greencharge2020.eu

*GreenCharge Project Deliverable:* D8.2

# Dissemination and Exploitation Plan (V1)

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# About GreenCharge

**GreenCharge takes us a few important steps closer to achieving one of the dreams of modern cities: a zero-emission transport system based on electric vehicles running on green energy, with traffic jams and parking problems becoming things of the past.** The project promotes:

| | |
|---|---|
| *Power to the people!* | The GreenCharge dream can only be achieved if people feel confident that they can access charging infrastructure as and when they need it. So GreenCharge is developing a smart charging system that lets people book charging in advance, so that they can easily access the power they need. |
| *The delicate balance of power* | If lots of people try to charge their vehicles around the same time (e.g. on returning home from work), public electricity suppliers may struggle to cope with the peaks in demand. So we are developing software for automatic energy management in local areas to balance demand with available supplies. This balancing act combines public supplies and locally produced reusable energy, using local storage as a buffer and staggering the times at which vehicles get charged. |
| *Getting the financial incentives right* | Electric motors may make the wheels go round, but money makes the world go round. So we are devising and testing business models that encourage use of electric vehicles and sharing of energy resources, allowing all those involved to cooperate in an economically viable way. |
| *Showing how it works in practice* | GreenCharge is testing all of these innovations in practical trials in Barcelona, Bremen and Oslo. Together, these trials cover a wide variety of factors: *vehicle type* (scooters, cars, buses), *ownership model* (private, shared individual use, public transport), *charging locations* (private residences, workplaces, public spaces, transport hubs), energy *management* (using solar power, load balancing at one charging station or within a neighbourhood, battery swapping), and *charging support* (booking, priority charging). |

To help cities and municipalities make the transition to zero emission/sustainable mobility, the project is producing three main sets of results: (1) *innovative business models*; (2) *technological support;* and (3) *guidelines* for cost efficient and successful deployment and operation of charging infrastructure for Electric Vehicles (EVs).

The *innovative business models* are inspired by ideas from the sharing economy, meaning they will show how to use and share the excess capacity of private renewable energy sources (RES), private charging facilities and the batteries of parked EVs in ways that benefit all involved, financially and otherwise.

The *technological support* will coordinate the power demand of charging with other local demand and local RES, leveraging load flexibility and storage capacity of local stationary batteries and parked EVs. It will also provide user friendly charge planning, booking and billing services for EV users. This will reduce the need for grid investments, address range/charge anxiety and enable sharing of already existing charging facilities for EV fleets.

The *guidelines* will integrate the experience from the trials and simulations and provide advice on localisation of charging points, grid investment reductions, and policy and public communication measures for accelerating uptake of electromobility.

# For more information

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## Executive Summary

This deliverable describes the action plan regarding dissemination and exploitation of GreenCharge results, innovations and concepts, together with progress on communications activities.

The dissemination and exploitation strategy is largely based on what was described in the proposal and GA, but with some refinements arising from business model work. It is based on use of an IPR registry, and a clear distinction between dissemination, exploitation and communication. Value chains and innovation types are used as a way to structure the plan. Current work makes use of an uptake cities group and local reference groups to ensure coverage of stakeholder requirements.

A list of the project's KERs (Key Exploitable Results) is provided. It is organised according to the five main result types of the project. For results of a technological nature, target TRLs are also shown, based on an approximate schedule. Further information on the KERs, including IPR information and KER-specific exploitation plans is provided in separate, confidential documentation.

There have been extensive communication activities in the project, including establishment of an active website with sections targeted at different groups, use of social media and production of regular newsletters. The deliverable provides information on the way in which these have been used up to this stage in the project.

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## List of Abbreviations

**Table 1: List of abbreviations**

| Abbreviation | Explanation |
|---|---|
| CA | Consortium Agreement |
| DoA | Description of Action (i.e. the formal project plan, as defined in the GA) |
| ESN | Energy Smart Neighbourhood |
| EV | Electric Vehicle |
| GA | Grant Agreement (i.e. the contract defining the work to be done) |
| IPR | Intellectual Property Rights |
| KER | Key exploitable result |
| SUMP | Sustainable Urban Mobility Plan |
| V2G | Vehicle-to-Grid |

# 1 Introduction

## 1.1 Intended audience

This deliverable is aimed at three main audiences:

1. Consortium members.
2. Commission services and independent reviewers of the project.
3. Other external organisations and projects, especially those with an interest in EV charging, renewable energy, smart grids, smart neighbourhoods, smart mobility, smart cities or car-sharing.

The primary audience is (1) and (2), but as a public deliverable its contents can also be made available to others.

## 1.2 Why would I want to read this deliverable?

The role of the deliverable depends on the audience:

1. *All audiences.*
   - Provide a status report on communication activities and dissemination materials produced so far in the project and planned for the future. This information can be used to gain insights into what has been achieved in the project, and what can be expected in future.
2. *Consortium members.*
   - Provide an outline of the overall dissemination & exploitation strategy including relevant mechanisms and strategies for dissemination and exploitation are identified. This will act as a reference point for consortium members;
   - Provide inputs to discussions on any updates needed in D8.1 (Communication strategy & plan).
3. *Commission services and independent reviewers of the project.*
   - Provide formal reporting on status of dissemination, exploitation and communications activities in the project;
   - Provide evidence of concrete and realistic plans for long-term exploitation of results.
4. *Other external organisations and project.*
   - To help identify whether there is potential for cooperation with GreenCharge partners, during or after the project.

## 1.3 Relationship to other documents

### 1.3.1 Project Deliverables

This deliverable is based on inputs from the follow deliverables:

- *D1.1 Data management plan:* this deliverable describes the internal procedures for dealing with the collection and handling of data from the pilots in order to make them as open research data, including the necessary permissions for handling private data, and the necessary forms of informed consent and documentation of technical solutions for secure data storage. This data has been used as input for the confidential deliverable only (dev 8.2 CON).

- *D3.1 Stakeholder Analysis*: this document presents the results of the stakeholder analysis, identifying the concerns and needs from all stakeholders relevant for GreenCharge.
  Based on the outcomes of the Stakeholder Analysis, targeted dissemination and exploitation strategies and plans will be developed and implemented. An engagement strategy will also be developed so that the most important stakeholders identified will be able to actively follow the project activities and results. These important stakeholders will also have the opportunity to advice on the project development and the exploitation of the results.

- *D8.1 Communication Strategy and Plan*: Defines target audiences and the key messages for/type of engagement needed with each group. Defines different channels and mechanisms to be used for communication. Will be continuously refined during the project.
Several communication channels and mechanisms identified in the Communication Strategy and Plan will also be used for dissemination purposes. The Dissemination and Exploitation Plan will also give an update on the planned and already completed communication activities.

This deliverable provides the first version of the Dissemination and Exploitation. A revised and extended version will be provided towards the end of the project:

- *D8.3 Dissemination and Exploitation Plan (V2)*: Describes updated and confirmed plans for the dissemination and exploitation of results and the completed and planned communication activities.

### 1.3.2 Confidential Documentation on KERs (Key Exploitable Results)

By its nature, for commercially exploitable results at least, information about exploitation can in some cases contain information that partners wish to keep confidential for competitive or other reasons.  Thus, separate, confidential documentation has been produced. Its purpose is to gather all exploitation-related information for each KER, consisting of:

1. A <u>description</u> of each KER – explaining what it consists of, potential users/market, what benefits it offers and which project deliverable(s) make up the result.
2. The <u>IPR Registry</u> data for the KER. The IPR Registry lists the owners of the KER, any limitations that may apply on project results (or background needed) for exploitation of the KER[1], and information of what (if any) IPR protection mechanisms are needed[2]. [It is a requirement from the DoA that the project should maintain this IPR Registry].
3. <u>Exploitation Planning</u> for the IPR, describing what type of exploitation is planned, the overall strategy, the means to be used to disseminate the results, goals and steps needed to bring about exploitation and an approximate schedule for achieving the goals.  For technical results where there is a potential for commercial exploitation, "goals" will include target TRLs (Technology Readiness Levels).

While this separate documentation may include some confidential information, major parts of it will not be confidential.  We nevertheless choose to class all of the documentation as "Confidential" because we consider it a major advantage to gather all information in one place and want partners to be able to free that they can include any kind of information without fear that its publication might be disadvantageous.  This documentation will be continually updated and refined as exploitation planning proceeds, so that it will always provide the latest plans for all KERs.  It therefore complements both formal deliverables on exploitation planning (D8.2 and D8.3).

The separate documentation can be made available to people or organisations who have a legitimate reason to see it.

## 1.4  Overall Status of Dissemination, Exploitation and Communication Planning

Work in the project in the period during which this document was produced was concerned mostly with

1. Planning trials at the pilot site;
2. Initial steps in realising the trials;

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[1] This may mean there are stipulations on what can be used, how it can be used, and conditions for use that may apply to any intellectual property in the project's results during or after the project by partners other than the owners. Restrictions can include the requirement to have to pay for usage (e.g. pay a licence) for use of the result, at normal commercial terms.

[2] There are a wide range of choices here e.g. "Open", "Industrial secret", "Patent", "Copyright", "Software Licence", "Open Source [with specific licence]", "Creative Commons Licence", "Lesser General Public License (LGPL)" "B2B Agreement".

3.  Establishing an overall communication strategy, establishing the GreenCharge "brand" and getting the project widely known.

There was not any major focus on dissemination and exploitation.  The Dissemination and Exploitation strategy described in this document is therefore to a large extent based on the principles and overall strategy defined in the project proposal and GA. However, there has been some progress on dissemination and exploitation, notably due to lessons learned from business models work. The plans here described are a "snapshot" of where we are today, and will evolve considerably in the next phase.

For communication activities, there has been a lot of activity during this period; see section 4.

