

Innovate UK

Results of Competition: Electric Vehicle Charging for Public Spaces: Feasibility Studies

Competition Code: 1807_FS_OLEV_ELEC_ST1

Total available funding is £1,323,907

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
ZAPINAMO LIMITED	ZAPINAMO HUBZ for EV Charging	£65,560	£45,892
Devon County Council		£11,259	£11,259
GAMMA ENERGY LIMITED		£43,030	£30,121

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Funders Panel Date: 28/09/2018

Project description - provided by applicants

The ideal solution to EV charging in public spaces will be able to fit around whatever street furniture is there already, have no impact on grid supply, be cheap to install and offer easy relocation in response to changing demand patterns. ZAPINAMO HUBZ is such a solution. It has the potential to fit elegantly around existing street furniture or into a corner of a car park bay, taking up minimum additional space. Each unit is interconnected with others via safe above ground trunking, meaning an EV driver can park anywhere in a ZAPINAMO HUBZ-equipped car park or on-street location. User interfaces will allow them to select a trickle charge, possibly with a delay to take advantage of off-peak pricing or pay premium for a rapid charge from ZAPINAMO HUBZ storage. Above ground trunking eliminates groundworks, making ZAPINAMO HUBZ rapid and inexpensive to install.

In this project, Zapinamo have formed a consortium with Gamma Solar Energy Ltd (Gamma) and Devon County Council (DCC). They will work together to better understand the particular challenges of EV use and charging around Devon, namely: current lack of chargepoints; an electricity grid with no spare capacity in the majority of locations; longer journeys than elsewhere due to dispersed population; need to preserve aesthetics of streetscapes; need to maintain pedestrian and vehicle access along streets that are often narrower than UK average.

ZAPINAMO will work to adapt HUBZ around these criteria, in close collaboration with DCC . They will also develop other uses for ZAPINAMO HUBZ, potentially as parcel storage/collection, advertising, traffic monitoring or crime prevention via CCTV. They will also further develop potential data based benefits to installers, operators, users and local retailers. These include energy cost reductions, user convenience features, efficacy of supply data and more. Gamma will own and operate infrastructure post-project. They will develop business models that maximise use of clean, local energy and develop flexible pricing models that will boost EV uptake.

With its modular design that fits virtually anywhere, easy installation, flexible operation and ability to provide EV charging with minimal grid impact, ZAPINAMO HUBZ, powered by Gamma's solar PV farms, complete the pathway of clean, local energy to clean vehicles.

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A.T.KEARNEY LIMITED	Project i-flex (Intelligent flexible charging infrastructure)	£34,987	£17,494
4TH DIMENSION TECHNOLOGY LIMITED		£32,586	£22,810
BRIXWORTH TECHNOLOGY LIMITED		£17,993	£12,595
CENEX (CENTRE OF EXCELLENCE FOR LOW CARBON AND FUEL CELL TECHNOLOGIES)		£14,660	£14,660
University of Nottingham		£16,996	£16,996

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The feasibility project and our consortium partners will focus on evaluating the technical viability and social and economic impacts of developing a fully integrated assessment and hardware specification system for public charging installation.

We will define and test three core solutions to support the timely wide scale uptake of public charging assets, both as retrofit solutions into densely populated urban areas and new 'out-of-town' solutions. Our partners are A.T. Kearney (lead), 4th Dimension, Brixworth Technologies, University of Nottingham and Cenex. Nottingham City Council, Nottingham City Homes, a leading DNO, a leading multi-national O&G, Isle of Wight Council, DG Cars, Peel Group, Bruntwood, Transport Systems Catapult and Manchester City Council all sit on the advisory board and will become full partners at the demonstration phase of the project if successful.

The primary objectives of this feasibility project are as follows:

- 1\. Begin development of an automated site assessment and installation management app.
- 2\. Create a methodology to assess location hot spots for public charging infrastructure.
- 3\. Identify the economic, social and environmental benefits and disadvantages to a standardised assessment and installation process, tailored to sites by archetype.

