EUROPEAN CONGRESS
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Clean, resilient and connected mobility.

Guidelines and recommendations for deployment of innovative EV charging infrastructure and services

Andrew Winder

ERTICO – ITS Europe

Session TP04: Adaptive mobility technology - 2

ORGANISED BY: ERTICO ITS EUROPE

IN PARTNERSHIP WITH:

HOSTED BY: NO8DO Ayuntamiento de Sevilla; Sevilla Feeling LAND

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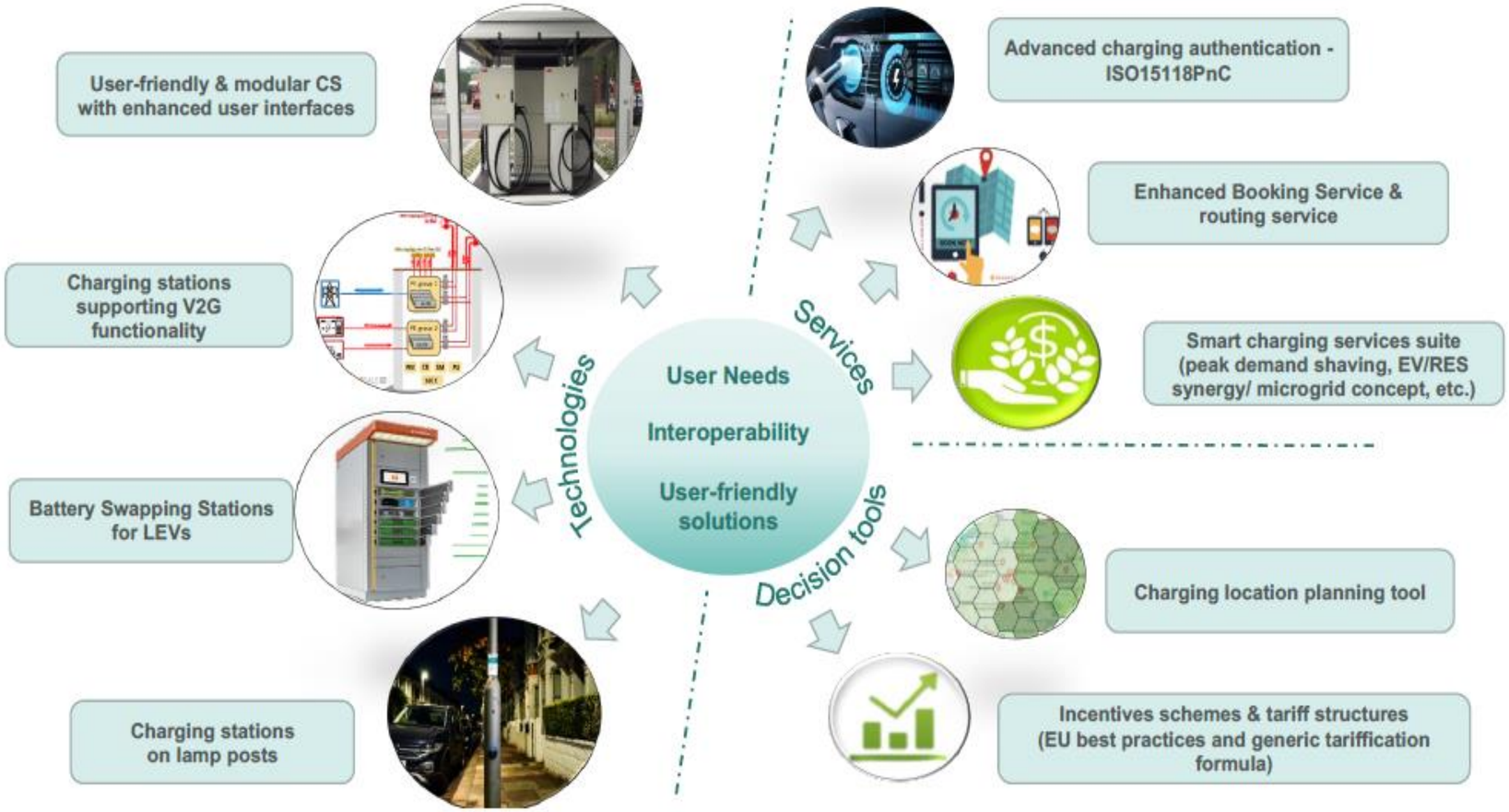
eCharge4Drivers overview

EU project 2020-2024 to promote electro-mobility, making it more convenient for users to go green.

