Grid must get itself ready for batteries on wheels and V2G technology, report says

Published on February 24, 2021 in TheDriven

A major new report has called on Australia’s energy market regulators and distribution network companies to fast-track reforms to grid connection standards and constraints, to pave the way for electric vehicle to grid (V2G) technology that will be crucial for managing a future with millions of batteries on wheels.

The 169-page report, compiled by a team at the Australian National University, is part of the Australian Renewable Energy Agency-backed Realising Electric Vehicle-to-Grid Services project, or REVS.

V2G, broadly speaking, is the concept of discharging an EV battery in order to serve a secondary purpose – which puts V2G in the same sort of basket as distributed storage, solar, and other forms of demand response.
Interdisciplinary Analysis of Social Acceptance Regarding Electric Vehicles with a Focus on Charging Infrastructure and Driving Range in Germany

- Published on February 11, 2021 on MDPI

As a key component in a more environmentally friendly, resource-saving, and efficient transport sector, electric mobility promises to create better sustainability. Several challenges still need to be met to exploit its full potential. This requires adapting the car technology, the value chain of vehicles, loads on the electricity network, the power generation for the drive, traffic, and charging infrastructure. The challenges to this endeavour are not only technical in nature, but they also include social acceptance, concerns, and economic, as well as ecological, aspects. This paper seeks to discuss and elucidate these problems, giving special focus to the issues of driving range, phenomenon of range anxiety, charging time, and complexity of the charging infrastructure in Germany. Finally, the development of social acceptance in Germany from 2011 to 2020 is investigated.

[continue reading…]

Zap-Map survey reveals key trends in UK’s electric vehicle market

- Published on February 16, 2021 in Greenfleet

Zap-Map has published a full report of its EV Charging Survey, a comprehensive look at the state of Britain’s electric vehicle charging network

The report reveals new trends in EV charging behavior in the UK based on the experience of 2,200 drivers who responded to the survey.

One of the new trends is the rise of high-powered charge points. In 2020, 16% of EV drivers used ultra-rapid chargers, up from 3% the year before. Over the past 12 months there has been an increase in rollout of these charge points; there are now 788 ultra-rapid chargers across the country, up from 476 at the end of 2019. These charge points cut the average charge time compared to a standard 50-kilowatt rapid charger by half. Most of the latest EV models such as VW ID range, Jaguar I-Pace, Tesla Model 3, Hyundai Kona and Vauxhall Corsa-e can take advantage of these higher charge speeds.  

[continue reading…]
EV Owners with Permanently Mounted L2 Chargers At Home Are More Satisfied: JD Power
- Published on 16/2/2021 in Insideevs

According to the U.S. Electric Vehicle Experience Home Charging Study administered by JD Power, overall home charging satisfaction is the highest among EV owners who choose to install a Level 2 permanently mounted charging station… [continue reading…]

Your Survey Responses On EV Charging At Apartment Complexes
- Published on 18/2/2021 in CleanTechnica

We recently surveyed owners and managers of apartment complexes and other multi-family residential properties to try to understand how they are approaching the topic of electric vehicle (EV) charging, what they are getting out of it, and hurdles they’re facing… [continue reading…]

Topic classification of electric vehicle consumer experiences with transformer-based deep learning
- Published on 12/2/2021 in ScienceDirect

A large, untapped source of EV mobility data is unstructured text generated by mobile app users reviewing charging stations. Using transformer-based deep learning, we present multilabel classification of charging station reviews with performance exceeding human experts in some cases. This paves the way for automatic discovery and real-time tracking of EV user experiences, which can inform local and regional policies to address climate change… [continue reading…]

Video Argues Charging Is the Main Hurdle Preventing Mass Global EV Adoption
- Published on 24/2/2021 in Insideevs

Limited and sometimes unreliable electric vehicle charging networks are one of the main reasons why people aren’t flocking to buy EVs… [continue reading…]