## 2 Management of intellectual property rights

All dissemination in GreenCharge is in accordance with applicable IPR restrictions and in accordance with the H2020 GA and as defined in the project's CA.

Central to our approach is *maintenance of an IPR Directory.* This makes explicit, for each item of IP:

- The nature of the knowledge, and its perceived potential for exploitation.
- The owner(s). If there are multiple owners: the % ownership share of each.
- Access rights: an indication of who is entitled to use the item during/after the project, and on what terms.
- Measures required, or in place, to ensure protection of IPR for the item.

The IPR Directory is confidential: only consortium members have access to it.

The project is based on the following knowledge management principles:

- **Background Knowledge (i.e. pre-existing knowledge/know-how):** Agreed at the start of the project and registered in an IPR Directory.
- **Foreground Knowledge (i.e. new knowledge generated in the project):** Details of ownership and any IPR restrictions registered in IPR directory.
- **IPR Directory updates:** Workshops and other means used to regularly update and check the accuracy of the IPR directory, with full involvement of all partners.
- **Protected Dissemination:** Lightweight, effective processes will be used to ensure that results can be made available rapidly, but with due respect to any protection mechanisms that may be in place.

# 3 Exploitation, Dissemination and Communication

As defined in the H2020 programme, **dissemination** means *making project results available* to potential users, such as peers in the research field, industry, other commercial players and policymakers). **Exploitation** simply means *using* project results.  "Use" can include use for commercial purposes – but not necessarily so.  Project results can also be used in further research, in public policymaking – or many other ways. **Communication** is about telling other people about the project itself and its results, and potentially about listening to feedback from them.

The diagram below shows how there is interdependence between the dissemination and communication activities. The communication strategy aims to make targeted stakeholders aware of the GreenCharge project, its results and benefits, while the dissemination strategy aims to make the project results and knowledge available for the relevant stakeholders. These two strategies and their corresponding activities enable the project partners to make plans for how to bring about use of the project results. The expected impact of GreenCharge will be achieved by successful exploitation of the project results.
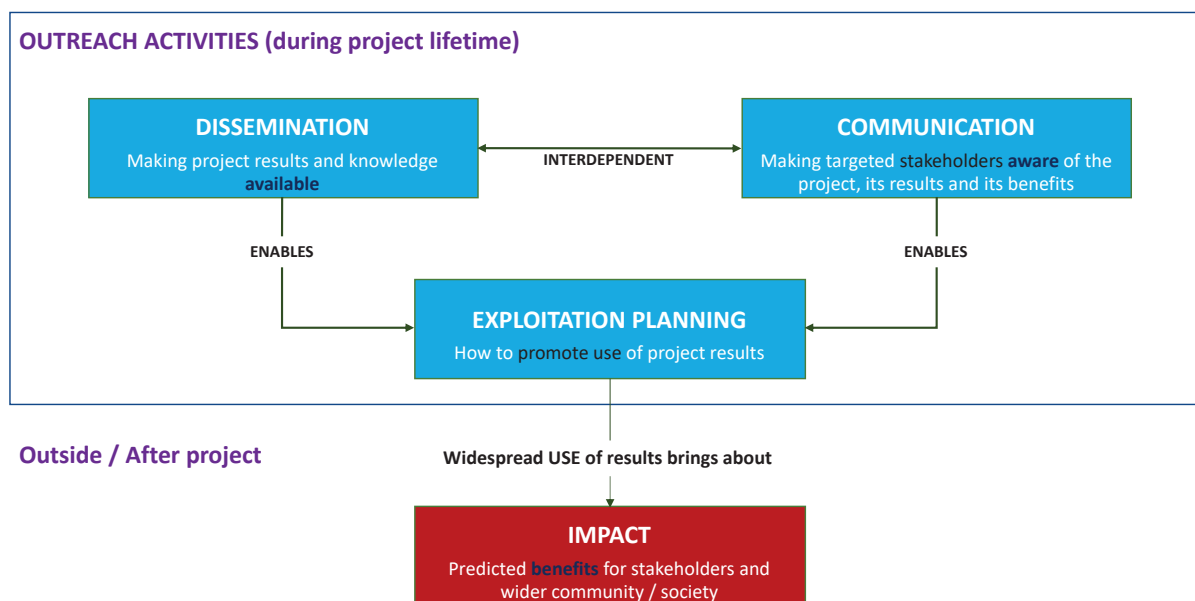


**Figure 1: Dissemination, communication and exploitation approach[3]**

The target groups that have been used to identify relevant exploitation and dissemination mechanism are based on the outcome of the Stakeholder Analysis (D3.1).

In D3.1 the most important stakeholders within and around the GreenCharge value chain and their position towards the system were identified in order to set up engagement strategies. It provides an overview of different stakeholder characteristics, stakeholder input and important relations between them.

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[3] Adapted from diagram appearing in project's GA.

**Figure 2: GreenCharge value chain**

*GreenCharge value chain*

To gain insight in stakeholders' perspectives, a targeted study has been conducted on the GreenCharge value chain. The GreenCharge value chain consists of th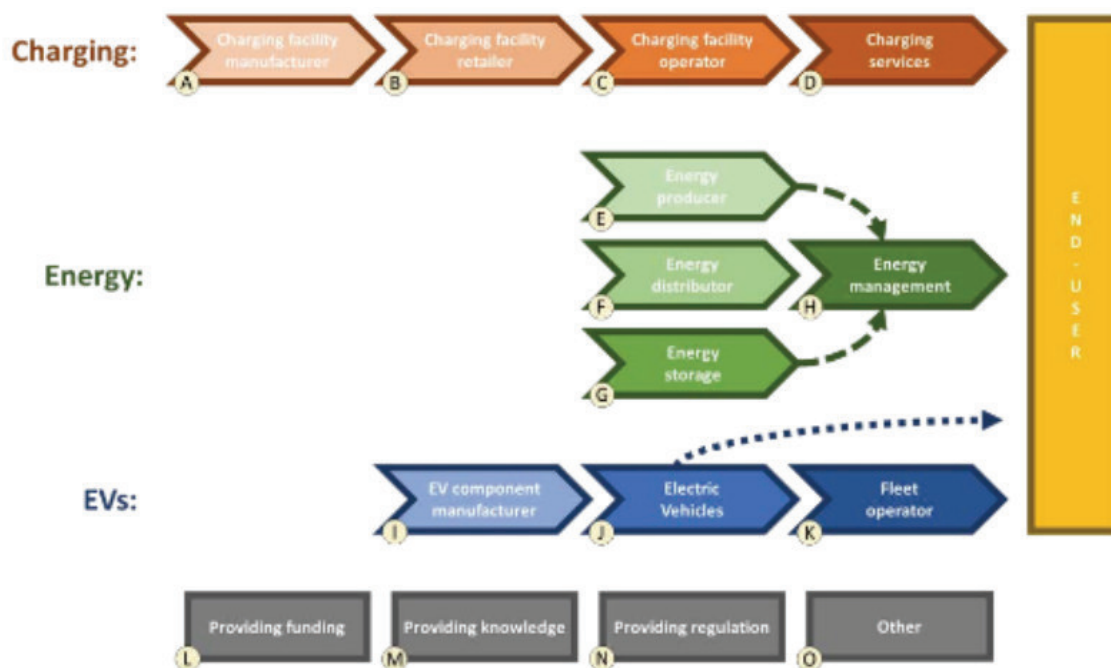ree 'primary value chains': Charging, Energy and EV. These primary value chains are supported by funding providers, knowledge providers, regulation providers, and other supporting roles. The stakeholder analysis enables GreenCharge to develop its platform in line with the opinions, needs and expertise of stakeholders in the value chains.

*Main conclusions*

The stakeholder analysis shows that:

➢ Stakeholders are familiar with energy production and smart charging concepts. However, levels of expertise differ between stakeholder roles.
➢ Stakeholders have positive attitudes towards the transition to local renewable energy production and smart charging.
➢ Stakeholders in the primary value chains are concerned with multi-actor provision, charging infrastructure utilisation, effective use of local renewable energy sources, and charging infrastructure investment. Supporting roles are most concerned about charging accessibility, integration, and fairness.
➢ Stakeholders indicate knowledge providers as the organisation they most often collaborate with. Organisations in the Charging value chain are the least cooperative organisations.
➢ There are no obstructers in the transition towards the transition to zero emission/sustainable mobility. The supporting roles are regarded sceptic observers, whereas the Charging value chain stakeholders are enthusiastic observers. Stakeholders in the Energy and EV value chain are key enablers in the transition. The statement that there are no obstructers should be further explored during the project because there may be external factors or actors that could form a barrier in the transition.
➢ There are various projects and organisations in and around the primary value chains which share interest with GreenCharge.

The approach to finding the most appropriate mechanism for dissemination and exploitation is to link stakeholder groups to the expected results of the project. Once the stakeholder groups have been targeted, it is possible to link specific mechanism to reaching the target groups.

## 3.1 Exploitation plan

### 3.1.1 Strategy

Section 2.2.1 of the DoA provides a draft plan for dissemination and exploitation of results, supported by sections 2.2.3 and 2.2.4 which define initial individual exploitation plans per partner. The plans are based on the project's *key exploitable results* (KERs) which are grouped in five categories (as defined in section 1.1 of the DoA, page 10). The results groups have short names of form R_xx for easy reference.

- Business Models (R_BM)
- Technology Prototypes (R_TP)
- Open Specifications of interfaces and protocols (R_OS)
- Evaluations and Lessons Learned from pilots and open research data (R_ELL)
- Recommendations and Deployment Guidelines (R_RD)

The table below shows all of the project's KERs (Key Exploitable Results) grouped according to these main result groups. Where appropriate (i.e. for technological results) target TRL levels are shown. More detailed information on each KER (including IPR information and the overall exploitation strategy) is provided separately, in the confidential documentation described in section 1.3.2.

