

Electric Mobility Newsletter

EVs Webinar Special Round-Up Inside

Issue 4 | September 2020

This edition we take a roam around the world of EV charging and how we can make it work together across Europe

For our 4th newsletter, we talked to Jürgen Werneke and Arjun Subramanian from Hubject, one of the world leaders in EV charging roaming and partner in GreenCharge

Why is roaming important?

Roaming offers EV drivers the option to charge their vehicles at all charging stations – regardless of any contracts with specific charging point operators. The billing occurs subsequently via the customer's own contractual partner.

What is the current state of charging point access?

Modern and well-functioning information and communication technologies (ICT) play an important role in electric mobility, and are therefore the prerequisite for a functioning overall electric mobility system. They control all important functions in the electric vehicle and form the basis for its integration into intelligent energy and transport systems, which often includes a customer smartphone app.

However, today's charging process (which connects charging points to the vehicles) is not as user friendly as it should be, and the exchange from RFID cards and apps to initiate charging via protocols and other technologies opens up potential security issues creating a need to ensure against vulnerability to hacking.

The future charging process should be fully automated without any manual interaction, beside plugging in the cable.

What will the future hold?

International standards form an important part of electric mobility governance, and help to ensure systems are compatible across nations and operators. ISO 15118 is one of these, and deals with "vehicle to grid" communication interfaces in road vehicles. Updated in 2019, it is considered to provide a game-changing technology for intuitive and secure charging. Based on IT-certificates installed in cars and charging stations, machines can communicate autonomously, seamlessly and securely. This means a shift towards disruptive charging concepts, such as bi-directional or inductive charging processes.

How is enhanced ICT being implemented in GreenCharge?

To understand the role of ICT in GreenCharge a brief description of some of the apps and tech used in the different pilot sites is given on the following pages.

Keep in touch with GreenCharge for further information.







This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 769016

informed cities

Electric Vehicle Roaming in GreenCharae

The various players within the electric mobility market are connected via a business and IT platform. In the case of GreenCharge, this is provided by our partner Hubject, who works alongside other GreenCharge and market partners.

In the past, the following scenarios would have only been a vision of what future mobility might look like. But today, thanks to the advancements of technology and software capabilities, all of them are a reality and in the very near future can help create greener and more sustainable systems of transport. GreenCharge's pilot projects in this area are summarised below.

Barcelona

In Barcelona, a number of different ICT approaches are being piloted to deal with different modes of transport in experiments in and around the city.

GreenCharge partner Eurecat is developing an app for the **booking** of car charging points along with collecting some inputs

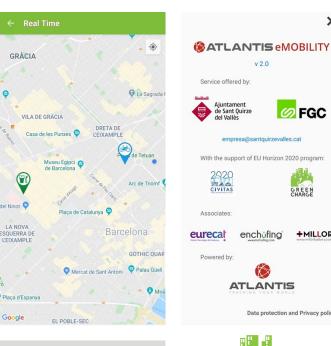
for smart charging such as the initial state of charge (how much energy is currently in the vehicle) and required amount of charge (how much extra energy is required from the charging process). The app also guides the user to the charging point and provides the status/progress of the charging session. This app is intended to be piloted by the employees of Eurecat for their electric cars.

Furthermore, GreenCharge partner Atlantis is developing is developing an app for a **bike sharing** service (pictured). Information including the location of the bike, the state of charge, route history and directions to a charging station are available on the app.

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Similarly, an app is being developed for an electric scooter sharing service by GreenCharge partner Motit.







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Electric Vehicle Roaming in GreenCharge

Oslo

In Oslo, the GreenCharge demonstration sites are heavily dependent on the development and integration of technology for their operational performance and accessibility by their customers.

In Oslo's energy smart **neighbourhood** demonstration, energy produced from photovoltaic cells is stored in batteries and transferred via a smart battery management system to charge parked in 4 storey vehicles residential parking garage. This requires the involvement of many software systems provided by the GreenCharge partners: the new GreenCharge charging app developed and delivered by ZET, the energy management system provided by eSmart and the charging management system provided by Fortum and the subsupplier OneCo). This indicates the technical and stakeholder complexity in getting a relatively

small smart charging system up and running.

Semi fast chargers on an adjacent site are being put in place in an accessible **visitor outdoor location** to demonstrate energy sharing in a neighbourhood and the convenience of eRoaming to visitors driving to the site. Fortum's and Hubject's software systems are involved in this demonstration, alongside an app developed by ZET.



Bremen

The pilot site in Bremen consists of a variety of charging stations addressing different types of users and different types of environment (e.g. residential, workplace). These stations allow **car sharing** between users not owning a car, including catering for sporadic **usage in the combinationwithpublictransport** and to commuters travelling/ charging at work on a regular basis.