Electric Vehicles and Psychology
- Published on 13/1/2021 in ProQuest

The purpose of this paper is to present and discuss the psychological aspects that influence the adoption of electric vehicles. Topics such as the chicken and egg paradox (electric vehicles and charging stations) and performance anxiety (regarding, e.g., range) are addressed. This review is characterized by contradictions and irony… [continue reading…]

Electric and conventional vehicle usage in private and car sharing fleets in Germany
- Published on 1/4/2021 in ScienceDirect

We use car-level micro data to provide empirical evidence on the usage of conventional and electric vehicles (EVs) in private and car sharing fleets in Germany. We shed light on both monetary and non-monetary barriers to EV usage by exploiting the feature that variable costs are identical for shared vehicles but different for private car owners across engine types… [continue reading…]
Volkswagen leads consortium to develop wireless road charging for electric cars

- Published on February 4, 2021 on Thedriven

A consortium led by German car maker Volkswagen will develop and implement a project called eCharge that would see electric cars charge as they drive via the road.

The consortium, which has won €1.9 million ($A3 million) in funding from the German government, also includes Israeli wireless road charging company Electreon, along… [continue reading…]

Sustainable Electric Personal Mobility: The Design of a Wireless Charging Infrastructure for Urban Tourism

- Published on February 4, 2021 in MDPI

This research focuses on a personal electric mobility system for urban tourism. Some tourism sites such as Gyeongju, Korea, have broad spaces for tourists to walk around, but the public transportation system has been insufficiently developed due to economic reasons. Therefore, personal mobility technology such as electric scooters can be regarded as efficient alternatives… [continue reading…]

Siemens Launches 96% Efficient Sicharge D Fast Charger

- Published on January 23, 2021 in Insideevs

It has an output of up to 300 kW and can handle 800 V battery systems.

Siemens introduces a new Sicharge D fast charger, marketing it as one of the most efficient DC charger on the market. The rated efficiency is 95.5%, but at peak, it's 96%.

The Sicharge D is modular and upgradable, with several power outputs - 160 kW, 180 kW, 240 kW and 300 kW. The cool thing about it is the dynamic power allocation between the two DC outputs (plus an optional AC output).

For those who need more outlets, there is an option to connect two additional external dispensers for a total of four DC plugs. Sounds great from a cost perspective, especially since rarely all stalls are used simultaneously… [continue reading…]
Wireless EV Charging, Then & Now – WAVE CEO Interview
- Published on 14/2/2021 in CleanTechnica
In this episode of our CleanTech Talk podcast interview series, Zachary Shahan, Director and CEO of CleanTechnica, Mike Masquelier, CEO of WAVE, and Alf Poor, CEO of Ideanomics, Inc., sit down to talk about wireless EV charging… [continue reading…]

ElectReon Presents World’s First Dynamic Wireless Charging of a Long-Haul Electric Truck while Driving on a Public Road [video]
- Published on 25/1/2021 in ElectricCarsReport
ElectReon, developing and implementing Wireless Electric Road Systems that wirelessly charges commercial and passenger electric vehicles while driving, has completed the deployment of 1.65 km of a dynamic wireless charging system on a public road in Gotland, Sweden, which is the largest deployment of its kind in the world… [continue reading…]

An ENERGY STAR charger specification program update
- Published on 2/2/2021 in Charged
The EPA’s ENERGY STAR label is one of the most widely known consumer symbols in the US. ENERGY STAR-certified products have helped consumers save an estimated $246 billion in energy costs since 1992, when the program began. In 2018, the ENERGY STAR program added EV chargers to the list of products that can earn its certification… [continue reading…]