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GRIDSERVE SUSTAINABLE ENERGY LIMITED	Feasibility Study for UK's first Solar Electric Forecourt	£83,055	£58,138
UPSIDE ENERGY LTD		£31,099	£21,769

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Project description - provided by applicants

GRIDSERVE are bringing to the UK market a revolutionary product and concept: the Electric Forecourt(tm) that addresses the current public concerns about mass-market charging of electric vehicles whilst simultaneously generating renewable energy and solving grid challenges. The concept is highly aligned to the UK Government's 2018 Road to Zero strategy. Our products are designed for the modern age and will make owning and operating an electric vehicle in the United Kingdom an enjoyable, convenient and stress-free experience.

Our vision for the project is to assess the commercial feasibility, select a suitable site and design a technical solution for the UK's first Solar Electric Forecourt - a utility-scale, grid-connected, renewable energy powered piece of next generation transport infrastructure. This innovative solution will offer convenient, mass-market, charging infrastructure that incorporates ultra-rapid DC vehicle charging, battery storage and solar generation on a single site location. The project will test feasibility of managed charging use cases and business models for Solar Electric Forecourts in a variety of urban and urban-fringe environments. Our partner, Upside Energy will focus on models to optimise additional revenue by using flexibility of Forecourt batteries and charging facilities both to provide balancing services to the grid and to optimise revenue earned from solar PV generation linked to the Forecourt (either physically or virtually).

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FREEWIRE TECHNOLOGIES LIMITED	FreeWire: flexible, mobile EV charging for UK streets	£61,254	£42,878
Westminster City Council		£16,520	£16,520

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Project description - provided by applicants

This project is a collaboration between FreeWire and Westminster City Council to explore the feasibility of FreeWire's innovative mobile electric vehicle charging system (Mobi Charger) on the streets of London.

EV charging places heavy burdens on local energy infrastructure that will become increasingly unmanageable as the EV fleet grows. In particular, users lacking residential off-street parking have limited options for charging their EVs, as installing large quantities of on-street EV charging infrastructure is costly, inefficient and disruptive, requiring extensive construction/excavation work in order to connect to the electrical grid.

The Mobi Charger can provide fast-charging coverage to numerous streets or a whole car park at a small fraction of the cost of existing options. As a battery system, the Mobi Charger provides extremely fast charging peak hours without placing a strain on the electrical grid, and would subsequently be recharged much more slowly.

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ELEMENT ENERGY LIMITED	Subsurface Technology for Electric Pathways (STEP)	£18,198	£12,739
Birmingham City Council		£10,531	£10,531
London Borough of Brent		£8,866	£8,866
TROJAN ENERGY LIMITED		£71,401	£49,981
UK POWER NETWORKS (OPERATIONS) LIMITED		£11,000	£0

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Project description - provided by applicants

Significant EV adoption is crucial for the UK to meet its climate targets and tackle air pollution in cities. Battery costs and consumer acceptance are improving, but one of the remaining barriers inhibiting rapid uptake of EVs is lack of public recharging infrastructure. A substantial 8 million vehicle owners in the UK today do not have access to off-street parking and therefore cannot charge an EV at home.

There are several approaches to this problem, however each have drawbacks:

- * Standalone on-street chargepoint - often inconveniently located (i.e. not targeted at residents), expensive, and bulky equipment presents access issues
- * Lamppost charging - cheap but limited to lampposts close to the road (or cables have to cross pavements, be fed underneath or slotted into trenches). Power restricted to 2-5kW
- * Wire trenches - slotting cable in the pavement between chargepoint in home and car. Needs users parked directly outside their house, which can't be guaranteed
- * Pop-up and wireless charging - in early stages of development
- * Rapid charge hubs - no evidence yet that this is a solution for residents

The Trojan Energy system however, presents a novel, cost-effective solution to the lack of on-street chargepoints. It involves a flush connection, where the chargepoint is slotted into the ground, resulting in no permanent footprint or street clutter - there is only equipment on the street when the vehicle is charging. To charge an EV, the user inserts the 'lance' (which is stored in the vehicle) into the connector, and the other end plugs into the car.

Trojan plans on fitting entire streets with the technology, with each connector placed about 5m apart, so that no matter where a consumer parks on the street, they will be able to charge their EV. Another advantage is that 20 connectors can run in parallel, requiring only one grid connection, which reduces costs and enables more effective grid management.

In order for the technology to be successfully implemented, it first needs to: be tested and trialled; incorporate feedback from industry experts and potential users into the design; and a viable business model needs to be developed. This project involves the study of these aspects, as well as other commercial, user, urban and technical feasibility aspects, including appropriate certification methods. Outputs of the study will

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be used to develop the plan for the demonstrator trial, which will then prove viability of the system in real life.