Charging stations are either integrated in the grid of local electric

utility company or are part of the local grid in a district area. The software and technology providers for the demonstrators in Bremen are GreenCharge partners ZET (providing car sharing services and software) and PMC (providing workplace charging systems).



GreenCharge Uptake Cities – What's up in Burgas and Thessaloniki?

Up to 12 Uptake Cities will learn from the three pilot GreenCharge cities, through site visits and an advanced webinar programme. The included cities are still at early stages of their electric mobility journey, who seek to learn from our GreenCharge pilots and demonstrations. In this issue we hear about electric vehicle strategies from our friends in Burgas in Bulgaria and Thessaloniki in Greece.

Burgas – Getting Rolling with Light Electric Vehicles

Mobility is of crucial importance to the development of the city of Burgas. With its harbour, airport, railway, roadway, and connection to the Trans-European-Network for Transport (TEN-T), it is considered to be an intermodal transport hub.

Burgas began improving its urban transport system in 2010 renewing its bus fleet, introducing bus rapid transport (BRT) lanes, renovating road infrastructure and bus stations.

The first activity undertaken by the City was to ensure the presence of all necessary infrastructure. The City has also started looking to the futue, and is constantly searching for new opportunities to build upon and upgrade their achievements, making them greener and smarter. During the last few years, the City has deployed considerable efforts in order to enhance e-mobility, including:

• EV-charging stations – there are 3 EV charging stations at

Municipal parking lots and 8 private charging stations at shopping centres and other communicative public places. A private operator will install 50 EV charging stations by the end of the year.

- E-vehicles for the needs of the Municipality – the City is progressively trying to replace conventional municipal vehicles with electric vehicles. At the moment, 2 e-scooters, 4 e-vans and 4 e-vehicles have been added to the municipal fleet.
- 56 electric buses will be purchased by the beginning of next year and introduced in the urban transport bus fleet.

A shared rent a bike system was created in 2015. 20 e-bikes were introduced in 2017 with 26 charging points for e-bikes at 10 charging stations, in total, there are 120 bicycles across all 14 stations. The network of bike lanes within the city has reached 62 km.

Electric bike hire station. Image: City of Burgas



GreenCharge Uptake Cities – What's up in Burgas and Thessaloniki?

Thessaloniki – Building on a New Metro System

Thessaloniki looks to data to help the City and its partners, such as the central government, as well as other local authorities, define the parameters of the e-mobility sector. For example, infrastructure for Battery Electric Vehicles (BEV) should be supported by a detailed route-by-route analysis of vehicle use in order to properly understand the requirements to ensure continuous operation (such as depot provision and on-street charging).

According to recent research, the use of electric buses for public transportation in the city has led to the need for 50 to 100 new standard (12m) BEVs. As part of the investigation of locations for the 12m buses, the research has also highlighted the opportunity to introduce Articulated (18m) Electric Vehicles on some routes. These vehicles can take advantage of the fast charging infrastructure that is provided at the termini used for the 12m buses. Such innovations will continue to be explored.

The municipality of Thessaloniki has recently approved the procurement of 50 e-vehicles. These will serve the needs of the Directorate of Recycling and Municipal Waste Management as well as the Municipal Police. A crucial aspect in Thessaloniki is the operation of the metro (subway) system within the coming years. This is expected to lead to changes in the operational patterns of buses. For this reason, the BEV assessment for buses has been focussed on those routes where there is no obvious overlap with impacts from the use of the metro. A proper incorporation of data will inform the distribution of locations for installing fast charging systems.

> Impression of Metro. Image: City of Thessaloniki

Online EV seminars - EU Projects

2020 has witnessed a strong growth in online seminars for electric mobility. In a change to our usual news review, and as part of our innovation management activities, we keep an eye on these. In this special edition, we pick out a few of the best sources of knowledge in recent recordings in a special learning zone. There is over 50 hours of content to choose from. GreenCharge monitors them through our innovation management strategy.



