

A FLEXIBLE LOCATION PLANNING METHODOLOGY FOR EV CHARGING INFRASTRUCTURE



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eCharge4Drivers in a Nutshell

<https://echarge4drivers.eu/>

Call identifier: H2020-LC-GV-2018-2019-2020

Topic: GV-10-2017 “Demonstration (pilots) for integration of electrified L-category vehicles in the urban transport system”

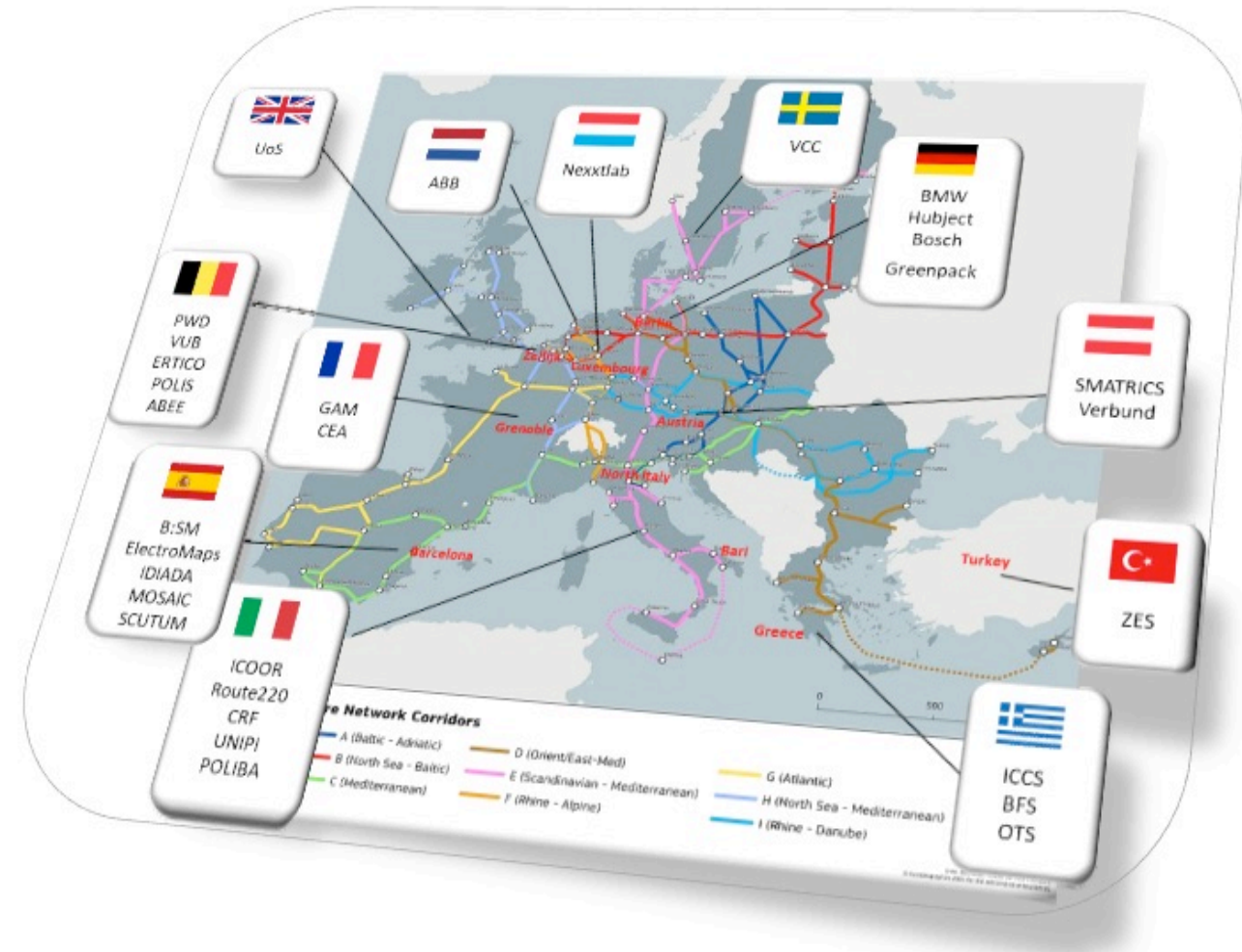
EC funding: 14,424,526.39 €

Duration: June 2020 – May 2024

12 countries - 31 Partners – 10 demonstration areas

SCOPE:

eCharge4Drivers aims to improve the Electric-Vehicle charging experience in urban areas and on interurban corridors towards promoting e-mobility concept and making it more convenient for users to go green by developing and designing user-centric and interoperable charging solutions.