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PARKING ENERGY LTD	Charging Hub Buffer Battery Feasibility Study - CHUBBY	£57,328	£40,130
CENEX (CENTRE OF EXCELLENCE FOR LOW CARBON AND FUEL CELL TECHNOLOGIES)		£9,406	£9,406
ESF Europe Ltd		£9,610	£0

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Project description - provided by applicants

This study, 'Charging Hub Buffer Battery Feasibility Study' (CHuBBY), will identify opportunities for medium to large scale public charging hubs, focusing on currently available and upcoming technologies for both Direct DC and conventional DC charging in combination with scalable on-site buffer battery solution.

The study will explore and deliver a technical framework design for public charge hubs based DC charging combined with local energy storage. It will compare and evaluate suitable technologies and their impact on EV drivers, other road users and impact on communities and transport.

Key outcomes are a technical solution for neighbourhood EV charge hubs and a commercial deployment model for councils and charge point operators..

The project aims to identify technical specifications, planning and infrastructure requirements and viable business cases for large scale public charging hub solutions based on direct DC-DC conversion technology, modular local energy storage and close integration with supply-side energy market operations. We will also determine social, operational and economic benefits of advanced charging hubs in neighbourhood and commercial centre deployments.

The work will advance the high-tech sector in the UK, create employment opportunities and attract inward investment into the UK.

The outcomes of this study will pave way to a demonstration for using massively scalable DC charging in a practical charging hub settings. Such a study will also endorse the UK as an international leader in demonstrating the potential of new and emerging technologies in the field of clean mobility, meeting the aspiration set out in the Government's Road to Zero Strategy.

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The final report will be published and Cenex will also organise a workshop using the successful OLEV supported LEVEL (Low Emission Vehicle Enterprise and Learning) programme to disseminate the findings.

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CHAR.GY LIMITED	Char.gy Residential Wireless Charging Feasibility Study	£86,022	£60,215
London Borough of Redbridge		£100	£0
University of Warwick		£18,806	£18,806

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Project description - provided by applicants

This project takes newly developed lamppost mounted on-street residential charge points and further enhances their usability and ease of deployment by leveraging the emerging induction charging technologies. The project, if successful, will allow residents without off-street parking to charge their electric vehicles in their usual parking bays outside their houses. The project seeks to overcome the challenges of induction pads on residential streets, of the lack of support from motor manufacturers for standardised induction charging enabled cars, of leveraging existing technologies to supply and pay for the electricity and to establish supply chains to mass produce the induction pads.

The key objectives of the feasibility stage are to:

- Understand the needs and concerns of interested parties (local residents, vehicle owners, interest groups)
- Investigate and select an induction charging partner, reviewing a range of candidate against our key criteria
- Explore short and medium-term options for after-market integration of pick-up coils into existing vehicles
- Understand and mitigate various technical complexities including physical coil installation for road surfaces, charge-point integration with car management system via induction coils and necessary changes to charge point and back-end software systems
- Develop a candidate solution architecture and business case for a further demonstrator phase using selected locations in the London Borough of Redbridge and other councils.

Our main area of focus is establishing a viable technical solution with an induction charging partner that provides candidate mechanism to mitigate identified complexities and risks that we can test thoroughly during a demonstrator stage.

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URBAN FORESIGHT LIMITED	Clean Streets EV Infrastructure Toolkit: Feasibility Study	£49,151	£34,406
DUNDEE CITY COUNCIL		£0	£0
LUCY ZODION LIMITED		£36,919	£22,151
URBAN ELECTRIC NETWORKS LTD		£30,428	£21,300

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Project description - provided by applicants

Our project will meet the challenge of providing low-cost charging solutions at scale for electric vehicle users without access to off-street parking.

Recognising that 87% of EV drivers want to charge 'at home' and that 30% - 43% of UK households have no access to off-street parking for charging, we believe that, although there is an important role for public charging facilities such as EV hubs, the only fully scalable solution involves providing affordable, dependable, smart grid enabled on-street Electric Vehicle Supporting Equipment (EVSE). Furthermore, we believe that to be successful it is vital that this equipment has a neutral or positive impact on the urban streetscape.