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Online EV seminars - EU Projects

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Roadmaps to

E-mobility

mobility

Cities approaches to EV charging infrastructure deployment

Organiser: EuroCities https://youtu.be/0gE_CEv9ImY

2 hours

- Alternative Fuels Infrastructure Directive (AFID) revision
- Cities' charging infrastructure deployment strategies
- Innovative planning tool being developed by the USER-CHI project (www.userchi.eu), the Charging Infrastructure Locatlon and HolistiC Planning Kit (CLICK).
- With thanks to Matilde Chinellato at Eurocities for sharing the link with the GreenCharge audience

Report of internal discussion session Organiser: ICLEI www.greencharge2020.eu/ news/webinar-roadmap-to-e-

• The GreenCharge project coordinates an Uptake Cities Group (UCG). This document summarises tips to help them develop an e-mobility roadmap

• Whilst the meeting was held internally to aid the free exchange of ideas, this note summarises key learning points that are of wider interest.

www.greencharge2020.eu

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Online EV seminars - Conferences



Webinars

Baltic Sea Region (BSR) Electric – virtual conference

🕒 3+ hours 🛛 🗸

Organiser: BSR Electric

www.bsr-electric.eu/news/ bsr-electric-final-conference-alook-back-at-our-biggest-event

- A detailed range of content accompanied by an online learning course, including:
- BSR Electric final result
- Procurement and acquisition of electric buses in Oslo, Gothenburg and Hamburg
- Implementation of electrified commercial vehicles and charging infrastructure in Europe in the future

(: Li) 8 hours Organiser: SEEV4-City

SEEV4-City Closing

http://event.seev4-city.eu

- Smart, Clean Energy and Electric Vehicles for the City (SEEV4-City), funded by the EU Interreg North Sea Region Programme, just came to its conclusion.
- Its main objective was to demonstrate that smart electric mobility solutions that integrate renewable energy sources encourage take-up in cities

Online EV seminars - Charging Systems

Charging System Development

🕒 1 hour

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Organiser: Environmental Defense Fund Climate Corps Webinar Series

https://register. gotowebinar.com/ register/2795272325662111758

- Developing depot charging
- Types and sizes of charging systems and trade-offs
- Key concepts about peak load
- Peak-shaving strategies such as demand response and storage capacity
- Steps organizations need to take with their utilities (and when) to develop the needed charging capacity



Electric Vehicles:

and supporting

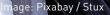
electricity networks

broadening access

Organiser: Oxford University Programme on Integrating Renewable Energy

www.youtube.com/ watch?v=08q7In_x0dM&t=2107s

- Electric vehicles, charging them, and the effect of this on the electricity network
- Electric Nation and Park & Charge projects



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Full Electr

Online EV seminars - Hubs

Energy Synergies in Transportation Hubs & Smart Charging Pilots

2 hours

Organiser: Cenex Nederland

https://cenexgroup. nl/2020/06/15/replay-thewebinar-energy-synergiesin-transportation-hubsand-smart-charging-pilotsjune-10-2020

- Challenges faced in the energy systems due to the increased production of renewable energy and growth of electric mobility
- Lessons learnt from six smart charging pilots that have been part of the Interreg NSR 'SEEV4-City' project. In these pilots, several different smart charging and vehicle-to-grid (V2G/V2X) solutions were demonstrated which aimed to optimise the supply and demand of renewable energy at locations where EVs are used and parked.

Shared and electric mobility hubs

🕒 1 hour

Organiser: eHubs

www.nweurope.eu/ projects/project-search/ ehubs-smart-sharedgreen-mobility-hubs/news/ shared-and-electric-mobilityhubs-the-ehubs-concept-andthe-connection-of-differentmodes-in-a-maas-landscape/

- Outputs of the eHUBS project, in particular the objective of deploying 92 eHUBS in 6 partner cities by the end of 2021
- Development of a digital kiosk and database for eHUBS for transport and MaaS-providers.



Organisers: Regen / CENEX

Ultra rapid

charging hubs

www.regen.co.uk/event/ electric-vehicle-and-electricitysystem-forum-charging-hubs

- Development and role of ultrarapid charging hubs and the implications for the electricity network.
- The webinar heard from industry leaders in ultra-rapid charging hubs and from electricity networks, discussing progress and examining the future for this growing infrastructure opportunity.



Online EV seminars - Thought pieces

Climate for

Electric Vehicles?

E-mobility: lifeline for cities – or an illusion?

1 hour

Organiser: Shaping Mobility/PTV

https://youtu.be/NM4sTiQdD00

- How close are we to really going electric?
- Will these new vehicles make traffic and pollution a thing of the past?

eVision – Powering European e-mobility

🕒 1 hour

Organiser: Eurelectric

www.eurelectric.org/events/ evision-powering-european-emobility

- How will the expected electrification of transport will happen?
- How much electricity is needed?
- Where exactly is it needed?
- How do we increase charging with clean power?