**Table 2: KERs (Key Exploitable Results)**

| KER (Key Exploitable result) with Lead Partner in brackets | Description | Exploitation Schedule/ Target TRL[4] (where appropriate) | | |
|---|---|---|---|---|
| | | End of project | 2 years after | 5 years after |
| **R_TP: *Technology Prototypes*** | | | | |
| ESN Management Prototype (ESMART) | Tool to plan and balance energy availability, storage and consumption within a local area: an ESN – Energy Smart Neighbourhood | 7 | 8 | 9 |
| Charge Management prototype with booking (ZET) | Software system (App and backend software) | 7-8 | 9 | 9+ |
| Battery swapping management prototype (MOTIT) | Hardware and back-end software that takes account of inputs from the batteries that are connected to the charging station | 7 | 9 | 9 |

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[4] TRL = «Technology Readiness Level».

| KER (Key Exploitable result) with Lead Partner in brackets | Description | Exploitation Schedule/ Target TRL[4] (where appropriate) | | |
|---|---|---|---|---|
| | | End of project | 2 years after | 5 years after |
| Smart Charging station (ENCH) | A smart and connected charging station based on maximisation of the use of renewables for charging and Li-ion second life stationary battery. | 7 | 9 | 9 |
| Enhanced charging infrastructure prototype (PMC) | Intelligent, self-consumption optimized charging site prototype using high temperature second-life NaNiCl batteries combined with local photovoltaic and corporate power grid peering. | 6 | 7 | 9 |
| eRoaming platform protocol extensions (HUBJ) | Enable OICP for booking to improve smart charging usage and allow a better energy demand forecasting | 7 | 8 | 9 |
| Enhanced scooter sharing services (MOTIT) | Enhanced EV sharing services software that consider the driver's behaviour a key concept in the business for two of the main operational and environmental costs: energy consumption and fleet maintenance. | 7-8 | 9 | 9 |
| Enhanced connected scooter services (MOTIT) | Enhanced EV sharing services software that consider the driver's behaviour a key concept in the business for two of the main operational and environmental costs: energy consumption and fleet maintenance. | 7-8 | 9 | 9 |
| Enhanced EV sharing services (ZET) | Software system (App and backend software) | 7 | 9 | 9+ |
| EV fleet management prototype for e-bike sharing service (ATLAN) | IoT solution combining software and hardware to provide Fleet Management and Smart charging capabilities for LEV fleets. | 8 | 9 | 9+ |

| KER (Key Exploitable result) with Lead Partner in brackets | Description | Exploitation Schedule/ Target TRL[4] (where appropriate) | | |
|---|---|---|---|---|
| | | End of project | 2 years after | 5 years after |
| Enhanced SEM Scheduler (EUT) | The Smart Energy Management (SEM) Scheduler is the core component of the Smart Energy Management system. It is an optimizer that takes into account technical and economic constraints to produce the best schedule to switch on/off loads, to store surplus energy in batteries or to export it to the grid. It handles different type of devices, with special emphasis on EV charging processes. | 7 | 8 | 9 |
| Smart Energy Management Module (EUT) | The smart Energy Management module is a software component capable to control energy demand, supply and storage devices to fulfil preconfigured optimization criteria, | 7 | | 9+ |
| Simulator (SUN) | Simulator allowing simulation of the effects of using technologies and interventions used in GreenCharge, but at wider scale and potentially using other technologies than feasible in the pilots. Based on software developed in earlier CoSSMic project. | 7 | 7 | 7 |
| KPI Calculator and visualiser (SUN) | To calculate and evaluate the KPIs defined in the project and in the CIVITAS framework. | 7 | 7 | 7 |
| Distributed stochastic Optimizer (UiO) | A scalable distributed optimizer, specialized on energy distribution, but adaptable to other areas | 5 | 5 | 5 |
| **R_O**S: *Open Specifications* | | | | |
| Reference Architecture (SINTEF) | Document supporting the planning, specification and implementation of solutions and services for smart and green charging, by providing a common understanding of key concepts. | Final architecture | Used in follow-up research projects | Used in real procurement and deployment projects |

| KER (Key Exploitable result) with Lead Partner in brackets | Description | Exploitation Schedule/ Target TRL[4] (where appropriate) | | |
|---|---|---|---|---|
| | | End of project | 2 years after | 5 years after |
| Open specification for booking and roaming (HUBJ) | Document discribing the roaming of booking using the OICP protocol | Specification ready | Used in 10-20% of all CPO/EMP systems | Used in 50-70% of all CPO/EMP systems |
| **R_ELL:** *Evaluation Results and Lessons Learned* | | | | |
| Open Research Data with specifications (SINTEF) | Open research data are all data collected throughout the project that in an anonymised form is made publicly available. | All project related open data available through Zenodo | Used in follow-up research projects | |
| Lessons learned from pilots (OSLO) | The three pilots in Oslo, Bremen and Barcelona will serve as test beds for the technologies developed. Installed hardware and software will provide the environment for exploitation and data collected will serve as base for evaluation. | | | |
| **R_RD:** *Recommendations and Deployment Guidelines* | | | | |
| eMobility in SUMP (BREMEN) | Recommendations and Guidelines for uptake in urban planning. | Communication of best practice and lessons learned to enable uptake | Uptake in SUMPs of UCG | Uptake in urban planning of UCG |
| Simulation scenario (SUN) | These are simulation input and simulation results which allows for evaluation of GreenCharge KPIs which cannot be performed in concrete Pilots. These aim at providing a prediction of the impact that would be expected if some planned measures will be implemented (e.g. increase of EVs, or of CPs). | Recommendation about future plan. | Validation and support for decision making | |
| KPIs for eMobility and Evaluation indicators with calculation methods (SINTEF) | Key Performance Indicators and other evaluation indicators with detailed methods for calculation. | Comprehensive evaluation methodology | Used in follow-up research projects | |

| KER (Key Exploitable result) with Lead Partner in brackets | Description | Exploitation Schedule/ Target TRL[4] (where appropriate) | | |
|---|---|---|---|---|
| | | End of project | 2 years after | 5 years after |
| Evaluation results (SINTEF) | Evaluation results from pilots at three urban living laboratories involving all relevant stakeholders and demonstrating how charging infrastructure can be integrated with the electricity grid and renewable energy sources (also local sources) | Evaluation results | Results used for guiding large scale deployment | |
| R_BM: *Business Models* | | | | |
| Business Model Designs (PNO) | Marketplace canvas describing what value is delivered to which target customers, how this value is delivered and at what costs and revenues per demonstrator | Marketplace canvas | Canvas used in other projects | |

For these innovations, the expected users and the benefits which arise from using these results are identified. As these KERs are the predetermined expected results and several aspects (e.g. pilot activities) have changed during the first year of the project, these KERs need to be checked and, if needed, redefined before finalising the exploitation plan.

Figure 3 provides an overview of the innovation types addressed and the main relations between them. Profit model innovations are crucial for the success of the other innovation types. Product performance innovations (new functions and features in systems/system components and services) must support information exchange on business models. Product system innovation appears when different actors deploy systems and services that are integrated and work together. All the other innovations types will have impact on the service innovations.
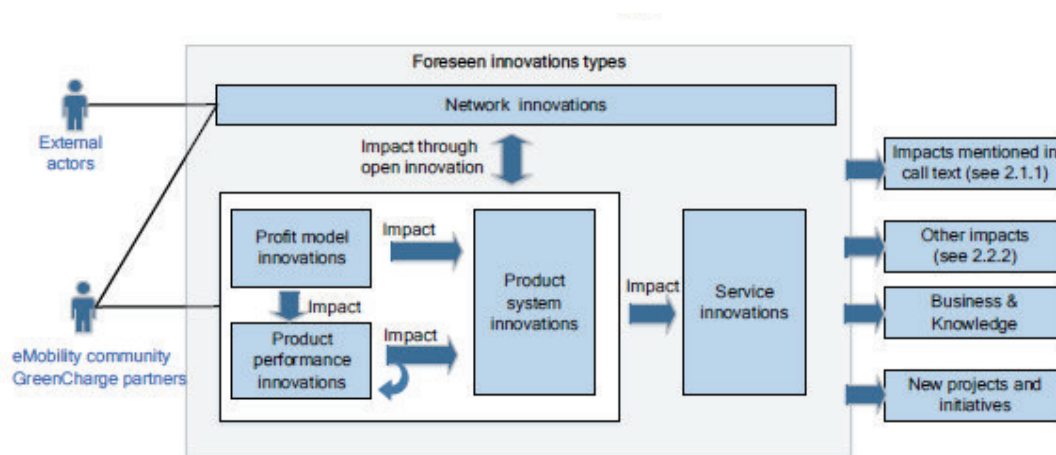
**Figure 3: Overview of innovation potential[5]**

The table below presents an initial overview of all the open exploitable results and shows the exploitation mechanisms currently identified.