To this end, the project partners, Urban Foresight, Urban Electric Networks, Lucy Zodion and Dundee City Council will create a "Clean Street" EVSE Toolkit for use by local authorities and their delivery agents. The Toolkit will use a combination of technology and design approaches for deploying on-street charging for town and city residents, businesses and visitors in a way that minimises impacts on accessibility, functionality and the look-and-feel of city streets. It will deliver a clear methodology for application in the context of a particular location, providing a set of practical guidelines, design criteria, and specifications in the framework of a sustainable investment model.

Phase 1 of the project will consider the key elements of the toolkit will consist, namely:

? In-ground and aesthetically designed EV chargers with integrated feeder pillars that minimise the impact of on-street EVSE. Our project builds on Urban Electric Networks' successful UEone Innovate UK-funded pop-up charger trials in Oxford;

? In-ground parking sensors that, through a user-friendly guidance and payment app enable EV drivers to know in advance whether an on-street parking and charging space is available, building on over 500 Bluetooth Low Energy sensors in on-street parking bays, to be deployed throughout Dundee over the next 18 months;

? Design tools and options for integrating EVSE functionally and aesthetically into a variety of city streetscapes, e.g. residential, commercial, tourist;

? A Special Purpose Vehicle financial model that incentivises and rewards local authorities for the creation of on-street parking and charging

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facilities, without monopolising parking spaces for EVs.

The project will focus on initial deployment in Dundee, the ideal location to test feasibility and demonstrate the solution due to both its internationally recognised leadership in EV deployment and its position as the UK's only UNESCO City of Design.

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SHELL U.K. LIMITED	On street public charging innovation for home based fleet EVs	£97,064	£48,532
EV TECHNOLOGY LIMITED		£12,000	£8,400

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Project description - provided by applicants

Commercial fleets are generally accepted to play a pivotal role in the shift to alternative forms of energy in transport. Not only do they create early demand for zero emission vehicles, they also provide an essential second hand car market stock for private drivers. However, for fleets where drivers are home based, the lack of EV charging infrastructure for those without dedicated off street parking is potentially holding back EV adoption in this key segment. With fleet sales comprising 59% of the UK new car market, solving this would have a large impact on EV adoption rates.

That said, a critical barrier hindering investments in public charging infrastructure is the uncertainty over utilisation of the assets leading to high revenue risk. There is therefore the opportunity to investigate innovative business models to provide charging for fleets whose drivers don't have dedicated off street charging whilst also providing valuable demand for public charging infrastructure.

Our objective is to identify the business models, commercial structures and technology platforms that will accelerate the commercial fleet market, in turn driving the private market by unlocking pricing options for a wider range of demographics. To deliver on this we will work closely with our collaborators EV Technology, our sub-contractors Baringa and our partners, Connected Kerb.

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POD POINT LIMITED	Developing the optimum charging solution for Electric Vehicle drivers without off-street parking	£72,014	£43,208
Cardiff University		£14,490	£14,490
City of Cardiff Council		£8,448	£8,448

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Project description - provided by applicants

This project will test and validate an innovative charging solution that can electrify entire streets from a single connection point. The project will verify design variations with Cardiff City Council highway designers and urban planners, and help us to understand the social and behavioural impacts with Cardiff University carrying out a wide ranging research programme.

The project outputs will be a simple, easy to install, cost effective charging solution that will be applicable and acceptable in a wide range of street-scene environments. This will help Cardiff and ultimately every other urban area in the UK run successful cleaner air programmes through the mass adoption of Electric Vehicles.

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EB CHARGING LTD	Electric Vehicle Network Extender (EV-NetX)	£41,460	£29,022
HANGER19 LTD		£57,252	£40,076
HODOS MEDIA LIMITED		£19,897	£13,928

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Project description - provided by applicants

The EV-NETX project is seeking to address key barriers to the adoption of electric vehicles (EVs); the cost of infrastructure, the ease of use of that infrastructure, and the challenging business case for investing in that infrastructure.

Our current business model for EV charging is based around a margin on the energy sold through the network. This requires a well utilised asset and a high turnover of vehicles. This is in direct conflict with the user experience, as users will often require the parking space for longer than the charging event duration. This tension prevents the investor from maximising the utilisation of their asset and other drivers from accessing the charger, both inhibiting take-up of EVs.