🕒 1 hour

Organiser: Understanding the Climate Crisis -Building a Better World

www.facebook.com/watch/?v= 701627724022032&extid=pVUx MT9fA8Iw6AJM

- Talk by Anthony Simpson
- Are electric vehicles really greener than petrol/diesel?
- How does it compare to other forms of transport?
- How close is the EV transition?
- Can our electricity system cope?
- And does it matter what time of day I charge the vehicle?
- Finally, this talk seeks to convince everyone why embracing smart meters is a vital step towards net zero

Exploring the economic and societal impacts of the roll out of electric vehicles in the UK

(i) 1 hour

Organiser: DecarboN8 Research Network

www.youtube.com/ watch?v=s4ZYZuh7Alg

- Research that explores the macro economic and societal impacts of both investing to reinforce the electricity network and from shifting fuelling from fossil fuels to electricity.
- Considerations for a Just Transition and regulatory and policy implications.





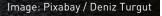
Vehicles (OLEV) tailored for council officers on topics such as EV charging solutions and sustainable cities, featuring insights from the Go Ultra Low Cities, including webinars on:

- Sustainable energy options for chargepoint infrastructure
- On-street Charging: Case Studies and Funding
- On-street Charging: Strategies and Solutions
 Insights from Oxford, Milton
- Insights from Oxford, Milton Keynes, Dundee and West of England

• Smart Charging and V2G

including webinars on:

- Open Communication
 Protocols for EV Charging
- Examples from Denmark, California and Quebec
- Cyber Security
- Artificial Intelligence



Online EV seminars - Industry Talks



EV roaming

webinar

Delivering Easy EV Charging, Plug&Charge In Action

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2 hours

Organiser: Clean Technica

https://cleantechnica. com/2020/04/19/deliveringeasy-ev-charging-plugchargein-action-webinar-wrap-up

- Discussion on the benefits of ISO/IEC 15118-enabled EV Charging
- GreenCharge partner Hubject alongside ECS and loTecha explained how they have integrated their charging solutions and enabled a seamless end-to-end implementation.
- Bart Sidles from Hubject Inc. gave an overview of the ISO/ IEC 15118 protocol, how various stakeholders implement the protocol, and its foundation in a digital ecosystem for EV stakeholders to ensure that charging sessions are secure.

2 hours

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Organiser: NKL Nederland

www.youtube.com/watch?v=8Z ASyZQXliw&feature=youtu.be

- OCPI stands for open and independent protocol. Why? To allow any EV driver to charge at any charging station in the EU.
- This webinar introduces the EV Roaming Foundation to help promote roaming according to open standards

Here Comes Zero Emission EV Charging Off-Grid

🕒 1 hour

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Organiser: IDTechEx

https://register. gotowebinar.com/ register/193673882371516175

- Is financing enough to sustain the rise in electric vehicles?
- Are the right investment criteria in place to accelerate the take-up EV infrastructure
- Are infrastructure targets for member states are needed?
- What des price transparency mean?
- How can roaming be further promoted
- What requirements are needed for a truly open market



Inductive charging:

The future of the

e-mobility sector?

www.youtube.com/ watch?v=DrJxpT4TMQk

- What are the newest technologies for wireless charging? When are going to see new EV models equipped with these technologies on the market? What are the main barriers to overcome?
- Insights of companies specialized in manufacturing of new technologies and vehicle models.

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1 hour

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Organiser: SIEMENS

https://ssi.videomarketing platform.co/discover-echarg ing-electric-vehicle-1/join

- How EV infrastructure will play a role in increasing the adoption of electric vehicles?
- The compelling case for a change in mobility in our cities
- Perspective: driver and infrastructure
- The 5 key enablers of EV infrastructure

Online EV seminars - Industry Talks



EV Charging

1 hour

https://register.

gotowebinar.com/

Organiser: IDTechEx

The Landscape for

EV policies: What's happening in Europe?

Organiser: EV Box

www.youtube.com/ watch?v=QzZR2DcLcQo

- Is financing enough to sustain the rise in electric vehicles?
- Are the right investment criteria in place to accelerate the take-up EV infrastructure
- Are infrastructure targets for member states are needed?
- What does price transparency mean?
- How can roaming be further promoted
- What requirements are needed for a truly open market
- Part of a series other episodes (including Outlook on EV smart charging: Where do we go from here?) are available online

 Analysis of the major charging infrastructure including conductive, wireless and battery swapping

register/8971254427303017487

- Analysis of fast charging, inductive and capacitive charging, robotic and autonomous charging, off-grid charging, mobile charging and vehicle-tohome/grid (V2H/V2G) and market trends
- Market forecasts by region (China, Europe, the USA and RoW), sector (passenger cars and fleet EVs), applications (private and public) and power level (AC and DC).