Analysis of Impedance Tuning Control and Synchronous Switching Technique for a Semi-Bridgeless Active Rectifier in Inductive Power Transfer Systems for Electric Vehicles
- Published on 6/1/2021 in IEEEExplore
Impedance mismatch is one of the most serious problems in IPT systems for electric vehicles (EVs) because an EV is not always parked in the same location. Therefore, an impedance tuning control for semi-bridgeless active rectifiers (SBARs) is proposed in this paper to compensate for this mismatch. The proposed impedance tuning control is achieved by adjusting the turn-on point and duty of the SBAR without using any additional component… [continue reading…]
Probabilistic assessment of the impact of electric vehicles and nonlinear loads on power quality in residential networks
Published on July 01, 2021 on Sciencedirect
This paper presents a probabilistic methodology to assess the power quality impact (harmonics and voltage unbalance levels) in low voltage residential networks with increased simultaneous integration of nonlinear loads and electric vehicles. The uncertain behaviour of these loads is considered in the model by applying a probabilistic approach that accounts for their stochastic...
[continue reading...]

Charge: Scooter Docks & Charging Hubs For Any Company
Published on January 18, 2021 on Cleantechnica
Charge provides a variety of services aimed at providing spaces for every brand of shared scooter, and possibly even some privately owned ones. By offering shared spaces for any company’s scooters, there can be more safe spots to park and/or charge without taking up vital urban space that’s already crowded...
[continue reading...]

Audi “smart gateway” study shows how EVs can help balance the grid
- Published on January 20, 2021 in Thedriven
New research supported by German automaker Audi has highlighted how intelligent and grid-optimised electric vehicle charging can relieve stress on the electricity grid, effectively dismissing the claims of EV critics who doomsay street-wide blackouts if multiple EVs charge at the same time.
Audi worked with German IT service provider GISA and other software and hardware partners to simulate an overload scenario on a local power grid - based around multiple electric vehicles charging at the same time and with high power on a street supplied by a local network transformer.
The small-scale test highlighted how intelligent and grid-optimised charging, through the intelligent management of charging procedures, can prevent grid overload.
Specifically, utilizing a device known as a smart meter gateway which provides targeted communication between the charging electric car and the grid operator, charging can be scheduled to take place during periods of lesser grid demand...
[continue reading...]
Repsol and IBIL develop the first EV charging station with energy storage in Spain
- Published on 11/2/2021 in ElectricCarsReport
Repsol and IBIL have developed the first EV charging station for electric vehicles that incorporates energy storage at a Repsol service station on the N-I highway as it passes through the Basque town of Tolosa, in the province of Gipuzkoa… [continue reading…]

Photovoltaic and Electric Vehicle-to-Grid Strategies for Peak Load Shifting in Low Voltage Distribution System Under Time of Use Grid Pricing
- Published on 16/1/2021 in SpringerLink
This paper evaluates the impacts of integrating EVs and PV arrays in distribution networks by evaluating their effects in a given system, during a pre-characterized period with controlled charging and discharging strategy. It simulates EVs’ movement in a geographic region by considering a case study-based EV travelling pattern… [continue reading…]

Potential of Electric Vehicles for Providing Regulating Power Based on German Mobility
- Published on 4/2/2021 in AtlantisPress
The increasing adoption of EVs has encouraged the researchers to investigate their capability to absorb the surplus power generated from RES and compensate the power network in peaking hours where supplemental reserve might be required. For this purpose, this contribution presents a simulation-based approach assessing to what extent EVs can assist the grid by offering supplemental regulating reserve upon request. The simulation is conducted based on German mobility behavior… [continue reading…]

Coupled electromagnetic-thermal analysis of roadway inductive power transfer pads within a model pavement
- Published on 5/5/2021 in ScienceDirect
One particular design constraint of in-road IPT systems is the occurrence of local increases in temperature during operation due to power losses in the wireless charging pads. In this paper, safe operating conditions of an enclosed wireless power transfer pad within a pavement model were identified. This aspect has been studied less rigorously compared with the electromagnetic design. This paper presents a numerical thermal analysis of a double-D (DD) prototype IPT primary pad based on two possible configurations; flush-mounted or buried, within a model pavement… [continue reading…]

Australia’s Rectifier creates “stackable” EV charger module to meet urban and grid needs
- Published on 1/2/2021 in TheDriven
Australia’s Rectifier Technologies has created what it describes as a “stackable” fast charging power module that can cut costs and help address two of the biggest challenges in locating high-voltage electric car chargers - electromagnetic standards and grid compliance… [continue reading…]
Can anyone become a charging provider? Deftpower thinks so

The former team behind Plugsurfing and Allego has launched an AI-based software-as-a-service platform for electric vehicle charging. The promise: anyone who wants to enter the electric vehicle charging market should be able to set up their own charging app within 24 hours with Deftpower.... [continue reading...]