Strategic objectives



O-1: Understand the user needs so that the project charging solutions and services substantially **improve the user charging experience**

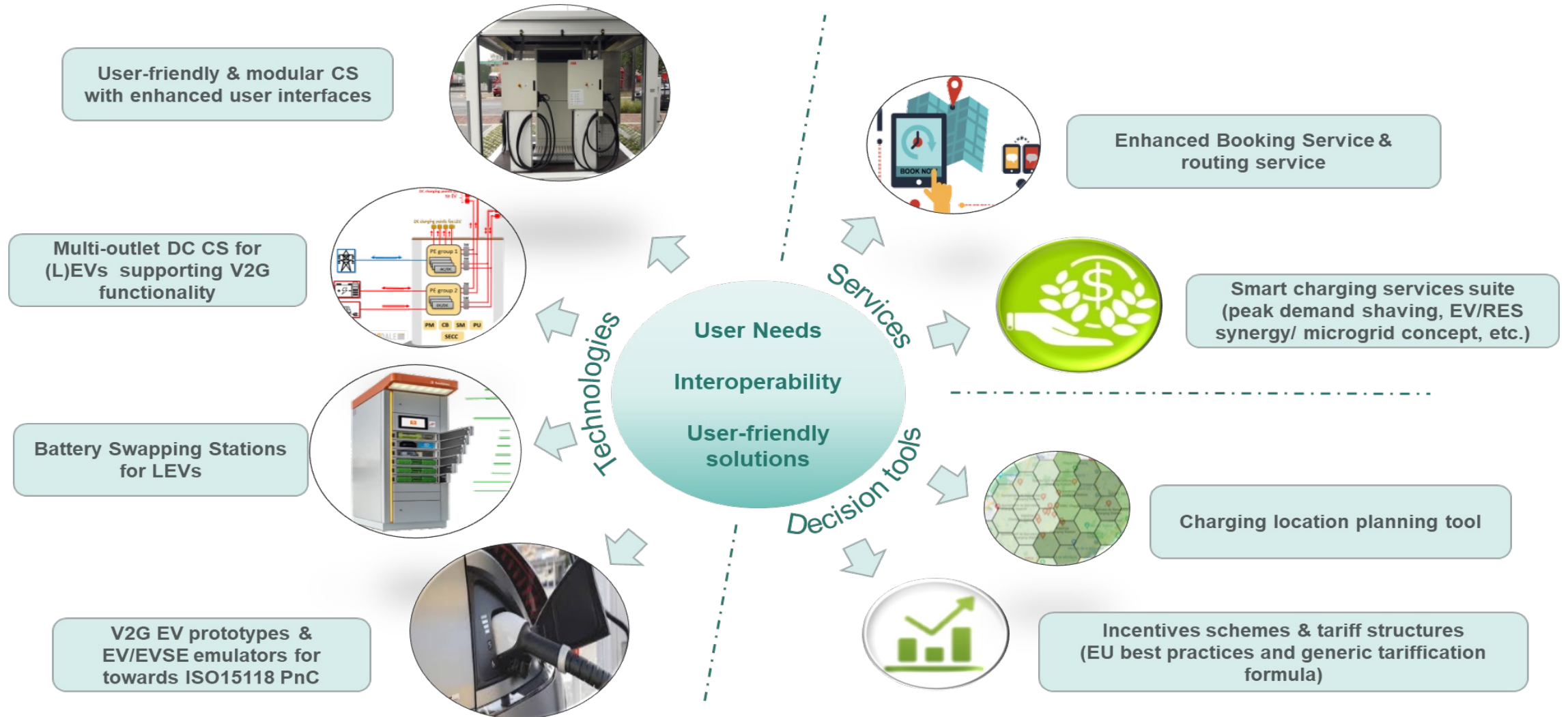
O-2: Develop and demonstrate **user-friendly and cost-efficient charging stations** for passenger vehicles and LEVs

O-3: Design and **demonstrate charging services and systems** serving diverse objectives and unlocking several business opportunities

