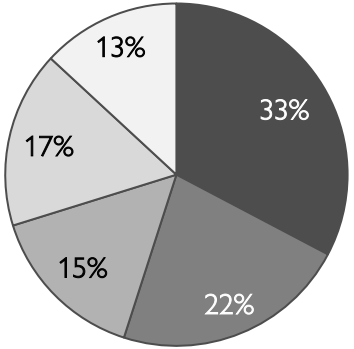


Notes: Results based on ES n = 1,052; CH n = 1,048; NL n = 1,049

Cost sensitivity is common to all three markets – the non-price attributes is where preferences diverge

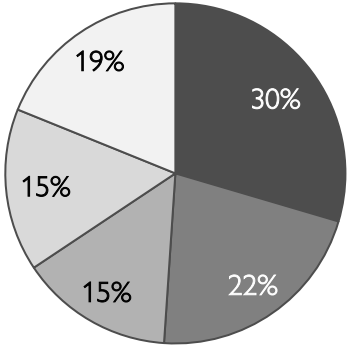
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Spain



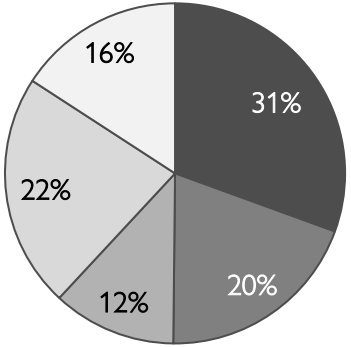
Strongest focus on monthly costs and willingness to compromise on number of days onsite shown by higher ambivalence here

Switzerland



Only in Switzerland do attendance requirements rival driving range – there, enrolment is constrained by contract rigidity rather than by the energy terms

Netherlands



Resistance to losing daily flexibility is highest – experience with EVs appears to raise, not lower, the price of giving up control

Monthly flat-rate | Minimum driving range | Avg. share of solar charging | Flexibility fee | Days onsite

Notes: Results based on ES n = 1,052; CH n = 1,048; NL n = 1,049

Smart solar workplace charging bears strong potential

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Smart solar workplace charging adds value by:

- Enhancing the overall **decarbonization** of the transport sector
- Reducing the **temporal mismatch** of solar PV generation and EV charging
- Offering a viable charging option for **apartment owners and tenants**
- Supporting **employers** in their green **transition**



Generally high acceptance driven by **economic benefit and credible mobility assurance** - solar component adds value but is not sufficient to compensate for perceived loss of flexibility



We encourage policymakers to consider:

- Financial support for **joint installation** of commercial PV and EV chargers
- **Progressive subsidies** to ensure meeting requirements for range & flexibility
- Shifting **funding to C&I scale** to increase solar PV self-consumption
- **Tax** implications

Thank you!

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Sustainability and Energy