An Electric Vehicle Charging Reservation Approach based on Blockchain

This paper proposes a charging reservation service approach based on the consortium blockchain and smart contract technology. Users can choose the charging station and charging time period with no charging congestion, which is based on the charging information recorded in the consortium blockchain composed of stations located in distributed regions in a city. To ensure a user arrives at the charging station on time and charge within due time as he/she has reserved, a personalized pricing scheme for reward and punishment by utilizing smart contract is proposed... [continue reading...]

CYBER SECURITY IN MOBILITY

Shifting the focus from mobility safety towards mobility security

Technological breakthroughs are affecting the mobility ecosystem at a rapid pace. The continuing developments within the mobility sector raise questions about data sharing, data privacy, and cyber security from a mobility perspective. It is of vital importance that we think carefully about how we can best prepare for the future, how we can organize our systems and which parties we work with, and how we work with them. Especially considering that the aspects of cyber are changing and the boundaries between physical and digital are becoming increasingly blurred... [continue reading...]
Hyundai launches ‘Charge myHyundai’ - an integrated public EV charging service
- Published on 24/2/2021 in ElectricCarsReport

Hyundai Motor UK has today launched Charge myHyundai - an integrated public charging service offering Hyundai electric and plug-in hybrid vehicle customers a convenient charging solution. Owners of the brand's BEV and PHEV models will have access to the largest EV charging network in the UK and can enjoy a streamlined one-payment solution via a single app or single radio-frequency identification (RFID) card. The service offers transparent tariffs for all customers, designed to fit their individual charging preferences… [continue reading…]

EVBox Group launches charge management platform
- Published on 4/2/2021 in Electrive

EVBox Group’s Everon presents a charging management platform designed to give fleet and site managers more control over the performance of their EV charging infrastructure with the new ‘Business Portal’ software… [continue reading…]

Chargemap & FreshMile expand charging cooperation
- Published on 10/1/2021 in Electrive

In France, charging network operator FreshMile and charging specialist Chargemap have expanded their cooperation. Until now, access to Freshmile charging stations with the Chargemap badge has been via roaming. Now, the Chargemap and Freshmile services are connected directly via the open protocol OCPI… [continue reading…]

A Novel Power Market Mechanism Based on Blockchain for Electric Vehicle Charging Stations
- Published on 27/1/2021 in MDPI

This work presents a novel blockchain-based energy trading mechanism for electric vehicles consisting of day-ahead and real-time markets. In the day-ahead market, electric vehicle users submit their bidding price to participate in the double auction mechanism. Subsequently, the smart match mechanism will be conducted by the charging system operator, to meet both personal interests and social benefits. After clearing the trading result, the charging system operator uploads the trading contract made in the day-ahead market to the blockchain… [continue reading…]
Smart electric vehicle charging strategies for sectoral coupling in a city energy system

- Published on April 15, 2021 in ScienceDirect

The decarbonization of city energy systems plays an important role to meet climate targets. We examine the consequences of integrating electric cars and buses into the city energy system (60% of private cars and 100% of public buses), using three different charging strategies in a modelling tool that considers local generation and storage of electricity and heat, electricity import to the city, and investments to achieve net-zero emissions from local electricity and heating in 2050... [Continue reading…]

Optimal fast charging station locations for electric ridesharing with vehicle-charging station assignment