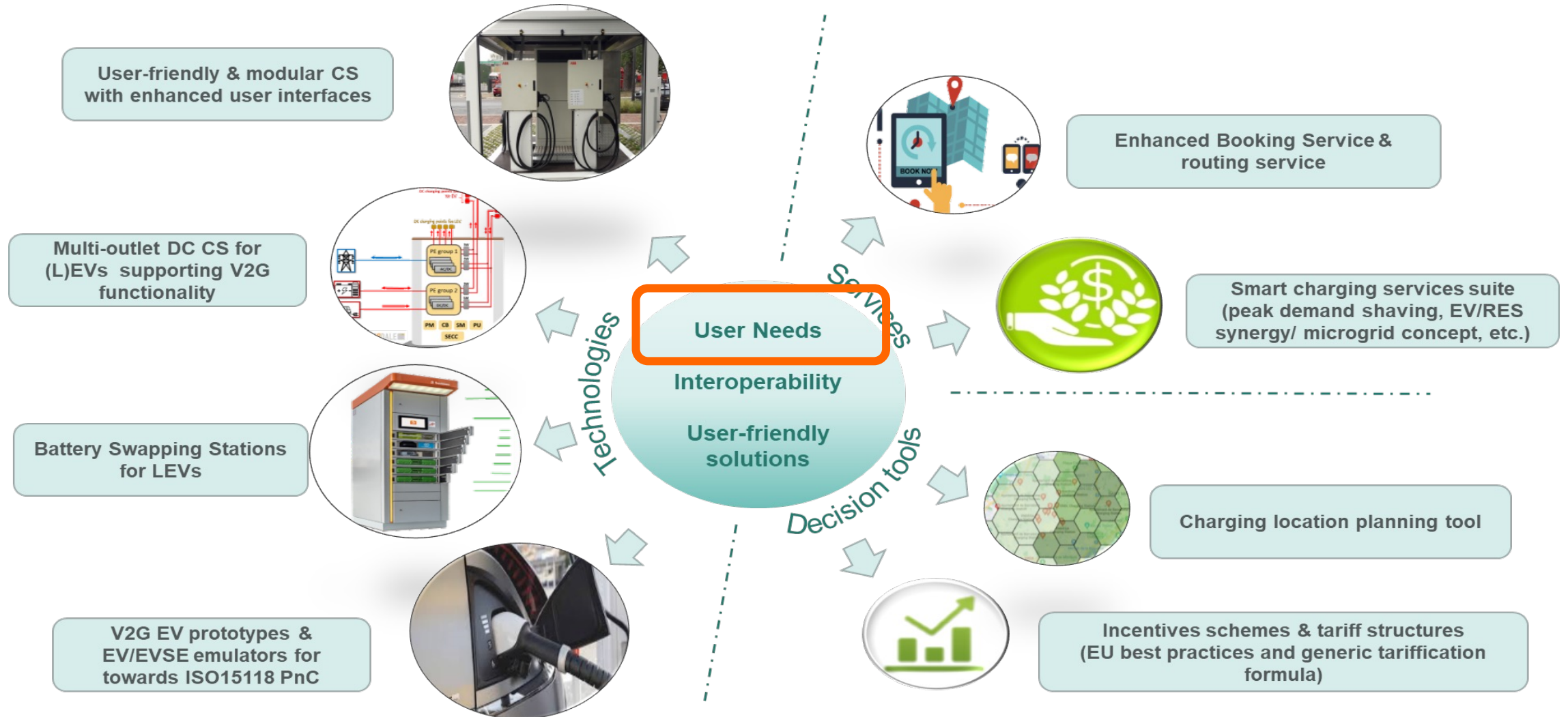
O-4: Enable and demonstrate **interoperability of end-to-end communication** and provision of **enhanced information to the EV users**, before, during and after a charging session

O-5: **Propose mechanisms to accelerate the deployment** of charging infrastructure and other charging services in a sustainable and user-centric way (CP location planning tool, tariff/incentive schemes)