**Table 3 Exploitation Mechanisms**

| Result | Exploitation mechanism |
|--------|------------------------|
| Technology prototypes | • Commercialisation |
| Open specifications | • Research papers, Research projects |
| Evaluation results and lessons learned from pilots | • Policy making and other guidelines for uptake cities and local reference groups first and other interested stakeholders later |
| Business models | • Business model canvas and instructions for uptake cities and local reference groups |
| Recommendation and Deployment Guidelines | • Guidelines |

### 3.1.2 Exploitation mechanisms and current progress

**Uptake cities group/Local reference groups**

*Uptake Cities* **Groups**

GreenCharge works with 12 Uptake Cities who learn from our three pilot cities through site visits and an advanced webinar programme. This culminates in an electric mobility road map for each city that will cover issues relating to the construction, configuration and location of charging infrastructure for electric/hybrid vehicles, and their integration into mobility planning. This intensive exchange between the 3 pilot cities and the 12 Uptake Cities will generate peer-to-peer feedback and add value to the new business models developed

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[5] Adapted from diagram used in project's GA.

for each city and give input to the roadmaps for replication developed by the 12 Uptake Cities. These Uptake Cities:

- Contribute with user needs and feedback from a variety of urban contexts across Europe
- Act as a first group of potential replicators of the solutions developed in GreenCharge
- Provide input for innovation management to ensure that the project stays up to date with market reality and policy changes

In return for their effort, the group gets:

- First-hand knowledge about the project
- On-site discussions with the GreenCharge pilot cities
  - Study visits to the 3 pilot sites
- A dedicated distance coaching programme for the preparation of roadmaps for integration of GreenCharge e-mobility solutions in their SUMPs

As can be seen in Figure 4, the Uptake Cities are scattered all around Europe and located in 11 different European countries. A list of the participating cities can be found in Table 4.
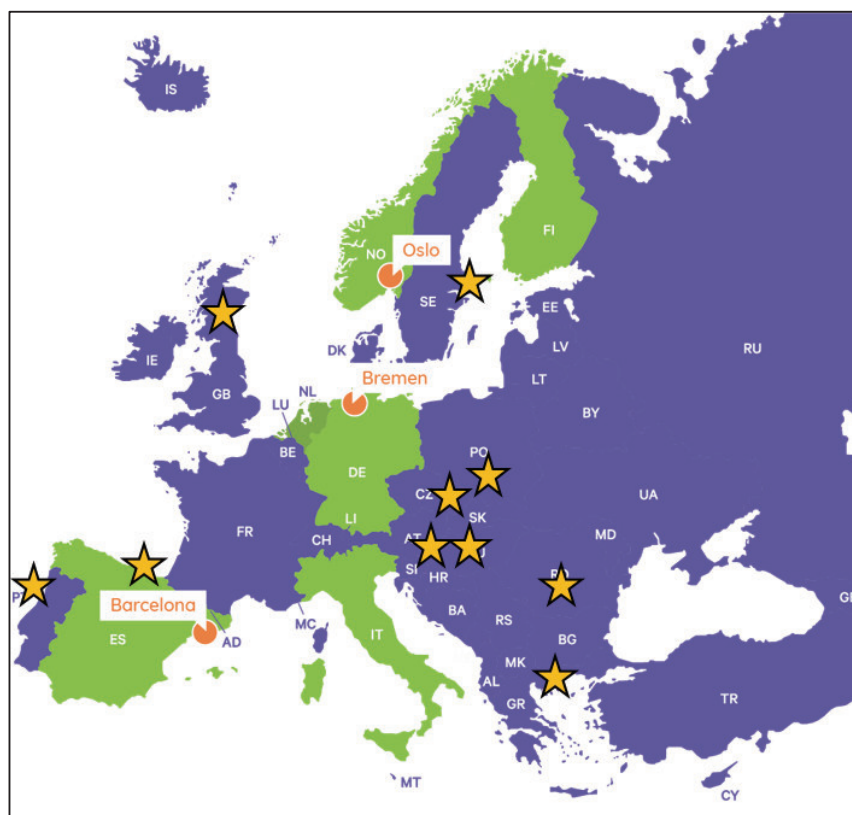


**Figure 4: Pilot Cities (orange dots) and Uptake Cities (yellow stars) map**

**Table 4 List of Uptake Cities**

| Uptake City | Country |
|-------------|---------|
| San Sebastian | Spain |

| Uptake City | Country |
|---|---|
| Burgas | Bulgaria |
| Budapest | Hungary |
| Krakow | Poland |
| Ploiesti | Romania |
| Porto | Portugal |
| Stockholm | Sweden |
| Thessaloniki | Greece |
| Edinburgh | Scotland |
| Brno | Czech Republic |
| Zagreb | Croatia |

At the beginning of the project, the Uptake Cities have been questioned about their interests. The mode of transport that has the highest interest of the Uptake Cities are Electric cars, followed by E-bikes, Electric freight vehicles and Electric buses. Regarding charging facilities, the cities are most interested in charging near city centres. Also booking of charging, battery storage and V2G systems, priority charging and the enforcement of time spent occupying space at charging stations are of interest of the Uptake Cities. As renewable energy source, the Uptake Cities are most interested in (PV) solar panels. There is also a high interest in exchanging knowledge about SUMPs. During the project, each Uptake City will deliver a roadmap on the construction, configuration and location of charging infrastructures. These roadmaps can be integrated into respective SUMPs.

Currently, the first Uptake Cities event has taken place in Bremen and was organised subsequent to GreenCharge's 3rd consortium meeting. The Uptake Cities attended this meeting in order to learn more about shared electric mobility systems. Presentations about Bremen's mobility projects, site-visits (see Figure 9) and presentations held by the Uptake Cities themselves were part of the programme.

*Local Reference Groups*

Local Reference Groups (LRG) have been established at the beginning of the project, involving representatives from relevant associations, councils, and other entities/alliances that represent relevant businesses who are potential adopters. These groups have been consulted at each critical step in the project to provide feedback from a user's perspective.

The benefits for the people or organisations participating in the LRGs are:

- Receiving first-hand knowledge about the project results and experiences
- Possibility to influence the project solutions, e.g. the implementation of local pilots
- Networking with other organisations and stakeholders that have similar interests and establishment of position in existing or new value chains.

The participants of the LRGs are expected to provide input to needs, requirements and feedback for the project development, evaluation and exploitation through participation in:

- 3 Business model workshops (one per year in their local city)
- Interviews and surveys

Currently, all three business model workshops have taken place at the respective pilot cities with active involvement of the LRGs.

### *Standardization*

Standardization is a key tool to deliver Horizon Europe objectives, ensuring the deployment and uptake of innovation by European and global markets. The GreenCharge project aims at standardization at European (CEN) and international (ISO) level. Currently, the identified relevant standardization committees are ISO/TC 22/SC 31 on Data communication and IEC/TC 69 Electric road vehicles and electric industrial trucks. Dev 8.2 CON elaborates further on how standardization with GreenCharge is being achieved.

## 3.2 Dissemination Plan

### 3.2.1 Strategy

In general, all **open** results will be disseminated at the public website of the project, in newsletters and media, at meetings with industry/networks, at conferences and for target groups. As input for defining target groups the results of the Stakeholder Analysis (D3.1) and the overview of target audience and messages provided in Table 2 of the Communication strategy and Plan (D8.1) will be used.

**Table 5: Dissemination mechanisms**

| Result | Dissemination mechanism(s) |
|---|---|
| Technology prototypes | • Commercially exploitable prototypes will be integrated in commercial products and services<br>• Open source prototypes will be published via Github (system for publication of open sources)<br>• Publications on the prototypes will be integrated in publications on other results |
| Open specifications | • 1 scientific paper (conferences or journal) |
| Evaluation results and lessons learned from pilots | • 4 scientific papers (conferences or journals)<br>• Open research data will be published as structured data |
| Business models | • 1 scientific paper on business models |

### 3.2.2 Dissemination channels and tools

Several dissemination materials and tools have been and will be produced throughout the entire course of the project. The dissemination materials will be realized according to different communication needs, to various event typologies and to follow the project evolution and results. The following mechanisms have been identified as useful for dissemination purposes.
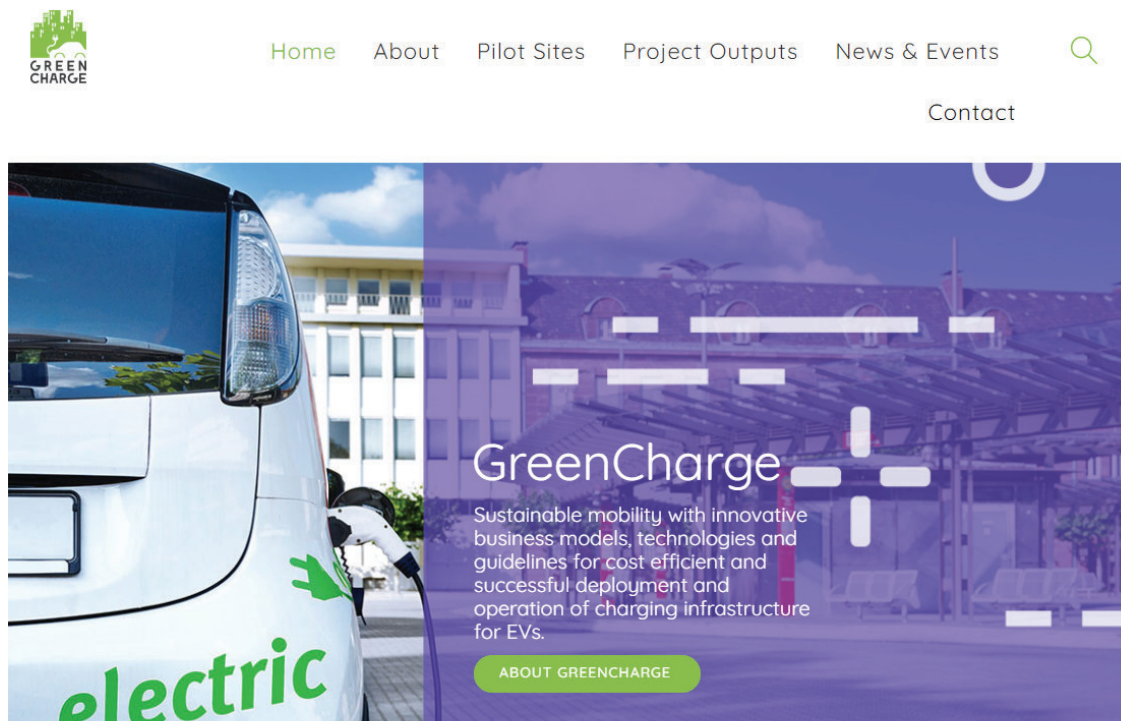
### Website

The purpose of the website is to gather all information and news about the project. All promotional materials include a link to the website. It is the portal where (external) stakeholders can get information on the GreenCharge project and connect with project management. The website can be accessed through the URL www.greencharge2020.eu and was launched in December2018. The homepage (Figure 5) contains a short summary of the project, links to all GreenCharge consortium partners, a form to subscribe to the project's newsletter for the latest news and events and the notification that the project has received funding from the

European Union's Horizon 2020 research and innovation programme under grant agreement No 769016. The website comprises project related information and is divided into several sections:

- Home
- About:
    - Project
    - Consortium
    - Partner Project
    - Uptake Cities
- Pilot Sites:
    - Overview of Pilots
    - Barcelona
    - Bremen
    - Oslo
- Project Outputs:
    - Deliverables
    - Public Materials
    - Videos
    - Newsletters
- News and Events
- Contact

The website is in English and all information is as accessible as possible to a broad audience. As the URL of the website is listed on all promotional materials and press releases, members of the general public visit the website as well as policy members and potential users of the project solutions and results.