- Published on January 01, 2021 in ScienceDirect

Electrified shared mobility services need to handle charging infrastructure planning and manage their daily charging operations to minimize total charging operation time and cost. However, existing studies tend to address these problems separately. A new online vehicle-charging assignment model is proposed and integrated into the fast-charging location problem for dynamic ridesharing services using electric vehicles. The latter is formulated as a bi-level optimization problem to minimize the fleet’s daily charging operation time. A surrogate-assisted optimization approach is proposed to solve the combinatorial optimization problem efficiently. The proposed model is tested on a realistic flexible bus service in Luxembourg. The results show that the proposed online... [Continue reading…]

Charging infrastructure planning tool for local authorities launched

- Published on February 25, 2021 in GreenFleet

Field Dynamics has developed a tool to help local authorities with the challenges involved with delivering electric vehicle charging infrastructure.

Field Dynamics has worked with local authorities to combine advanced national datasets, cloud services and local knowledge, through a series of objective analysis sessions, resulting in the authority building a planning and implementation tool set that can be used both at the point of operational hand-off and as a vital reference resource to review processes.

The tool, called JumpStart, helps authorities and their advisors to create strong data-led policy, gain stakeholder support, secure government funding and engage with external suppliers... [Continue reading…]
Exploring Planning and Operations Design Space for EV Charging Stations
Published on March 22, 2021 in Google Patents

This paper focuses on an EC charging station architecture comprising PV panels, an energy storage system (ESS) and multiple fast-DC charging posts. In this paper, we derive EV charging station operation policies by formulating an average reward Markov decision process (MDP) maximization problem to synthesize controllers that maximize the operating income. Then, these controllers are used to evaluate the operating income, for the purpose of EV charging station planning... [Continue reading…]

Planning charging infrastructure deployment: A new spatio-temporal model.
Extended abstract for the Euro Working Group on Transportation 2021
- Published on February 13, 2021 in HAL

The current trend is a transition from the current fleet of vehicles to a fleet of electric vehicles. To allow this transition, it is necessary to ensure the acceptance of the electric vehicle among its users. This acceptance requires the deployment of a charging infrastructure adapted to user needs. In this study, we propose a multi-criterion charging infrastructure deployment model, not only geographically but also temporally, in order to... [Continue reading…]

STRATEGIC PLANNING OF PUBLIC CHARGING INFRASTRUCTURE
- Published on January 01, 2021 in Econstor

With an increasing number of electric vehicles, the strategic planning of public charging infrastructure becomes more important. In this work, the infrastructure of the charging stations in a large city is simulated. Here, various influencing factors such as number of users, charging time, charging frequency, type of the charging station and billing model are modified in order to obtain the optimal construction and operation of public charging infrastructure. The results illustrate conditions under which a system for public charging infrastructure becomes un... [Continue reading…]

Too much or not enough? Planning electric vehicle charging infrastructure: a review of modelling options
- Published on February 01, 2021 in Hal

Here we review the literature on location problems for charging stations. We aim to draw up a comparative overview of approaches that are used up to 2020 to simulate and assess the impacts of charging infrastructure location strategies. Three categories of approaches are identified: node, path, and tour- or activity-based approaches. We also analyze technical, economic and user acceptance factors to provide a comprehensive analysis for stakeholders involved in EV charging infrastructure planning. Directions are given for future research to... [Continue reading…]

Google Maps gets much better to plan electric car trips
- Published on January 29, 2021 in ElectricsCarReport

Newly developed routing algorithms that use a type of math called graph theory serve up stress-free routes and charging stop recommendations in the latest release of Google Maps that's built into participating EVs, including the Polestar 2 and Volvo XC40 Recharge... [Continue reading…]

Ironing out the challenges of public EV charging
- Published on January 11, 2021 in GreenFleet

Geoff Murphy speaks about the Charge Project, an initiative to accelerate the roll-out of public electric vehicle charging infrastructure within the Merseyside, Cheshire, North Shropshire and North & Mid Wales area... [Continue reading…]
Taxi trajectory data based fast-charging facility planning for urban electric taxi systems

- Published on March 15, 2021 on Sciencedirect

This study develops a taxi trajectory data based fast-charging facility planning model for an urban taxi system by considering battery degradation and vehicle heterogeneity in driving range. The developed model comprises three functional modules: (i) fast-charging location determination, (ii) fast-charging facility deployment (FCFD) and (iii) FCFD solution tuning... [continue reading...]