eC4D technologies & services

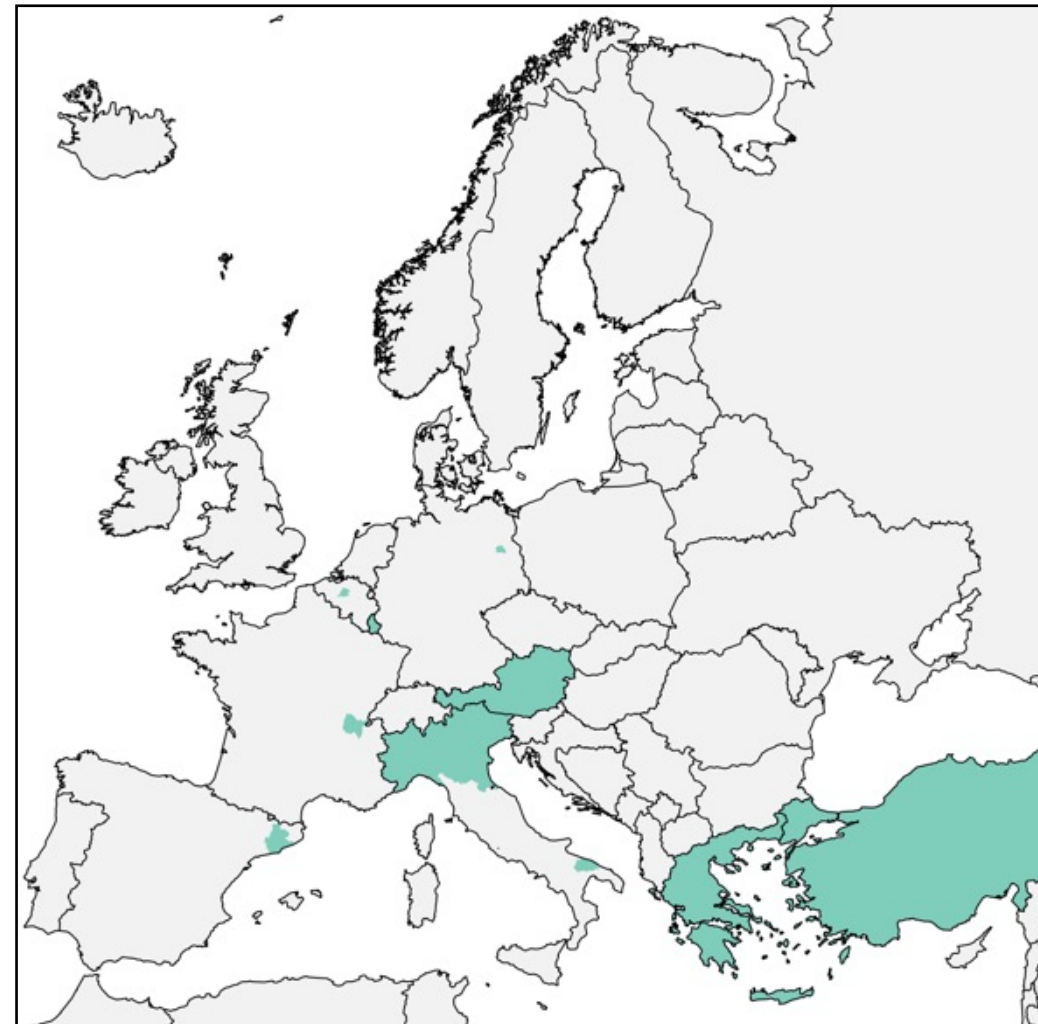


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LARGE-SCALE SURVEY ON CHARGING BEHAVIOUR

- EV users, LEV users and non-EV users
- Austria, Barcelona, Bari, Berlin, Grenoble, Greece, Luxemburg, Northern Italy, Turkey, Zellik
- Q4 2020 – Q12021
- 2.966 valid responses (reach 4.703)



QUALITY OF EXPERIENCE PUBLIC CHARGING INFRASTRUCTURE

- Charging Infrastructure Satisfaction-diagnostic
- eMSP/CPO scores: on average 5,5 out of 7 (= 8/10)

Tangability
System Availability
Reliability
Privacy
<i>Responsiveness</i>
<i>Contact</i>
<i>Compensation</i>
Perceived Value
Loyalty
Customer Satisfaction

TAKE-AWAYS OF THE SURVEY

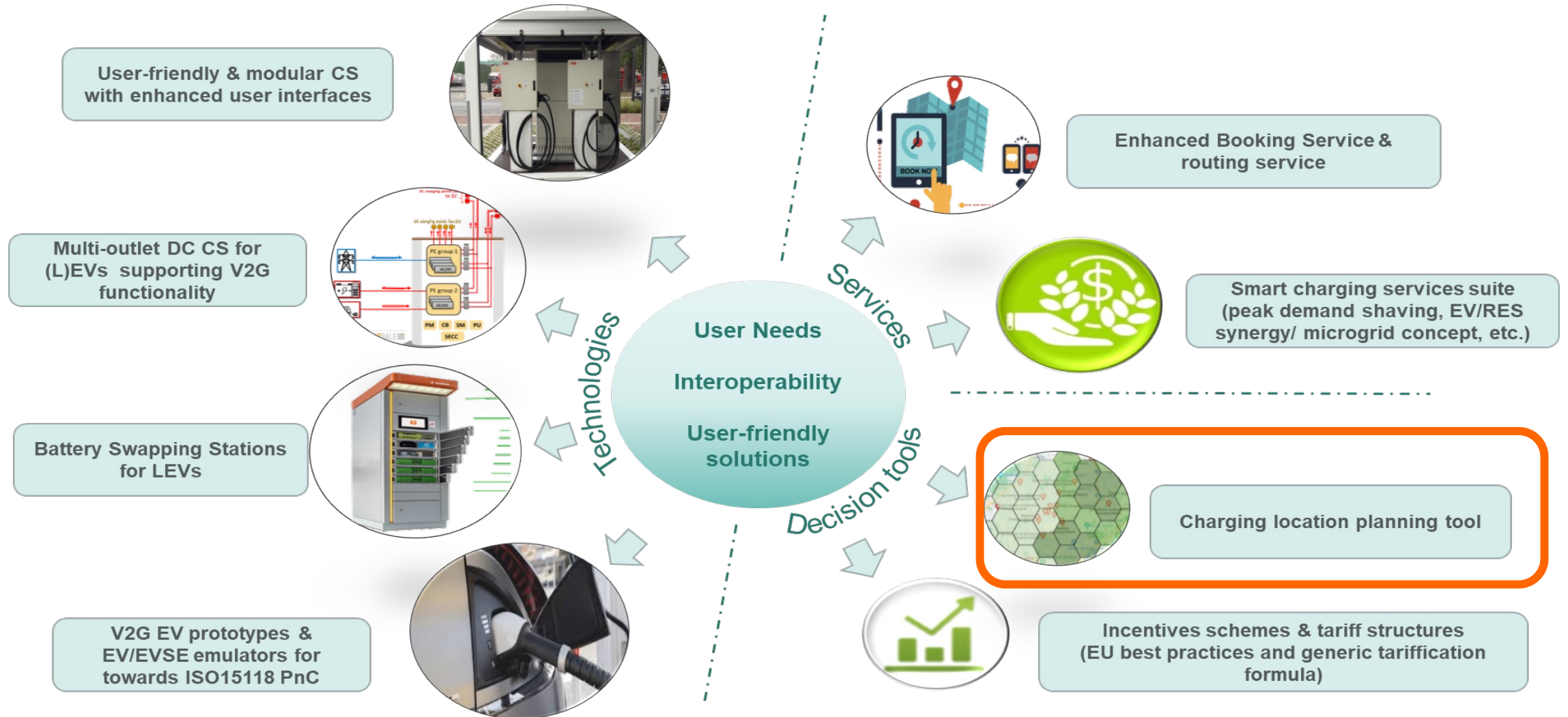
> Ideal charging session features:

- a charging pass that works immediately
- short connection and waiting time

> 70-90% EV drivers have currently access to private charging point – how to plan for future roll-out of public infrastructure?



eC4D technologies & services



LOCATION PLANNING TOOL

KEY POINTS

- **Objective**

- support municipalities/regions without powerful tools or competencies in formulating charging infrastructure deployment plans

- **Main target users**

- Decision makers: municipalities, regions, transport/energy authorities, CPO's, eMSP's,...

- **Main functions**

- integrated a demand and location model
- a user-friendly webtool

- **Focus**

- public charging
- private cars

LOCATION PLANNING TOOL

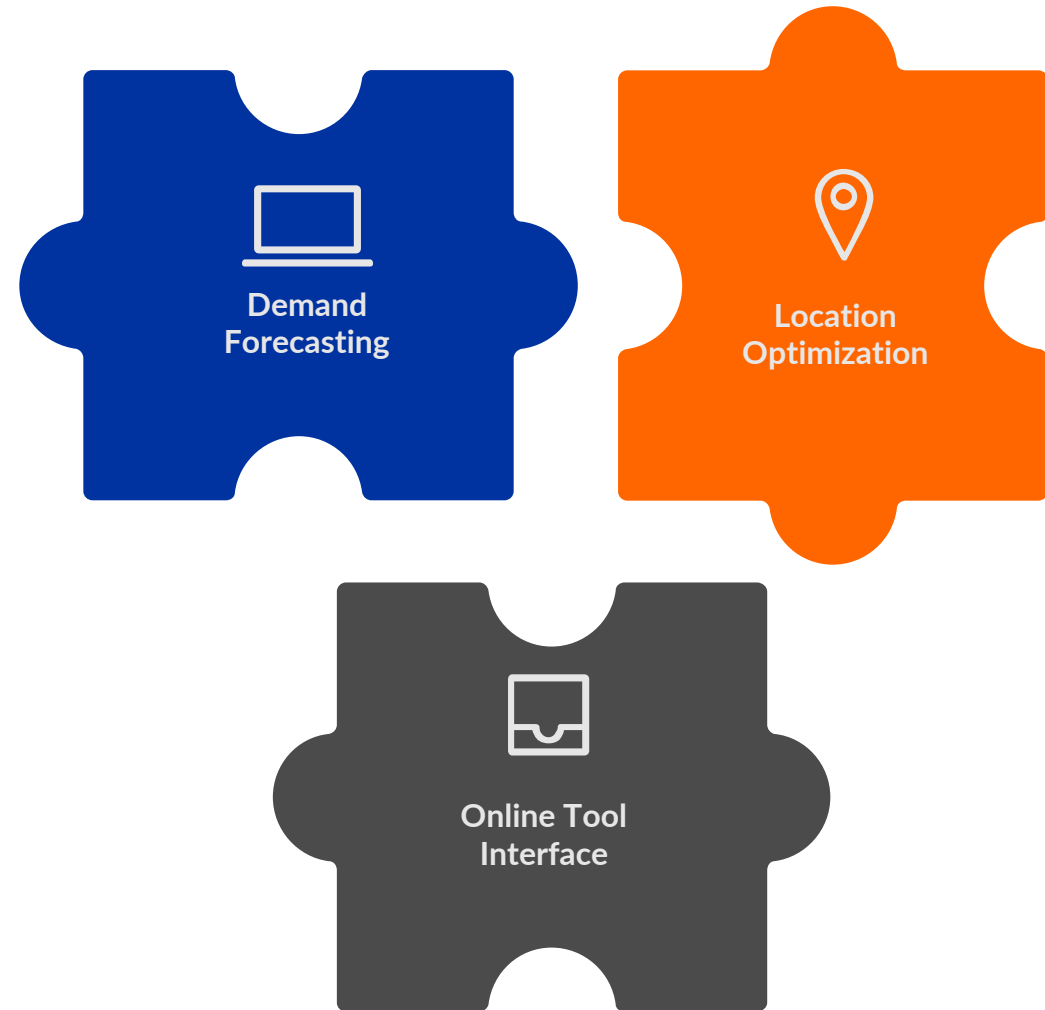
USER REQUIREMENTS

based on interviews and workshops
with future users

- **User-friendly**
 - easy to use and to interpret, user-friendly online GUI
- **Generally applicable**
 - use of generally available data – usually through local/regional geo-information platforms
 - if available – takes into account current charging infrastructure usage
 - tailored to user with input parameters
- **Outcomes**
 - strategic planning insights on the level of zones
 - exact positions to be determined in consultation with all relevant stakeholders
- **Validated in the project**
 - on the pilot sites of Luxembourg, Barcelona, Northern-Italy