**Figure 5:  GreenCharge website homepage**

**Social media**

In recent years, social media have become an essential tool for communication, networking and content sharing purposes and help in realizing communication and dissemination goals of GreenCharge. Social media presence allows the project to:

- Reach relevant stakeholders;
- Establish an online presence;
- Increase GreenCharge brand awareness.

GreenCharge is prominently present on LinkedIn and Twitter as these channels are most relevant in the scientific and business world. The social media channels that have currently been created for the project are the following:

- https://twitter.com/GreenCharge2020
- https://www.linkedin.com/company/greencharge-project/

To use Twitter and LinkedIn correctly several guidelines were set up and explained in D8.1 (Communication Strategy and Plan).

By its presence on various social media platforms, GreenCharge increases its chances for exposure to and expansion of interested audience, which can reach and engage with GreenCharge and its work in a very simple and (almost) costless way.

In order to build and grow the audience for the chosen social channel, the following actions are being taken:

1. Proactive weekly posting on the GreenCharge social media channels/platforms since April 2019;
2. Promotion through Partner's social media channels;
3. Sharing, engaging and commenting content on the social channels;
4. Interlinking with partner's social media channels by means of following/like and requesting to follow/like the account back;
5. Following/like other related projects, European Commission and Horizon 2020 related social media accounts and pages;
6. Following/liking the audience defined in the stakeholder analysis;
7. Using appropriate communication style when engaging with the audience.

Actions which show good results are actions 1, 3, 5 and 7 whereas actions 2, 4 and 6 have been less successful also due to some delays in the project and thus lack of results to share.  As project results become more readily available and project partners, stakeholders and linked projects will be actively reminded to like, share and comment GreenCharge postings, those actions are expected to show better results.

LinkedIn

LinkedIn is oriented towards the  professional stakeholders in the GreenCharge three defined value chains and it is a strategic choice to disseminate on LinkedIn, as this is a platform where most of GreenCharge identified stakeholders as identified in D3.1 and D8.1 are present. Furthermore, as project results become available, GreenCharge can benefit from the existing LinkedIn networks and communities involved in relevant areas such as EV, Electric Charging, Energy and cities.  The account follows the hashtags #powertothetpeople #electricvehicles and #zeroemission which have 60, 564 and 386.819 followers respectively.  As the GreenCharge LinkedIn account is a business account, the maximum of hashtags we can follow is three. The aim is to amplify the message and get it to the target audience in the shortest amount of time. A screenshot of the project's LinkedIn page is shown below in Figure 6:
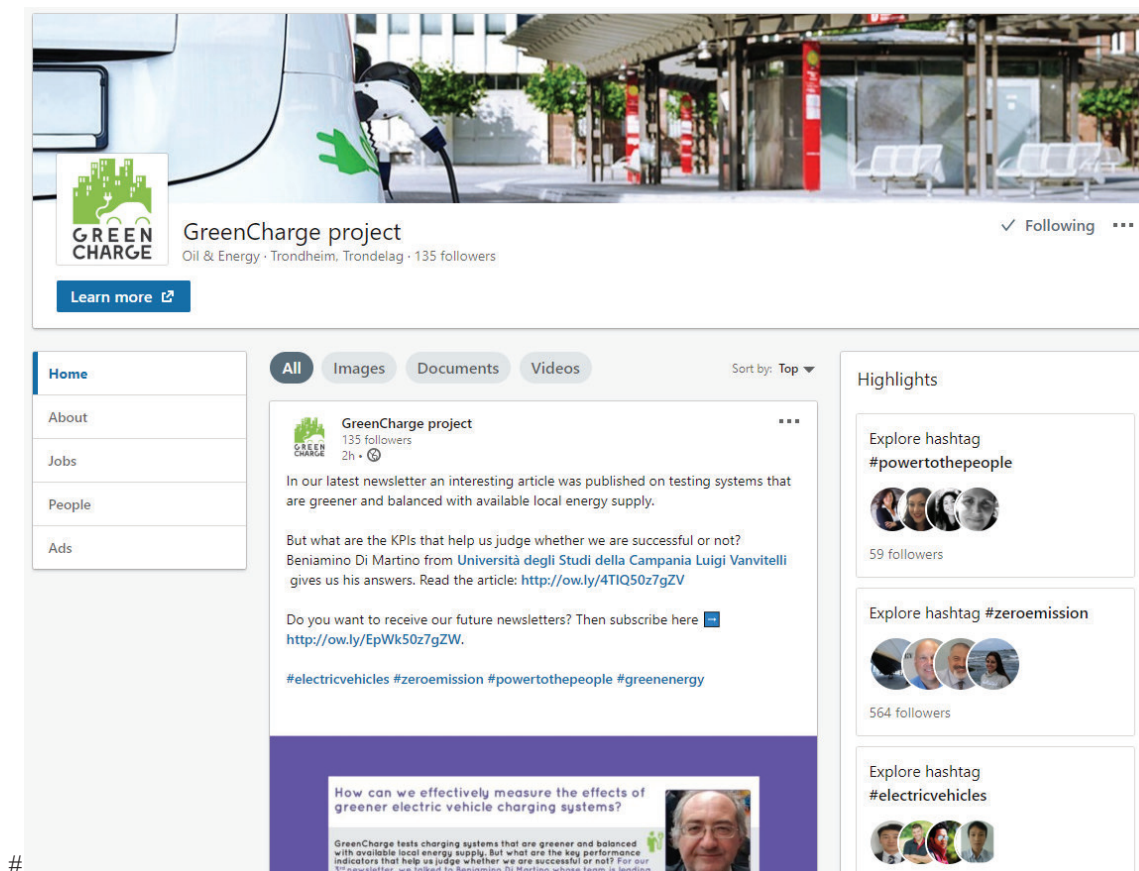
**Figure 6: Screenshot of GreenCharge LinkedIn page**

Twitter

Since Twitter is used for communication and dissemination purposes, it is important to mention several distinctive platform features. A screenshot of the project's Twitter page is shown below in Figure 7.

One of the key-features of Twitter is information filtering by mentions of hashtags. Hashtags allow to quickly search and find information within the platform related to a certain topic. Therefore, the basic hashtags relevant for the project will be (non-exhaustive list): #powertothepeople; #zeroemission; #electricvehicles; #energyefficiency; #Horizon2020; #H2020; #renewableenergy.

The Twitter accounts related to the environment, climate, energy, research and innovation, European Commission and H2020 (non-exhaustive); @EU_Commission; @EU_H2020; @EUhorizon2020;@EUClimateAction; @INEA_EU; @EU_ENV; @ERC_Research; @EU_Growth;@EU_EASME are followed, as well as all partner Twitter accounts as set out in the Communication Plan (Del. 8.1).

As project results will become more readily available and exploitable, the scope of specific user groups to be targeted will be widened to include relevant and interested stakeholders from the three identified GreenCharge value chains (D3.1), from Green Charge identified target audiences (D8.1), from pilot and uptake cities' administrators, from academia and from other interested stakeholders in the E-mobility community.
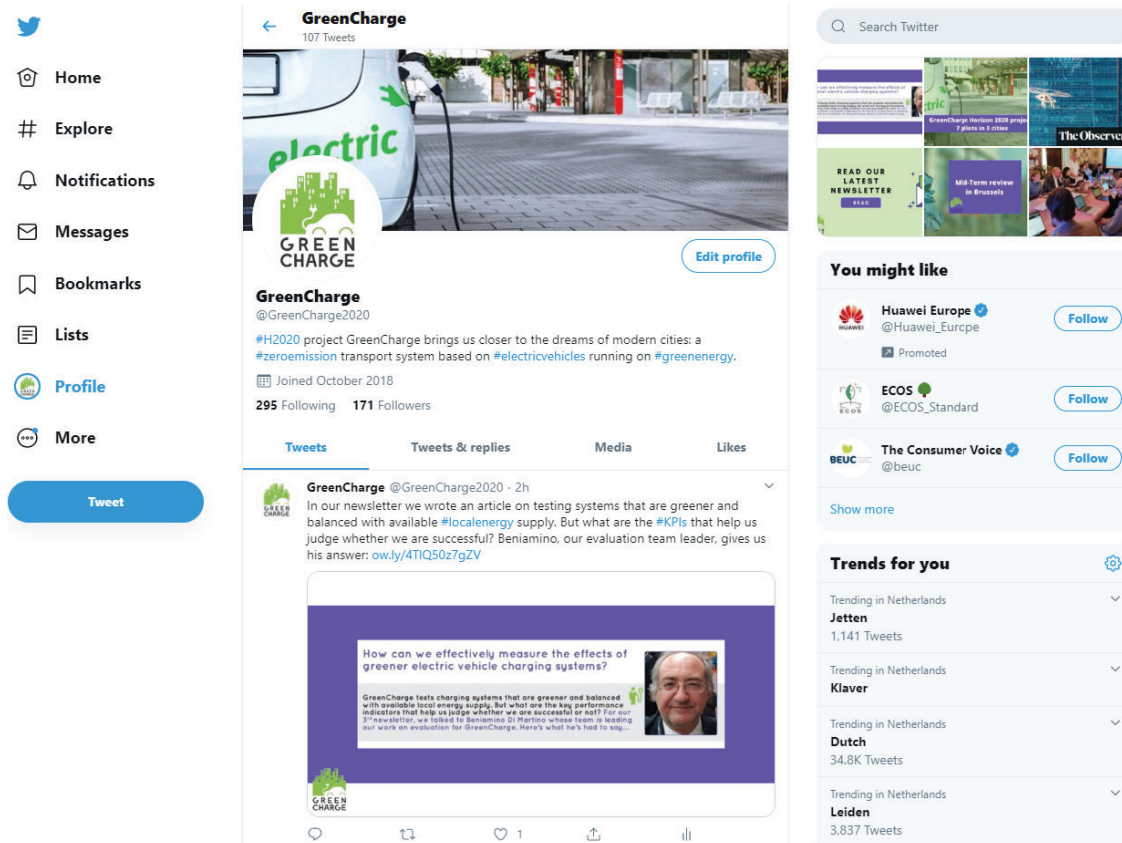
**Figure 7: Screenshot of GreenCharge Twitter page**