Economics of Electric Vehicle Charging Infrastructure in a Campus Setting

- Published on February 18, 2021 on ieeexplore

In this work, we search for the lowest-Net Present Cost (NPC) charging infrastructure plan for a university campus. The campus expects an ongoing shift towards EVs and wants to supply zero-carbon electricity for EVs as a way to manage the emissions of vehicles coming to campus. We study what infrastructure the university would want to build and when, given factors like project economy of scale (suggesting larger projects) and cost declines in most... [continue reading...]

On-street EV charge point pilot in Hampshire

- Published on February 26, 2021 in Greenfleet

Hampshire County Council is having 50 new on-street electric vehicle chargepoints installed in Eastleigh and Winchester as part of a pilot scheme to be launched in March.

The pilot involves the installation of two different types of on-street EV chargepoints - streetlighting columns, which will be used in the Winchester trial and bollards which will be used in the Eastleigh trial. This follows a successful funding bid to the government's Office for Zero Emission Vehicles, from which £125,000 grant was awarded for the project which was also funded by Hampshire County Council... [continue reading...]
Shenzhen: The City With 16,000 Electric Buses & 22,000 Electric Taxis

Published on 13/2/2021 in Insideevs

While in most of the countries there are not even 1,000 electric buses, in China, there are cities with thousands of electric buses… [continue reading…]

Tritium to build largest universal EV charging hub in North America

Published on 5/2/2021 in TheDriven

Brisbane-based electric car charger company Tritium, which is backed by coal baron Trevor St Baker’s St Baker Energy Innovation Fund, is partnering with US-based electric mobility company Revel to build what it says will be its largest universal fast-charging site in North America… [continue reading…]

Prague’s charging infrastructure set to grow

Published on 25/2/2021 in Electrive

The city of Prague has adopted a plan that will initially see the building of over 750 charging stations for electric cars. These are to be placed at strategically favorable locations in the Czech capital within the next four years. The City has also outlined plans for further expansion… [continue reading…]

Paris public transport operator orders 274 Ekoenergetyka bus chargers

Published on 19/1/2021 in Electrive

The Polish charging infrastructure provider Ekoenergetyka has received another major order. The Paris-based public transport operator RATP has commissioned Ekoenergetyka-Polska to supply electric bus chargers with a total capacity of around 24.5 megawatts… [continue reading…]

Who is using e-scooters and how? Evidence from Paris

Published on 1/3/2021 in ScienceDirect

In this paper, we first define micromobility. Then, we present the design and results of an extensive face-to-face road survey among e-scooter (ES) users in Paris (N = 459, F(men) = 68%). Results indicate that ES users rarely own their proper microvehicle, are mostly men, aged 18-29, and have a high educational level. They are not less motorized than the general population and use ES occasionally… [continue reading…]
France funds fast-charging sites with €100Mn

- Published on February 15, 2021 in Electrive

The French government is launching a 100-million-euro funding programme to build more charging stations for electric cars on the national road network. The scheme is for companies installing charging hubs with at least four fast-charging stations.

The decree was published in the Official Gazette (Journal Officiel) on Sunday and declares support will be given to companies that build fast chargers on France’s main transport axes. Each site must have four fast-charging stations, including at least two 150-kW stations… [continue reading…]

Simulation Study of Dynamic Bus Lane Concept

- Published on January 27, 2021 in MDPI

The paper presents the methodology and calibration process used for DBL modelling. For the selected four sites in Rzeszów (Poland), three options were analyzed: no bus lane, standard exclusive bus lane (XBL), and dynamic bus lane. The analyses were carried out using PTV Vissim software with an additional logic script to control the DBL activation… [continue reading…]

Porsche, Enel X & Q8 boost ultra-fast charging in Italy

- Published on February 15, 2021 in Electrive

Porsche Italia partners with Enel X to install high power charging stations in Italy. Kuwait Petroleum Italia is also on board with the Q8 service stations where the new ultra-fast charging stations will be located.