A key advantage of EVs, is that through leveraging the established electricity grid, we can offer drivers the option to plug in every time they park their vehicles. This however, requires an oversupply of chargers, or a vehicle rotation policy. Some technology solutions have arisen around the deployment of mobile chargers linked to a battery. These however, come with the additional overheads required to move and operate the mobile charger.

Our solution builds on the existing charger network to increase the number of access points, without requiring the installation of additional chargers and the associated cost, until energy demand warrants it. By providing end users multiple sockets from one charging post, linked to a smart network, we are able to both offer a significant reduction in the cost of the infrastructure, improve the user experience by removing the need to move a charged vehicle and improve the utilisation of existing assets.

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SMART METERING SYSTEMS PLC	Virgin Park and Charge (VPACH)	£38,368	£19,184
CENEX (CENTRE OF EXCELLENCE FOR LOW CARBON AND FUEL CELL TECHNOLOGIES)		£12,003	£12,003
JUICENET LIMITED		£28,164	£14,082
Loughborough University		£3,431	£3,431
Oxfordshire County Council		£4,783	£4,783

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VIRGIN MEDIA LIMITED	£27,466	£13,733
West Midlands Combined Authority	£5,771	£5,771

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Project description - provided by applicants

The VPACH project will assess the feasibility and then demonstrate the opportunity to build a fully integrated, scalable and timely EV charging network for onstreet residential parking using the existing and widespread power and communications network assets of Virgin Media as a foundation. This innovative business model would re-purpose and evolve existing infrastructure assets to meet EV Charging market needs, minimise new street furniture and benefit from access to a high-speed data communications network.

Virgin Media, which has one of the largest powered communication networks in the UK, has actively been looking at how it can use this street-based infrastructure in innovative ways to support smart city applications such as Electric Vehicle charging, IoT communications networks and a variety of monitoring applications.

Onstreet residential parking is seen as a challenging market segment to address for charging operators due to high costs and time of deploying infrastructure, complexities of installation and significant amount of up front capital required. However, exploitation of Virgin Media's deep network of street based residential network assets would provide a significant stepping stone to establishing an EV charging network cost effectively and in a timely manner. Virgin Media cabinets are connected to the grid and also often contain battery backup. This project, led by Virgin Media's metering and grid connection partner, SMS Energy Services, will assess the ability to deliver kerb side EV charging connectivity that is also hardware agnostic.

The project consortium contains partners from across the value chain to ensure that the feasibility prepares the ground for a technically, commercially and regulatory viable demonstrator project. The consortium includes Virgin Media, SMS plc, eMotorWerks, Cenex, Loughborough University Transport Studies Group, Oxfordshire County Council and Transport for West Midlands.

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ZETA SPECIALIST LIGHTING LIMITED	Park and Charge	£51,100	£35,770
Cherwell District Council		£3,584	£3,584
Oxfordshire County Council		£7,034	£7,034
University of Oxford		£25,152	£25,152
URBAN INTEGRATED LTD		£32,819	£22,973

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Funders Panel Date: 28/09/2018

Project description - provided by applicants

The enclosed project is presented by a highly focused team of experienced experts in the field of EV charging and infrastructure. This team includes professionals from Local Authorities and Universities that have already completed significant trials and data gathering exercises to highlight the issues faced by EV charging and the infrastructure needed for mass adoption.

This team, including operators of parking and responsible for provision of EV charging, is frustrated with the difficulties associated electric vehicle usage and journey planning. Their vision is to create a smart infrastructure system that provides electric vehicle users with a "Tinder or Airbnb style" system for charging their car. This system, called Park and Charge, seeks to bring together the charging hardware technologies, parking availability and software that provides a complete end to end charging solution for electric vehicle owners limited by on street parking and charging availability. The solution would deal with all aspects of the vehicle charging challenge (real-time choice of charging sites, charge bay parking, live pricing, booking/billing from their car). The goal is to promote electric vehicle ownership and integrate electric vehicles into the wider transport and energy infrastructure.

The project is presented by two commercial providers of electric vehicle charging related hardware (Zeta) and software solutions (UI-UK) in collaboration with local government representatives (Oxfordshire County Council). With support from the local Universities to conduct User analysis and transport modelling. The project will focus on establishing the feasibility of providing a living laboratory electric vehicle charging demonstrator in Oxfordshire and provide a crucial platform for the streamlining of the energy, urban and transport related challenges. The system will provide a solution that directly aids modal transport shift in one of the countries most challenging transport related regions.