**Monitoring tools**

To accurately measure D&C activities, analytics from different tools available on the internet are used. The data provided by these tools will allow a detailed evidence-based conclusion on the reach and impact of the D&C activities at the end of the project. It also provides WP8 leader and project management with the ability to discover, interpret and connect meaningful patterns in data, enabling them to improve the D&C activities and/or choose to add or change D&C channels. Analytics allow to quantify the effect of making these additions or changes and shows a defined path of optimization that leads to better results on all fronts. Below is an overview of analytics tools WP8 leader.

Hootsuite

Hootsuite is a social media management tool which enables users to access many social networks from one account, divide engagement activity into social networks and streams and monitor what followers are saying. Users can post updates, read responses, schedule messages, view statistics and much more. More importantly, it also allows users to collect data and create reports for multiple Twitter and LinkedIn profiles from one dashboard. It helps users to:

- Determine which posts are popular and what kind of content users should post,
- Track down the best times and days to share content,
- See how people react to content and react accordingly,
- Create a clear and interesting overview of the organization and showcase the efforts to a wide audience across multiple platforms,
- View how many people react, share and like the content being shared.

Facts and figures about GreenCharge LinkedIn and Twitter accounts are as follows:

- Regular posting of messages started in September 2019 and shows a steady increase in followers for both LinkedIn, from 59 in September to 100 in December 2019, and Twitter, from a start of 62 followers to 110 in December 2019. We are confident that the KPIs of 200 for both channels determined in the GreenCharge Communication Plan (Deliverable 8.1) will be met and we aim for 400 Twitter followers and 320 LinkedIn followers at the end of the project:
- The best time to post messages is Wednesday from 9 to 14 for Twitter and Thursday from 12 to 16 for LinkedIn:
- Popular posts are those about project events such as the launch of the Oslo Pilot.

<u>Google analytics</u>

Google also provides specific analytics tools to give its users better insights in their websites. The four key pillars of the programme are:

- Audience (who visits the website)
- Acquisition (how do they reach the website)
- Behaviour (what do they do once they are on the website)
- Conversions (have they subscribed to a newsletter, filled out a form etc.)

The GreenCharge website has also seen a steady increase in visits, resulting in a total of 2340 unique visits in December 2020.  We are confident that the KPI of 3.000 unique website visits by the end of the project will be met.  Traffic comes from four channels:  direct, search engines social media and referral from other websites such as CIVITAS, SINTEF and ICLEI sites. Analytics also show us that visitor visit an average of 1,55 pages for a duration of 2,5 minutes and that 53% continue to other pages from the homepage.

The most popular pages of the GreenCharge website from January 2019 up to the December 2019 are:

- Homepage – 3,157 pageviews
- About project – 1,624 pageviews
- Pilot overview – 784 pageviews
- Deliverables – 753 pageviews
- News – 573 pageviews

The above monitoring tools will be viewed on a monthly basis to keep WP8 leader and project management up-to-date and to see whether KPI's continue being met. The data present within this package of tools will also serve to determine possible optimization of D&C activities, to gain the optimal reach and impact and form a consistent base for the exploitation activities.

**Publications**

GreenCharge ensures that results are communicated using the traditional means of publications in journals and at relevant international conferences/workshops. In addition, relevant industrial/interest group events and publications may be used. The following relevant publication channels have been identified:[6]

- ***Reviewed Journals (several provides open access options)***
  - Elsevier Energy
  - Elsevier Applied Energy
  - IEEE Transactions on Smart Grid

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[6] Some of the items in these lists were identified in the GA, but the lists have evolved since then.

- *Other publications*
    - Public Transport International (http://www.uitp.org/pti)
    - Renewable World Magazine (http://www.renewableenergyworld.com/magazines.html)
    - PV Magazine Worldwide (https://www.pv-magazine.com/)
    - CleanTechnica (https://cleantechnica.com/cleantechnica/)
    - Fleet Europe Magazine °90 Special Smart Mobility Management
    - Energy Storage (https://www.energy-storage.news/news/list)
    - The Parking Professional Magazine (http://www.parking.org/news-publications/the-parkingprofessional-magazine/)
    - Duurzaam Bedrijfsleven (https://www.duurzaambedrijfsleven.nl/)
    - Parking News (http://www.parking-net.com/parking-news)
    - Open Access government (https://www.openaccessgovernment.org/)

### Research data repositories

Original research data (in an anonymized form) will be documented and archived in a research data repository as open research data, and thus placed at the disposal of colleagues who want to replicate the study or elaborate on its findings. Published information will include models of user's behaviours and results of data analysis.

### Zenodo

GreenCharge will use the open research data repository *Zenodo* to comply with the H2020 Open Access Mandate[7]. All scientific publications, including public deliverables and public parts of underlying datasets are being uploaded to the *H2020 GreenCharge Community*[8] in addition to the *European Commission Funded Research (OpenAIRE) Community*[9] in Zenodo.

Zenodo is a "catch-all" open research data repository which gathers research data across all disciplinary fields. The repository is hosted and managed by CERN. All data deposited to Zenodo is stored securely in the CERN Data Centre's cloud infrastructure. More information about data management in GreenCharge project can be read in D1.1 (Data Management Plan).

### Newsletters

In total, six newsletters will be produced and distributed electronically to about 1500+ recipients. Currently, 2 newsletters have been sent out already as can be seen in Chapter 4. These GreenCharge newsletters make use of the Informed Cities Newsletter. Essentially, GreenCharge will be heavily profiled (alongside other mobility projects) in the Informed Cities Newsletter, but there would be a click-through to a separate and subordinate GreenCharge newsletter which is branded separately and contains a fuller range of stories and results dedicated to GreenCharge. In the first Informed Cities Newsletter, GreenCharge was given a significant headline slot.

The newsletters contain meaningful content for practitioners as well and assist in promoting the GreenCharge brand and concept. The newsletter is less focused on experts in the field but more focused on building a general understanding and acceptance of e-mobility. For detailed and complex project findings and information, the newsletter will refer to deliverables hosted on the project website and other sources of information.

The GreenCharge newsletters is being disseminated as follows:

- Via a link contained within the *Informed Cities* newsletter
- Via links on social media (Twitter/LinkedIn)
- Via direct 'ad hoc' emails to professional contacts of the consortium partners
- Via passive browsing on the newsletter page of the GreenCharge website.

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[7] http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-pilot-guide_en.pdf

[8] https://zenodo.org/communities/h2020-greencharge/?page=1&size=20

[9] https://zenodo.org/communities/ecfunded/?page=1&size=20

A consistent structure is used for the newsletter and can be found in the Communication Strategy and Plan (D8.1). Within a limited number of issues, the newsletter must give fair treatment to the breath of subject matter of the GreenCharge project. It must also be opportunistic in terms of tying into milestones that generate newsworthy content over the course of the project.

It is proposed that as far as possible, each Work Package is given a headline article slot. The main themes of each of the six newsletters can be found in Table 6.

**Table 6: Newsletter themes and dates of publication**

| Newsletter number | Focus theme | WP focus | Key milestone | Foreword author | Date of publication[10] |
|---|---|---|---|---|---|
| 1. | Pilot cities | WP2 | MS1 | Joe Gorman (SINTEF) | February 2019 |
| 2. | Business models and prototypes for cities | WP3 | MS4 | Arno Schoevaars (PNO Consultants) | October 2019 |
| 3. | Technology and Management | WP4 (WP5) | MS5, MS6 | Sonja Pajkovska (Hubject) | February 2020 |
| 4. | Getting the right stakeholders including the public/ users on board | WP6 | N/A | tbc (Eurecat) | October 2020 |
| 5. | SUMPS and electric mobility | WP7 | N/A | Ana Dragatescu (ICLEI) | February 2021 |
| 6. | Summary and goodbye | WP1 | MS8 | Joe Gorman (SINTEF) | August 2021 |

### Dissemination Events

#### Self-organised events

GreenCharge partners will self-organise several dissemination events. This includes a GreenCharge conference, open days and webinars.