Porsche envisions up to 300 kW charging power for each HPC column and wants to set up shop at 20 pitstops of Q8 by the end of this year. Once operational, the new sites will appear in Porsche’s mobility ecosystem and displayed in Enel X’s JuicePass app.

The deal reserves one charge bay for Porsche customers at each location. The Taycan, with its 800-volt architecture, will be able to recharge to 80% in about 20 minutes at the Q8 stops.

Pietro Innocenti, CEO of Porsche Italia, also pointed out existing ultra-fast charging stations at 30 Italian Porsche Centers and charging facilities at “prestigious destinations, such as the restaurants and hotels that normally serve our customers”… [continue reading…]
BP and Uber extend pilot across Atlantic to deploy EV chargers
- Published on 2/2/2021 in TheDriven

An alliance between oil and gas supermajor BP and rideshare giant Uber will see a pilot network of electric vehicle chargers deployed in the US city of Houston, Texas, replicating an initiative launched last year in London… [continue reading…]

Daimler and PGE develop the electric truck stop of the future
- Published on 23/2/2021 in Charged

The Electric Island project, a collaboration between Daimler Trucks North America and Portland General Electric, will be a test bed for all kinds of heavy-duty EV charging solutions… [continue reading…]

Brooklyn Getting USA’s 1st EV Fast Charging “Superhub”
- Published on 9/2/2021 in CleanTechnica

The company, Revel, is putting 30 EV fast chargers into a “Superhub” in Brooklyn, New York. It is a record-breaking facility, in fact. “The site will be the largest universal fast charging depot in North America, with 30 chargers open to the public on a 24/7 basis and accessible to owners of any electric vehicle brand,” Tritium writes… [continue reading…]

- Published on January 15, 2021 on Google Scholar

This paper proposes a comprehensive methodological framework to evaluate the potential benefits and costs of utilizing grid-connected parking lot spaces to promote energy supply sustainability in future power distribution grids. Capacity-value-based and cost effectiveness indexes are developed, which quantify the potential contribution of parking lots to... [continue reading...]

Stimulating E-Mobility Diffusion in Germany (EMOSIM): An Agent-Based Simulation Approach

- Published on January 28, 2021 in MDPI

The German Climate Action Plan targets an electric vehicle fleet of 6 million by 2030. However, from today's perspective, we are far away from a path that is steep enough to reach this goal. In order to identify how different policy instruments can stimulate e-mobility diffusion in Germany, we build and calibrate an agent-based simulation model (ABM)... [continue reading...]

How to design tenders for e-charging infrastructure - new Handbook for public authorities

- Published on February 15, 2021 in ec.europa

The European Green Deal aims to make Europe climate neutral by 2050, boosting the economy through green technology, creating a sustainable industry and transport, and cutting pollution. The Smart and Sustainable Mobility Strategy proposes a variety of actions, including the expectation that a possible fleet of up to 13 million electric vehicles in 2025 will require the number of publicly accessible recharging points to grow from approximately 200,000 in 2020 to at least 1 million in 2025.

To support them on this endeavour, the Sustainable Transport Forum expert group has drawn up a set of recommendations for public authorities procuring, awarding concessions, licenses and/or granting support for electric recharging infrastructure for passenger cars and vans (M1 and N1 category of vehicles according to UNECE standards) ... [continue reading...]
On Electromobility Development and the Calculation of the Infrastructural Country Electromobility Coefficient

Published on 25/1/2021 in ProQuest

In this paper we ask to which extend are Visegrád Group countries prepared for the widespread utilization of electric cars and define a new coefficient K called the infrastructural country electromobility coefficient. Its computing is covered by appropriate analysis and calculations done previously. Several indices that keep particular information about the state of preparation for electromobility are defined and debated here, as well. Their product forms the coefficient K. Obtained results include outcomes and discussion regarding the level of infrastructural electromobility preparedness for the chosen states, among which we extra focus on the position of Slovakia compared to the European Union average and European electromobility leaders… [continue reading...]

