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**IKEM**

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# European Charging Infrastructure and Gender Equality

A literature-based overview for User-Chi (H2020-project)

# Agenda

1. Introduction and Overview
2. Results  
conducted from the literature research
3. Approaches and recommendations  
in conjunction with the User-Chi project
4. Outlook and Questions

# Introduction of the User-Chi project

## „Innovative solutions for USER- centric Charging Infrastructure“



- Co-creation of smart solutions around the Mediterranean and Scandinavian Trans European Network corridor (TEN-T)
- Funded by European Union's Horizon 2020 research and innovation programme
- Timeline: 2020-2024
- currently: start of the demonstration phase

# Introduction of the User-Chi project



## Motivation for this paper

- Objectives: designing electric charging networks around user needs; deploying an interoperability framework and platform; offering legal and regulatory recommendations for a massive deployment of electric vehicles
- Testing of 8 products providing more user-friendly solutions for charging infrastructure
- The need for further information to recognise gender bias throughout the implementation process across the city partners and product leaders

# Results conducted from literature research



- Main inequalities documented in the EU Gender Equality Strategy 2020-2025
  - Such as: gender based violence, gender stereotypes, gender pay gap, gender care gap, gender imbalances in decision-making processes in politics
- Concept of gender inequality mirrored in city and especially infrastructural planning
  - ➔ may be framed as gender bias in infrastructure encompassing **prejudiced actions based on the gender-based perception that women are not equal to men in rights and dignity**
- Sparsely amount of research concerning gender equality in electric charging infrastructure but noteworthy amount in regards to general infrastructure
  - ➔ approach: **transfer performance of current findings to relatively untouched topic of ECI**

# Results conducted from literature research

Source: Paper „Electric charging infrastructure and gender equality – a literature-based overview for User-Chi (H2020 project)“



## Mobility patterns

- Men displaying longer, more linear travel patterns whilst women often travel shorter distances with more complex travel chains
- Different mobility patterns directly interacting with the concept mobility of care



## Financial aspects

- Women are less likely to own private electric vehicles by 27.4 % compared to 72.6 % probability of men earning private electric vehicles
- Reasons: gender-pay gap, employment in part-time jobs, restricted employment catchment area



## Security aspects

- Risk of injuries
- Risk of sexual harassment leading to development of safety mechanisms restricting women from travelling or choosing more extended but safer routes

# Approaches and recommendations in conjunction with the User-Chi project

## Planning

CLICK: Planning tool provides recommendations of position, amount and technology for municipalities

Possible ways to recognize Gender Equality:

- Inclusion of gender-sensitive data regarding *mobility of care*
- Inclusion of criteria of neighborhoods regarding *financial aspects*
- Highlighting locations, that follow *specific needs or habits*
- Recommending fast-charging stations regarding *rapid mobility patterns*



**CLICK**

„Charging infrastructure Location  
Concept development Kit“



# Approaches and recommendations in conjunction with the User-Chi project

## Design

INSOC: Integrated Solar DC Charging for Light Electric Vehicles

INDUCAR: Inductive Charging for e-CARs

Recognized Gender Equality aspects:

- Transport modes (cycling) regarding *mobility of care & local mobility*
- Inclusive design like *roofed, spacious charging point*, possible to add e.g., *storage areas, children sitting areas, parking area for cargo bikes*
- Highlighting locations, that follow *specific needs or habits*
- Wireless charging as *time efficient solution with higher safety*



**INSOC**



**INDUCAR**

# Approaches and recommendations in conjunction with the User-Chi project

## Framework

The handbook includes guidelines and recommendations to design the perfect user-centric charging station.

Potential to recognize Gender Equality:

- To combine all beforementioned aspects
- To raise awareness
- To give a guidance for public or private financing
- To promote special tariffs, business models



## Station of the Future Handbook

# Conclusion

„ It remains to be said, however, that the current approach to planning and implementing charging infrastructure projects **is largely oriented towards the status quo** and as a result carries the existing gender bias in the field of general infrastructure on to new fields such as charging infrastructure.

It can be assumed that in future projects of planning and implementation of charging infrastructure projects, **criteria leading to an adjustment of gender inequality will be increasingly included.**“

# Outlook



## Questions?



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# Thank you for your attention!

In case you like to be notified upon the publication of our paper:  
Please contact us!



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