- Improve EV charging experience in urban areas and on interurban corridors
- Develop and design user-centric and interoperable charging solutions
- 10 European demonstration sites



eCharge4Drivers is co-funded by the EU under the H2020 Research and Innovation Programme (grant agreement No 875131).

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Guidelines and recommendations coming from 3 main sources

1. **European interview survey of public authorities and charge point operators**

- Legal & best practice; Payment; Deployment rules & incentives; EV parking/charging spaces, reservations and enforcement
- 26 interviews conducted (12 countries)

2. Desk study gathering main regulatory frameworks

- Sample of 6 European countries and EU level

3. Feedback from project partners developing / demonstrating services in eCharge4Drivers

- Insights and recommendations based on experiences in the project, covering:
  - Challenges and deviations
  - Effectiveness of solutions and reasons
  - Insights and lessons learnt
  - Suggested best practices and recommendations for optimisation
  - Scaling up challenges and opportunities
- Feedback on 11 solutions

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Guidelines on charging technologies – 1

User-friendly EV charging stations developed by ABB. Deployed at 7 sites (6 countries)

- longer and weight-supported charging cables
- enhanced physical accessibility
- connector identification with unified labels
- reliable, accurate metering of energy delivered to the vehicle
- large displays (32-inch screen)

Further roll-out requires:

- Close cooperation of players
- Further standardisation of protocols
- Interoperability between all EVs and chargers

Enhanced user experience is key, including clear information if it does not work

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Guidelines on charging technologies – 2

Battery swapping for LEVs (2 countries)

- Issues securing suitable locations for swapping stations
- Negotiate contracts with property owners
- Ensure necessary electrical infrastructure at the site
- Challenge to maintain availability and reliability of battery stocks; manage logistics
- Regulatory hurdles: dedicated space for LEV riding / battery standardisation
- Lack of universal battery specifications across manufacturers
- Seasonal variations in user demand: need a robust real-time inventory management and logistics solutions
- Regulation in the e-microscooter sector
- Training for staff and users to ensure smooth operation and maintenance
- Need standard operating procedures, enforced across all stages of deployment

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Guidelines on charging technologies – 3

Charging points on lampposts (2 sites in Grenoble area)

- Needed political support
- The state of the public lighting network is a key factor (old / needs a 24h power supply)
- Can be more expensive than might appear, especially with older infrastructure; Need to deal with different agencies; Long preparatory work
- Several suppliers now provide charging on lampposts, but this is more common for new lighting infrastructure. Retrofitting legacy equipment is more of a challenge

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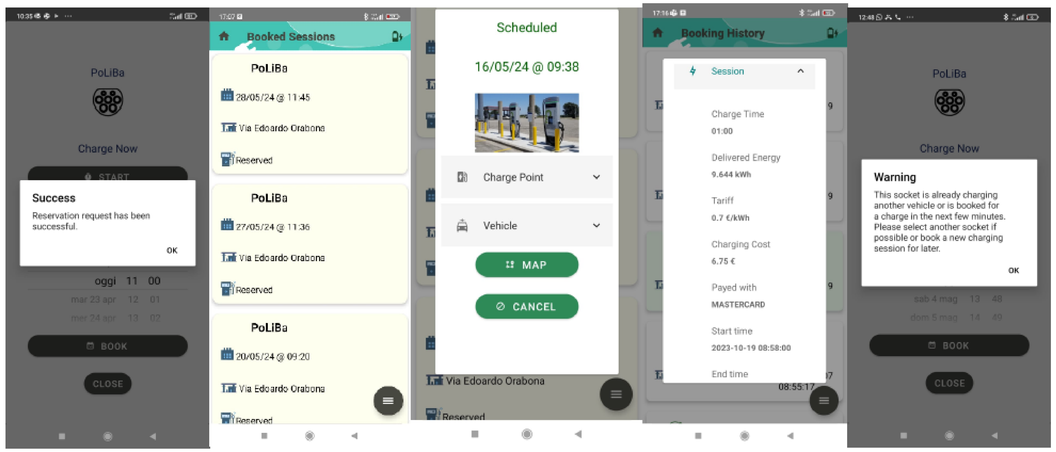
Guidelines on charging services