Economics of Electric Vehicle Charging Infrastructure in a Campus Setting

Published on 18/2/2021 in IEEEXplore

In this work, we search for the lowest-Net Present Cost (NPC) charging infrastructure plan for a university campus. The campus expects an ongoing shift towards EVs and wants to supply zero-carbon electricity for EVs as a way to manage the emissions of vehicles coming to campus. We study what infrastructure the university would want to build and when, given factors like project economy of scale (suggesting larger projects) and cost declines in most technologies over time (suggesting delaying deployment) … [continue reading...]

Examination of Charging Infrastructure for Electric Vehicles Based on Components of Sustainable Business Models

Published on 18/2/2021 in IEEEXplore

Governments in various countries are promoting electromobility with high subsidies but success has not yet been achieved. One reason is the lack of charging stations. Due to limited number, inadequate standards, unclear tariffs and technical deficiencies, charging an electric vehicle is less convenient than refueling an internal combustion vehicle. Motivation for companies is too low to make substantial investments. Significant reason is the lack of innovative business model which are necessary for the commercial success. In the following paper, elements of sustainable business models are worked out and proposals for innovative and sustainable business models are developed… [continue reading...]

Legal Instruments in the Development of Electromobility in the European Union, with Particular Focus on Planning Acts

Published on 19/2/2021 in CZAS

This paper discusses and characterizes actions undertaken for the development of electromobility as part of the incentive policy pursued by the state. In most European countries, development of the electric vehicle market is largely contingent on electromobility policies, but the measures adopted with a view to supporting it do not always yield the expected results… [continue reading...]
A Novel Distributed System of e-Vehicle Charging Stations Based on Pumps as Turbine to Support Sustainable Micromobility

- Published on February 08, 2021 on MDPI

In this work, it is proposed to use a new e-vehicles charging system based on Pumps used as Turbine (PATs). This system uses the pressure in excess that could be available in a water distribution network (WDN). Such an excess of pressure is usually destroyed by pressure-reducing valves with the aim to reduce water leaks. PATs are also able to reduce water pressure and produce electrical energy that can be supplied to e-vehicles charging stations. Then, a bi-level... [continue reading...]

The Problem of Electric Vehicle Charging: State-of-the-Art and an Innovative Solution

- Published on January 01, 2021 in Google Patents

This paper presents a comprehensive literature review with focus on the difficulties electric vehicles (EVs) face to charge the battery while on a trip and proposes a solution without the need of an expensive change in infrastructure. The proposed method charges EVs whi... [continue reading...]

Flying Taxis Will Hit LA Skies by 2024, According to a California Startup’s Plan

- Published on February 24, 2021 in SingularityHub

Air taxis still seem like a far-off concept, especially in a time when a lot of people have stopped flying or using shared transportation altogether. But the technology has continued to advance nonetheless, as has the regulatory environment that will be a big part of determining when flying taxis can safely and legally take to the skies. An announcement this week from electric aircraft startup Archer Aviation just brought a future where you can hail a flight across town one step closer.

One of the first cities where this will be possible is Los Angeles. Archer announced yesterday that it plans to launch a network of air taxis in the city by 2024. The aircraft manufacturer joined forces with the LA mayor’s office, its Department of Transportation, and a public-private partnership called Urban Movement... [continue reading...]

Volkswagen Group reveals electric vehicle charging robot

- Published on January 04, 2021 in GreenFleet

Volkswagen Group Components has revealed its charging robot which independently steers itself to a vehicle and charges it... [continue reading...]