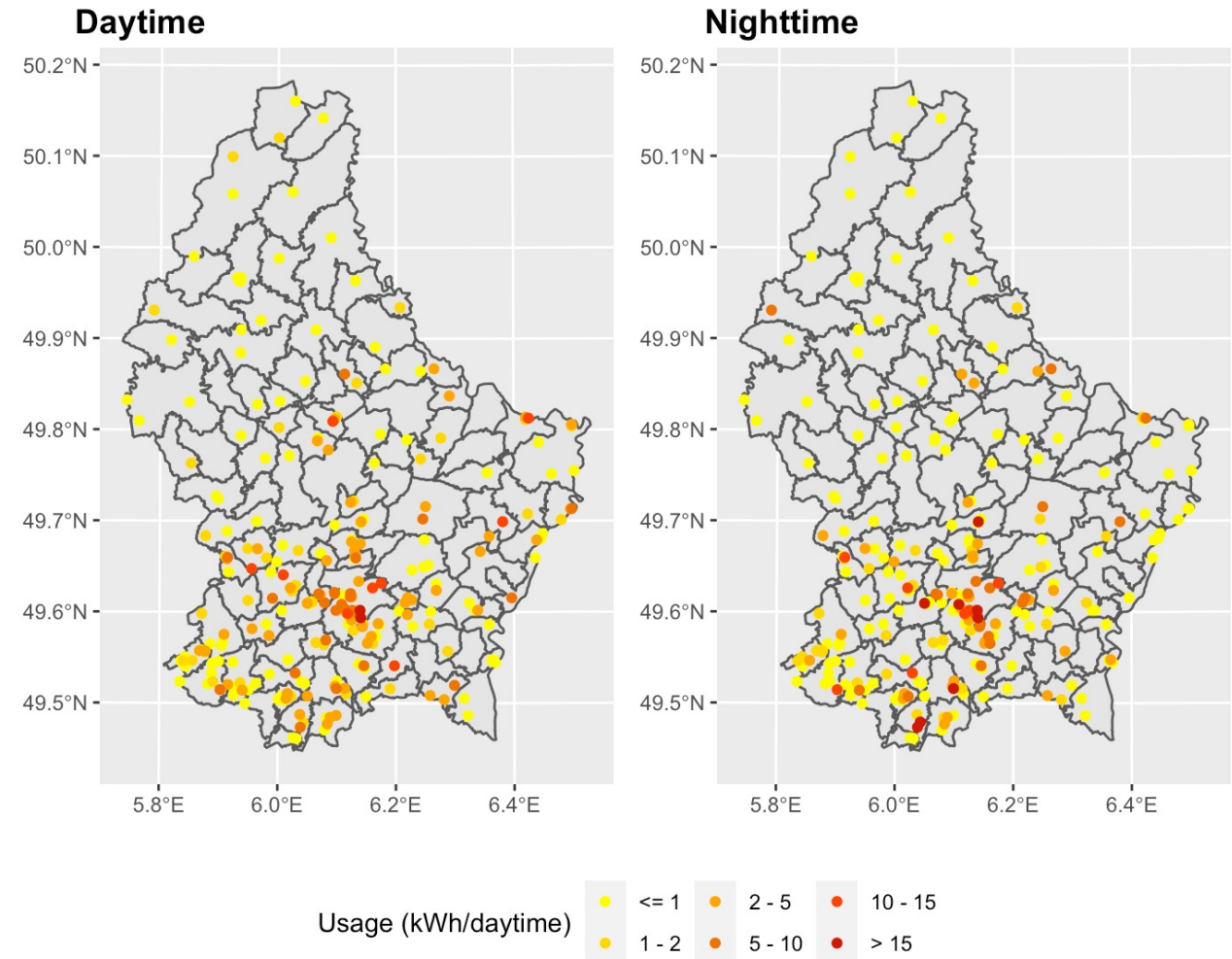
Charging Location Planning Tool:

3 modules



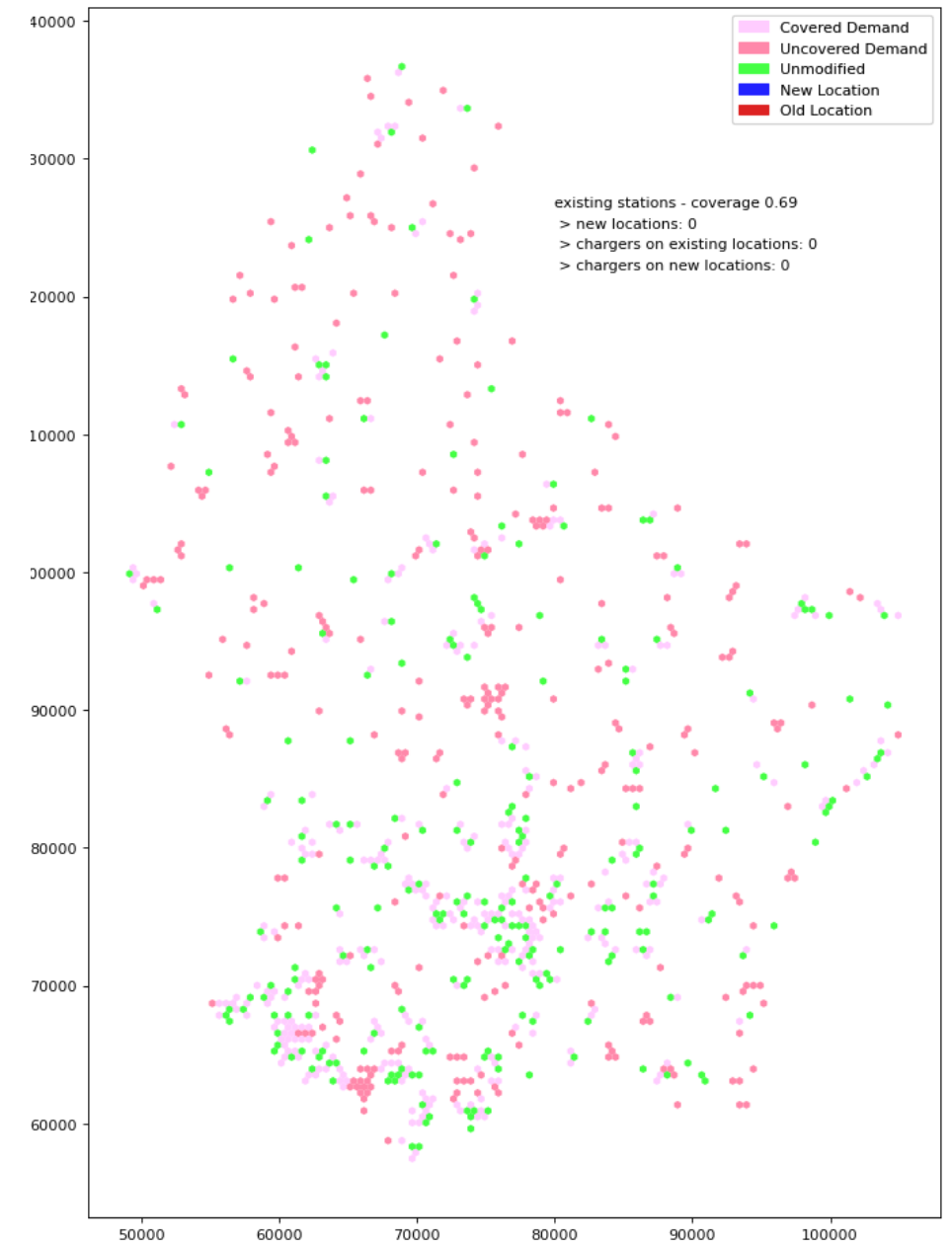
DEMAND FORECASTING MODULE

- > Demand forecasting based on generally available geo-information and socio-demographic data and (if available) charging data
- > Predictive modelling approaches for zones (hexagons)
- > Normal / Fast charging
- > Day / Night




LOCATION OPTIMISATION MODULE

- > based on the demand forecasting model output
- > takes into account – if applicable – existing and planned charging infrastructure and/or candidate locations
- > maximizes overall service level



ONLINE TOOL INTERFACE





LOCATION PLANNING TOOL

Welcome to the location planning tool!

I am XX and I will guide you through the app.



First we will analyse the demand in your zone and later we will recommend you the best places to locate the charging points.

Could you please tell me the area you want to work with?