Plug and Charge (PnC) – ISO-15118-2 (5 locations in Europe)

- Needs cross-company collaboration (interoperability and E2E testing, fault analysis)
- CPOs need time to get technical requirements and the ecosystem set up; Lack of stations or vehicles supporting ISO15118
- Need to invest in internal testing tools and capabilities. PnC actors should have a dedicated expert in ISO and its ecosystem, to negotiate ISO15118



Enhanced booking service for charge points

(2 locations in Europe)

- Complex in terms of:
  - charge point occupancy
  - notifications to users (SMS if app notifications are turned off)
  - many charging points not available for reservation

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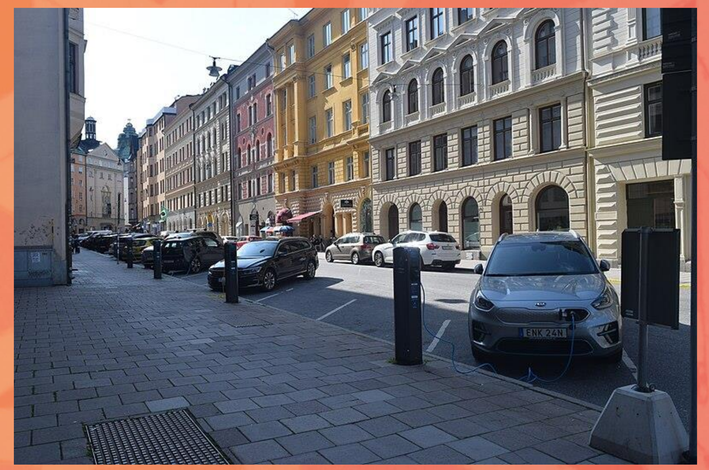
Identified gaps and recommendations for authorities

Planning recommendations

1. Design guidance should include design for specific zones like heritage areas
2. Location of the charger relative to the parking space should consider that the charging socket can be in different places on the car
3. Clearer differentiation in regulations between public street charging and off-street
4. More focus on fast charging infrastructure and off-street / at-home slow charging. Avoid encouraging EV drivers into city centres just for better charging infrastructure
5. CPs should be placed where there is a good mobile phone signal and/or free Wi-Fi



Identified gaps and recommendations for authorities

Operational recommendations

1. Permit/ licensing system for CPOs to ensure even and fair cover of charging infrastructure, including in areas of lower demand
2. CPOs should share data through a city-wide or (better) national data platform; local authorities need to specify this in tenders
3. Future integration with public transport and Mobility as a Service (MaaS)
4. Dynamic information on availability, price and accessibility: comprehensive and reliable

Identified gaps and recommendations for authorities

Pricing, payment, parking and enforcement recommendations

1. Transparency of pricing, including for combined charging and parking where applicable, needs to be regulated by consumer law
2. Allow bank card (credit/debit) payment, with no difference in price between payment by this means and using a CPO account (AFIR non-discriminatory pricing clause)
3. Where parking is paid for, pricing should normally be the same as for ICE vehicles
4. Regulations to ensure EVs are plugged in and charging; avoiding occupying space longer than necessary

THANK YOU!

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Andrew Winder

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a.winder@mail.ertico.com

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