*GreenCharge conference*. During year 3 of the GreenCharge project, a larger (approx. 150 participants) 1.5-day Informed Cities Conference will convene project partners and Uptake Cities with a cross-European mix of participants from local governments (at least 25 cities from 15 European countries), academia, business, NGOs and other organisations, to share and contest the project outcomes and results. Coordinated by ICLEI, the consortium will dedicate one edition of the established conference series 'Informed Cities' to the GreenCharge project. ICLEI will co-develop the programme together with the project partners, involving also other relevant H2020 projects of the same thematic area. GreenCharge will also be involved in the arrangement of two other events such as a dedicated SUMP workshop in Bremen and a workshop at the ICNC (International Conference on Computing, Networking and Communications) Conference.

*Open days*. The project will arrange plenary meetings approximately every 8 months, each lasting 3-4 days. These are primarily intended for coordination of work within the consortium itself. Once a year, one full day

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[10] Dates beyond the end of 2019 are provisional dates. Exact dates to be confirmed.

of such meetings will be designated as the "open day". A selected group of external stakeholders will be invited to each open day; some time will be used for presentation of the project or results of the project, but most time will be used for an open dialogue between the consortium partners and the external stakeholders. The presence of most key members of the project allows the arrangement of detailed one-to-one discussions on specific topics on an *ad hoc* basis.

*Webinars*. GreenCharge will hold 5 webinars during the project duration. These will be a 30-40 minute talk by 1-2 members of the consortium on project topics. This will be followed by 20-30 minutes of questions and answers by attendees. Webinars will be recorded and uploaded to the project's website, Youtube, Vimeo, etc. The aim is to offer the workshops on demand, unbound by time or location, and thereby limiting the environmental impact of attending such an event. The planning and content of the webinars can be found in Table 7.

**Table 7: Webinars content and planning**

| Webinar number | Topic | GreenCharge participants | Date of publication[11] |
|---|---|---|---|
| 1. | Introduction to the project | ICLEI, SINTEF | September 2019 |
| 2. | Business models | ICLEI, PNO Consultants | January 2020 |
| 3. | SUMP Guidelines | ICLEI, City of Bremen | March 2020 |
| 4. | Evaluating electric mobility measures | ICLEI, Universita degli Studi della Campania "Luigi Vanvitelli", Eurecat | June 2020 |
| 5. | Preparing and finalising roadmaps | ICLEI, City of Bremen | November 2020 |

**External events**

GreenCharge will ensure that results are communicated at relevant international conferences/workshops. The project will present the SUMP approach at city-related events of the EC like CIVITAS Forum, Transport Research Arena (TRA) etc. In addition, relevant industrial/interest group events may be used.

We use the project's SharePoint cooperation platform to maintain a list of upcoming relevant events; the current status can be found in chapter 4 (Table 9). This list will be continuously updated with new events during the project. In the SharePoint list, project partners can mark their interest in one of those events and let other partners know if they are willing to attend an external event; this helps us to coordinate our participation effectively.

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[11] Dates beyond the end of 2019  are provisional dates. Exact dates to be confirmed.

# 4 Communication Report

This section provides an update on GreenCharge's planned and already completed communication activities. A comprehensive description of the project's communication strategy and activities can be found in D8.1 (Communication Plan & Strategy). The overview of the communication progress is given per communication tool, as defined in D8.1.

*Project website*

The project website was launched in December 2018 and will be continuously updated throughout the project. Google Analytics will be used to measure external interest in the site, and the data thus gathered will be carefully monitored. The website will contribute to establishing the GreenCharge "brand".

In the first year of the project interesting news items and other public materials (SUMP and E-mobility brochure, webinar) were added to the website. These updates will be continued during the complete project duration and will remain online for three years after the project. The public project deliverables will be published on GreenCharge's website after the European Commission has agreed on these deliverables.

*Publications and press-releases*

Throughout the duration of the project public a press and media campaign will be implemented. In the first year of the project, press coverage was given in the following ways:

- CIVITAS website: GreenCharge is presented at the CIVITAS website at the *Projects* section[12]. A short project description is given and a hyperlink to the project website is included. A news update on the start of the project, including a short update and photo of the kick-off meeting, was published on the CIVITAS website in January 2019[13].
- Forskning website: at the beginning of the project (February 2019), GreenCharge was also mentioned on a Norwegian website[14].
- INEA booklet: the Innovation and Networks Executive Agency (INEA) has published a booklet focused on EU-funded mobility projects. In the section about Electric Mobility, GreenCharge is included as one of the projects[15].
- ZDF documentary: in November 2019, a documentary about the consequences of air pollution in European cities was broadcasted on the German television channel ZDF[16]. In this documentary, Paal Mork (City of Oslo) shows what is done in Oslo to counteract this air pollution. GreenCharge's pilot at the Røverkollen flats is one of the projects mentioned in this documentary.

For January 2020, a publication in *Open Access Government* is planned. This press-release will be a two page article describing the project and will also be published on the magazine's website[17]. The total number of magazines that will be distributed is 270,000 (of which 170,000 in Europe). Their website is visited up to 120,000 times a month (of which 65 to 80% visitors originating from Europe).

*Newsletters*

In the first year of the project the first two newsletters were published. These newsletters are produced and distributed electronically to about 1500+ recipients. As described in the previous chapter, this is done by making use of the Informed Cities Newsletter, in which GreenCharge is heavily profiled (alongside other mobility projects). In this Informed Cities Newsletter there is a click-through to the separate and subordinate

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[12] https://civitas.eu/projects/research

[13] https://civitas.eu/news/greencharge-project-go

[14] https://forskning.no/transport-sintef/norske-forskere-skal-designe-fremtidens-elbil-samfunn/1121439

[15] https://ec.europa.eu/inea/sites/inea/files/urban_mobility_brochure_2019_web.pdf

[16] https://www.arte.tv/de/videos/086138-038-A/re-den-staedten-geht-die-luft-aus/

[17] https://www.openaccessgovernment.org/

GreenCharge newsletter which is branded separately and contains a fuller range of stories dedicated to GreenCharge. In the first Informed Cities Newsletter, GreenCharge was given a significant headline slot[18].

It is proposed that as far as possible, each Work Package is given a headline article slot in one of the six newsletters. The main themes of each of the six newsletters can be found in Table 8. The already published newsletters can be found under the hyperlink in the footnotes.

**Table 8: Newsletter themes and dates of publication**

| Newsletter number | Focus theme | WP focus | Key milestone | Foreword author | Date of publication[19] |
|---|---|---|---|---|---|
| 1. | Pilot cities | WP2 | MS1 | Joe Gorman (SINTEF) | Already published[20] |
| 2. | Business models and prototypes for cities | WP3 | MS4 | Arno Schoevaars (PNO Consultants) | Alread published[21] |
| 3. | Technology and Management | WP4 (WP5) | MS5, MS6 | Sonja Pajkovska (Hubject) | February 2020 |
| 4. | Getting the right stakeholders including the public/ users on board | WP6 | N/A | tbc (Eurecat) | October 2020 |
| 5. | SUMPS and electric mobility | WP7 | N/A | Ana Dragatescu (ICLEI) | February 2021 |
| 6. | Summary and goodbye | WP1 | MS8 | Joe Gorman (SINTEF) | August 2021 |

In addition to GreenCharge's separate newsletter and its coverage in the Informed Cities Newsletter, the project is also mentioned in the CIVITAS MOVE newsletter from January 2019[22].

*Brochures and presentations*

At the start of the project, logos and common templates for presentations and other communication or dissemination activities were developed. Also a brochure that can be spread at events was designed already in an early phase of the project.

As one of the results of Work Package 7, the SUMP & E-mobility brochure was designed[23]. This brochure contains an overview of the e-mobility approach in the GreenCharge project and is particularly focussed at the project's relationship with sustainable urban mobility planning.

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[18] https://mailchi.mp/ee3326bd0844/newsletternov2018-461737

[19] These are provisional dates. Exact dates to be confirmed.

[20] https://www.greencharge2020.eu/wp-content/uploads/2019/02/GreenCharge-Newsletter-February-2019.pdf

[21] https://www.greencharge2020.eu/wp-content/uploads/2019/10/Green-Charge-Newsletter-October-2019.pdf

[22] https://mailchi.mp/civitas/civitas-move-newsletter-35?e=[UNIQID]

[23] https://www.greencharge2020.eu/wp-content/uploads/2019/06/leaflet_GreenCharge_e-mobility_and_SUMP.pdf

These two brochures, GreenCharge's presentation template, a roll-up banner and GreenCharge logo stickers are promotional materials available for project partners when attending events.

### *Social media*

As described in the *Communication Strategy and Plan*, GreenCharge's social media activities will be covered by Twitter, YouTube and LinkedIn. For assessing their effectiveness, these accounts will be monitored by using Twitter and LinkedIn analytics.