Roaming in EV charging - What it is and why you should care



Organiser: Virta

www.virta.global/roaming-inev-charging-webinar

- Roaming refers to an EV driver's ability to use various charging stations even if they're only a customer of one service provider. In practice, it means that electric car drivers can use charging stations with just one customer account.
- How and why does this play a crucial role in EV charging business?
- Internal & external roaming
- Peer 2 Peer (P2P) roaming
- The anatomy of roaming hubs & their effects



Online EV seminars - Industry Forums



$\stackrel{(1)}{\longrightarrow}$ 2.5 hours \mathbf{V}

Organiser: 360 Media

www.360mediagroupltd.com/ post/ev-forums-gainingmomentum

- Featuring speakers from BP Chargemaster, GRIDSERVE and Bristol City Council, including:
- How Bristol is investing in its EV Infrastructure and collaborating to achieve a greener future.
- How telematics is driving mass EV adoption and what fleets need to consider within their infrastructure planning.
- What progress fleets can expect to see in the charging infrastructure n the next 12 months and also the longer term outlook.
- Part of a series of EV Forum webinars which bring together practitioners and experts to share knowledge, insights and best practice

(1) 2 hours

The Electric Vehicle

Café - Public Sector

Organiser: Jonny Berry (Renault)

www.youtube.com/ playlist?list=PLAER-ysZh2syua7kDkJDrzYN_hKselpV

- Case studies and discussion from the UK including London, Oxford and Bristol.
- Part of the EV Café series, which brings together industry leaders and influencers in lively debate and discussion, in an informal lunchtime format.
- Further recorded episodes can be found online



In Brief



New Coordinator

We welcome Jacqueline Floch from our partner SINTEF who has taken over coordination duties for the second half of the project from our previous coordinator Joe Gorman. We wish Joe well and warmly welcome Jacqueline. You can find out more about her and her interests on the SINTEF website.

www.sintef.no/en/all-employees/ employee/?empid=303



New GreenCharge Project Coordinator, Jacqueline Floch of SINTEF

Hardware installed in Oslo

New outdoor charging units are being installed at the pilot in GreenCharge's apartment block experiment on the outskirts of Oslo. These will be publicly available and help test roaming interfaces, i.e. the ability for customers to access different suppliers' charging systems.



New hardware in Oslo for Fortum's Charge & Drive system

Networking with EV projects

GreenCharge had an internal online Zoom meeting in June 2020. Short pitches from other EV projects including Meister, STEVE and EFFICIENCE were followed by a short discussion on synergies with the GreenCharge project.







GreenCharge has published a number of technical project reports which can be found online.

Most of these relate to internal project planning processes, but are made publicly available for anyone to view and have a short executive summary to aid easy reading. Recent publications include:

- D1.1 Data management Plan
- D1.3 Innovation News & Updates
- D5.1 Evaluation Design
- D6.1 Stakeholder Acceptance Evaluation Methodology and Plan
- D5.2 Simulation and Visualisation Tools
- D5.1 Evaluation Design
- D6.1 Stakeholder Acceptance Evaluation Methodology and Plan
- D6.2 Data Collection and Evaluation Tools
- D8.1 Communication Strategy and Plan.

www.greencharge2020.eu/ deliverables

News to share? Contact us or share it with us on Twitter 🗐 @ GreenCharge2020



Feature Photo







European EV Charging Summit (1-2 September 2020)

GreenCharge presented at this conference in Rotterdam. A follow up story will be posted on the GreenCharge website. <u>www.greencharge2020.eu</u>

World EV Day (9 September 2020)

Social media campaign to promote electric car ownership, and spread awareness of electric vehicles more widely. <u>www.worldevday.org</u>

European Mobility Week (16-22 September)

The theme is "Zero-emission mobility for all" and once again cities across Europe will be taking part. Information on activities during the week can be found at: <u>https://mobilityweek.eu/2020participants</u>

European Sustainable Cities and Towns Conference (9.30am, 2 October 2020)

GreenCharge will host a session at this conference organised by ICLEI in partnership with the City of Mannheim. This will feature speakers from partners ICLEI and the City of Bremen, our Uptake City of Stockholm, the University of Westminster and the European Commission. Attendance at the event is free and registration is available here: <u>https://conferences.</u> <u>sustainablecities.eu/</u> <u>mannheim2020/registration</u>

Urban Mobility Days (2pm, 30 September 2020)

GreenCharge will be represented by our partner from the City of Oslo at this free online event, featuring various aspects of urban mobility. Registration is available here: www.eumd.org

Keep an eye on our website for other public electric mobilityrelated conferences and events, and follow our twitter feed for our latest updates <u>© GreenCharge2020</u>.











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