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ONLINE TOOL INTERFACE



LOCATION PLANNING TOOL

8

Expected budget

euros

OR


Number of Type 2 charging points

Number of Fast charging points

9

Period of time

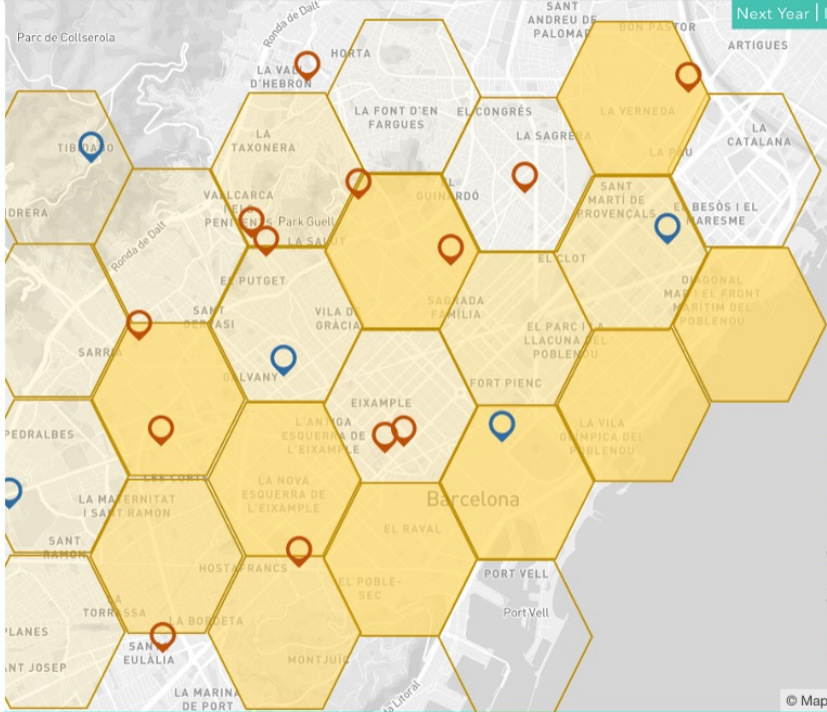
years








You can exclude zones by clicking "Edit" on the map

Continue



Next Year | In 2 Years | In 5 Years | In 10 Years



Edit



-  Current
-  Planned
-  Demand
-  Recommended
-  Added

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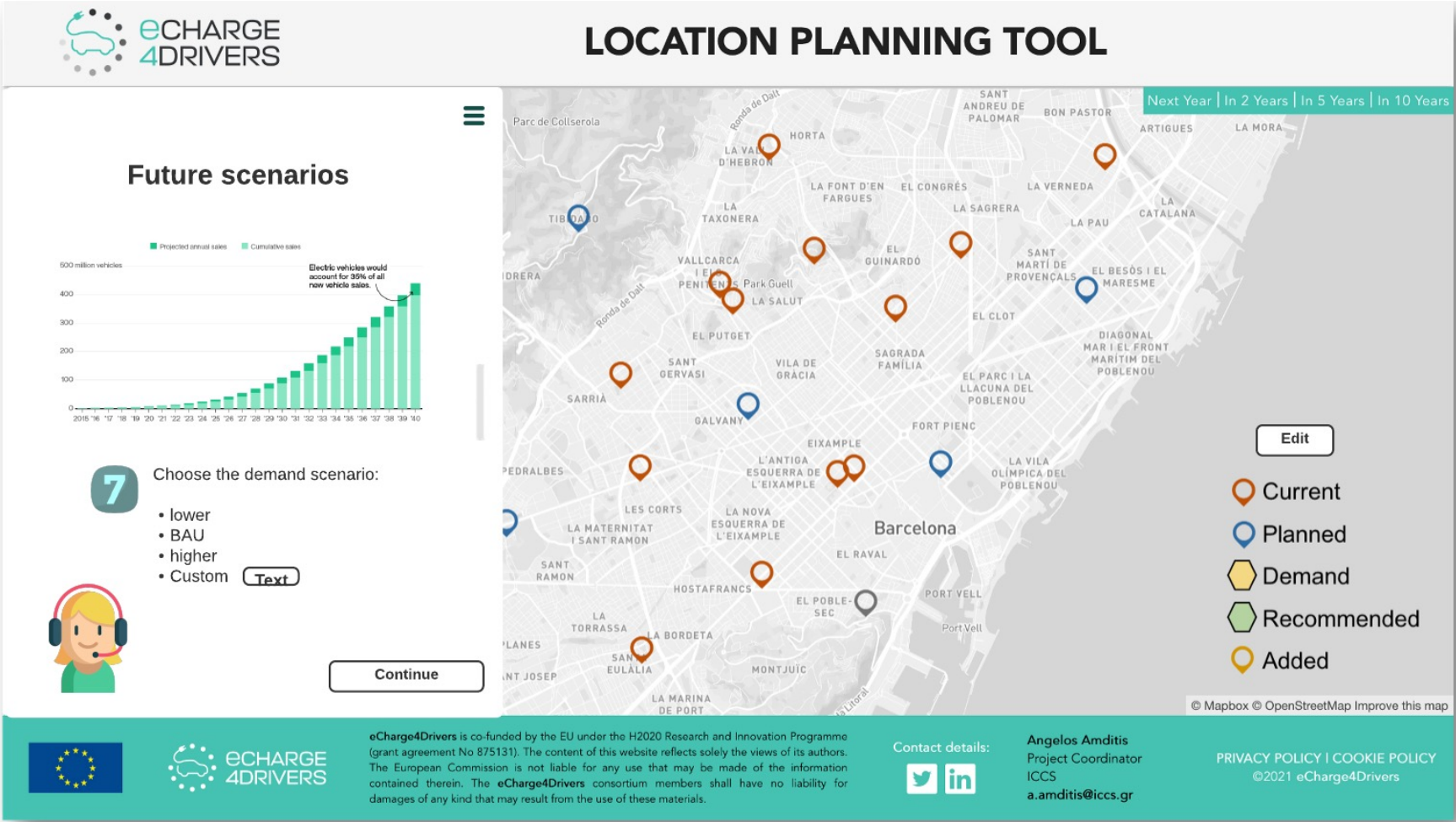


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THANK YOU!

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