The aim of GreenCharge's social media strategy is to post about 3 times a week about project progress, attended events, e-mobility news or the publication of newsletters or public deliverables on the project website. Figure 8 shows that the total number of GreenCharge LinkedIn impressions has increased in autumn 2019. This can be explained by an increased frequency of social media posts since that time.
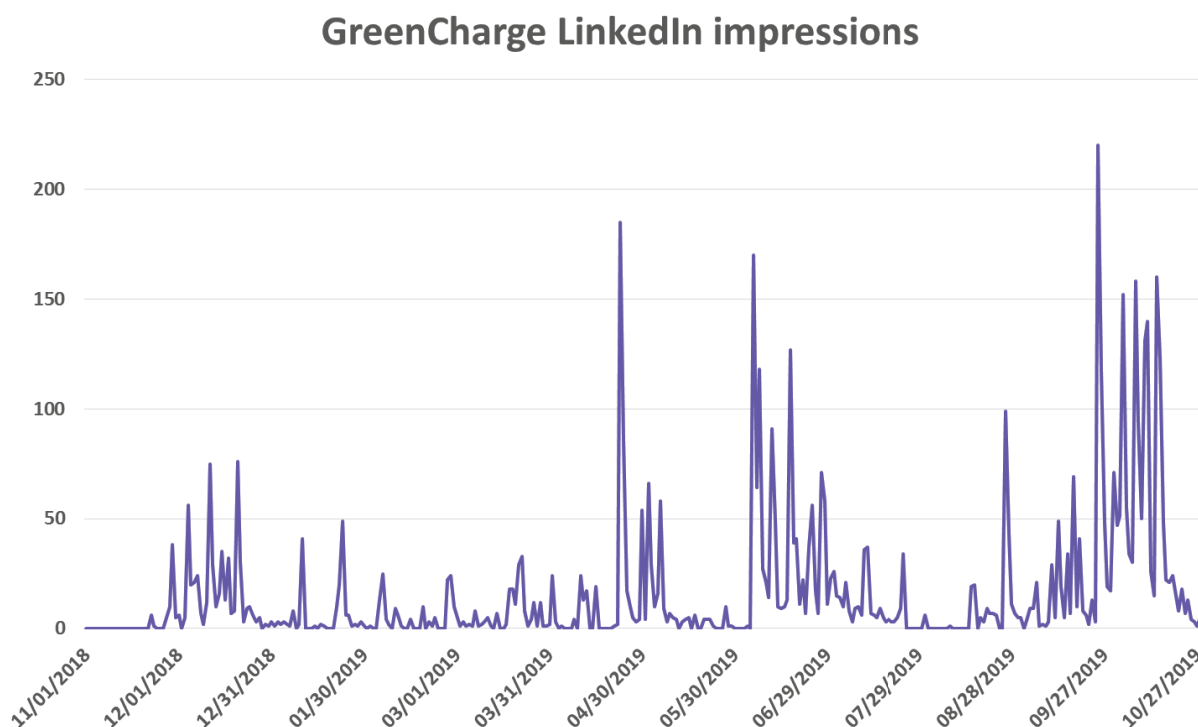


**Figure 8: GreenCharge LinkedIn page impressions**

The tweets and LinkedIn posts are accompanied by #powertothepeople to gain more traction on social media. This hashtag is used in addition to the hashtags already defined in the *Communication Plan and Strategy*, because the other hashtags are also used by other parties. Adding the #powertothepeople hashtag makes it easier to search for GreenCharge related social media posts.

### *Movie/animation*

An animated video will be made about the GreenCharge project. This video has to promote the project in three ways:

1. Attract: people will see the video and read more about the project
2. Engage: people will like, share or retweet the video on social media
3. Promote: people will write about the video on their own (company) social media accounts

The video is planned to be published in 2020 and will be an "explainer video". There are different types of explainer videos and animation styles that can be used for this purpose, but it is likely that its style will be a "2D character animation".

*Webinars*

GreenCharge's first webinar has been recorded on 12 September 2019. In an hour, listeners will have the opportunity to learn more about GreenCharge and what the project seeks to achieve over the course of the project duration. In this first introductory webinar, the project coordinator and the communication manager of the project are involved. The record of the webinar is uploaded on YouTube and can be found on the project website[24].

*Events*

In the first year of the project, GreenCharge organised two internal events that were attended by people who are not involved in the project: an open day in Barcelona and an Uptake Cities event in Bremen. The open day in Barcelona was organised subsequent to GreenCharge's 2nd consortium meeting and was visited by external stakeholders (some of them are part of the Barcelona local reference group). At this open day, the project was presented and there was time to have an open dialogue between the external stakeholders and the consortium partners.



**Figure 9: Site visit - Uptake Cities event in Bremen**

A list of external events attended by GreenCharge partners can be found in Table 9. As can be seen in the table, at most of these events partners represented GreenCharge through hosting a presentation or a stand (including roll-up banner).

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[24] https://www.greencharge2020.eu/news/greencharge-webinar-available/

**Table 9: Events attended by GreenCharge partners**

| Event | Location | Date | Type of participation | Size of audience | Visiting partner(s) |
|---|---|---|---|---|---|
| 32<sup>nd</sup> Enviro-Info2018 Conference, Environmental Informatics, Techniques and Trends | Munich, Germany | 05/09/2018 – 07/09/2018 | Oral presentation | - | SUN |
| SINTEF Mobility Workshop | Trondheim, Norway | 01/11/2018 | Oral presentation | 60 | SINTEF |
| Smart City Expo World Congress 2018 | Barcelona, Spain | 13/11/2018 – 15/11/2018 | Oral presentation | 250 | SINTEF |
| Clean energy, clean mobility – EV Energy final conference | Almere, The Netherlands | 05/06/2019 | Roll-up banner, Oral presentation | 80 persons | PNO Consultants, City of Oslo |
| ITS European Congress | Eindhoven, The Netherlands | 03/06/2019 – 06/06/2019 | Roll-up banner | - | PNO Consultants |
| 6<sup>th</sup> European Conference on SUMPs | Groningen, The Netherlands | 17/06/2019 – 18/06/2019 | Roll-up banner | - | ICLEI, City of Bremen |
| North Sea Climate Conference | Marstrand, Sweden | 25/06/2019 – 26/06/2019 | Oral presentation | 200 | City of Bremen |
| Norwegian Solar Energy Day | Oslo, Norway | 19/09/2019 | Oral presentation | 160-180 persons | SINTEF |
| CIVITAS Forum | Graz, Austria | 02/10/2019 – 04/10/2019 | Roll-up banner | - | ICLEI, PNO Consultants, SINTEF, City of Bremen |
| G20 Transport Task Force | Tokyo, Japan | 28/10/2019 – 01/11/2019 | Oral presentation | 30 persons | ICLEI |
| Smart City Expo World Congress 2019 | Barcelona, Spain | 19/11/2019 – 21/11/2019 | Roll-up banner | - | MOTIT |

A list of upcoming external events of interest to GreenCharge can be found in Table 10. A selection of these events will probably be visited by one of the project partners.

**Table 10: Upcoming external events**

| Event | Location | Date |
|---|---|---|
| REVOLUTION Conference | Amsterdam, The Netherlands | Postponed to 08/09/2020 because of COVID-19 |

| Event | Location | Date |
|---|---|---|
| 6th E-Mobility Charging Infrastructure Europe 2020 Conference | Berlin, Germany | Postponed to 21/10/2020 – 23/10/2020 because of COVID-19 |
| Nordic EV Summit | Oslo, Norway | Postponed to 08/10/2020 – 09/10/2020 because of COVID-19 |
| Transport Research Arena | Helsinki, Finland | Cancelled because of COVID-19 |
| Power2Drive | Munich, Germany | Cancelled because of COVID-19 |
| Annual European Electric Vehicle Batteries Summit | Rotterdam, The Netherlands | Postponed because of COVID-19 |
| EV Summit | Oxford, United Kingdom | Postponed to 15/12/2020 – 16/12/2020 because of COVID-19 |
| IEEE 28th International Conference on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE) | Naples, Italy | Postponed to 09/06/2020 – 11/06/2020 because of COVID-19 |
| European Sustainable Cities and Towns (ESTC) Conference | Mannheim, Germany | 30/09/2020 – 02/10/2020 |
| European Mobility Days | Brussels, Belgium | 29/09/2020 – 01/10/2020 |
| Autonomy & The Urban Mobility Summit | Paris, France | 04/11/2020 – 05/11/2020 |
| ITF Annual Summit on Transport Innovation for Sustainable Development | Leipzig, Germany | Postponed because of COVID-19 |
| AVERE eMobility Conference | Brussels, Belgium | 09/11/2020 – 10/11/2020 |
| European Urbanism Next Conference | Rotterdam, The Netherlands | Postponed because of COVID-19 |
| European EV Charging Summit | Rotterdam, The Netherlands | Postponed because of COVID-19 |

*Networking with other groups*

Within European-wide communities, GreenCharge is seeking for cooperation and synergies. This is done by connecting to the CIVITAS Initiative for cleaner and better transport in cities. This is a platform for the exchange of knowledge, ideas and best practices between cities committed to introducing sustainable urban transport policies.

# 5 Further work

The exploitation and dissemination strategy is currently based on the five groups of innovations that were already highlighted in the proposal before the start of the project. As the project proceed, new innovations will be derived that will make it necessary to update the initial version of the Dissemination and Exploitation Plan. Other updates will also be necessary as project results mature, and existing market and other conditions outside the project evolve. The strategy will also need to evolve as we gain new insights into the mechanisms, updates and actions that have been taken to deploy results. To update the strategy, we will consider to:

- conduct a **Short initial market analysis** of the E-mobility market and its players taking our most promising exploitable results into account from the pre-identified Key Technological Results and the Main results and possible other promising exploitable results (KER/KTR/MR/ Policy guidelines, software, technology prototype, business models);
- Create **Light Business Plans** with a 3 to 5-year time horizon to rationalize the exploitable result, provide a clear commercial strategy and define the path to commercialization for the following three to five years which can be used as a reference document over time. It can contain:
    - o business idea;
    - o Company information (structure, personnel, products/services, supply chain)
    - o Industry and competitors analysis, customers and marketing plan;
    - o Key marketing objectives and strategy;
    - o Assessment of available resources (human, material, financial) and planning of business goals, main activities and milestones.
    - o Economic-financial forecasts including estimates of costs and finances
- Determine the **Road to market** of key technological exploitable results as follows:
    - o end of project (TRL 7 for many KERs) in 2021;
    - o further testing, certifications up to 2 years after project completion (2022 – 2023);
    - o commercialization up to 5 years after project completion (2022 – 2026 and beyond)
- Determine the **Road to Uptake** of other Key Exploitable Results:
    - o First uptake of e.g. pilot results (garage charging) in another setting end of project in 2021;
    - o further uptake of garage charging in other housing estates (3) up to 2 years after project completion (2022 – 2023);
    - o further uptake of garage charging on a wider scale (10 housing estates) up to 5 years after project completion (2022 – 2026 and beyond)

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