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Innovate UK

Results of Competition: Electric Vehicle Charging for Public Spaces: Feasibility Studies

Competition Code: 1807_FS_OLEV_ELEC_ST1

Total available funding is £1,323,907

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
SOLISCO LTD	Electric vehicle charging for public spaces: feasibility studies	£56,503	£39,552
DRIVENERGY LTD		£4,607	£3,225
ECUITY CONSULTING LLP		£32,523	£22,766
ENERGI MINE LIMITED		£4,698	£3,289
EV-BOX UK & IRELAND LIMITED		£4,655	£1,396
Keele University		£9,271	£9,271

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West Midlands Combined Authority		£4,600	£3,220
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Funders Panel Date: 28/09/2018

Project description - provided by applicants

The Smart Energy and Transportation Hub (SETCH) project brings together Solisco, the West Midlands Combined Authority, EVBox, Mennekes (Drivenergy), Energi Mine and Keele University to deliver Electric Vehicle (EV) charging hubs to the public at key locations such as Park & Ride car parks .

This project aims to change the way charging points have been deployed by creating an eco-system rather than the standalone charging posts implemented historically. We strongly believe that this combined infrastructure offering can make a real difference for the emerging EV revolution. The SETCH solar EV charging solution will incorporate a number innovative technologies, systems and approaches:

- Solar PV canopies and battery storage technologies that deliver renewable energy for EV charging at all times of day.
- Grid innovation through smart charging and connections enabling grid balancing services
- Creating new revenue streams such as car sharing club placement and advertising platforms
- Offering reward mechanisms to encourage EV uptake and promote clean energy recharging through blockchain technologies

The benefits of this technology are extensive and far reaching for EV users. For those who wish to commute into the city centre by train the hubs enable them to leave their EV to charge during the daylight hours which in turn reduces city centre congestion and promotes public transport. For local residents without off-street parking, the battery storage enables them to recharge their EVs using renewable energy during the night. This in turn will reduce strain on the local grid and increase the use of renewable energy for EV charging.

Standalone charging stations are typically distributed which makes them less visible to the public. The project will deliver visible EV charging infrastructure which in turn will encourage uptake of EVs by increasing confidence in the availability of public charging. This in turn will lead to an improvement to air quality particularly in urban centres where poor air quality is causing health problems.

The project will also aim to improve the economics of EV charging by offering EV users affordable charging and also enabling other revenue streams, particularly those which also promote sustainable low carbon transportation solutions such as car clubs. The charging hubs will also

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look to incorporate advertising platforms targeting EV and other low carbon transportation products.

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Funders Panel Date: 28/09/2018

Innovate UK

Results of Competition: Electric Vehicle Charging for Public Spaces: Feasibility Studies

Competition Code: 1807_FS_OLEV_ELEC_ST1

Total available funding is £1,323,907

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
V2G EVSE LIMITED	Inconspicuous Smart On Street EV Charging (ISOSEC)	£45,360	£31,752
ALBRIGHT PRODUCT DESIGN LIMITED		£14,941	£10,459
ENERGEO LIMITED		£10,751	£7,526
Plymouth City Council		£3,101	£3,101
URBAN ELECTRIC NETWORKS LTD		£28,811	£20,168
URBAN FORESIGHT LIMITED		£11,154	£7,808

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Project description - provided by applicants

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* Is V2x capable and ready for integration into smart grid operations, thereby helping to overcome grid constraints

****NOVELTY, ADVENTURE AND INNOVATION****

* The hybridisation of the Urban Electric UEone retractable charging posts with the V2G EVSE smart charging station controller

* Adaptation of the charging post to host sensors

* The use of geospatial big data and analytics to identify optimum locations for charge points and phase their deployment

* Development of a bespoke special purpose vehicle with a range of investment and revenue share options to enable charge point roll out at little or no cost to local authorities.

****HOW WILL THIS HELP TRANSFORM THE LIVES OF INDIVIDUALS, ORGANISATIONS AND SOCIETY?****

Provision of reliable and plentiful on-street charging will reassure households with no off-street parking that buying an EV is practical and affordable. This will increase their rate of adoption.

****Impacts****

* Reduced carbon emissions will reduce the risk of impacts from dangerous climate change

* Improved air quality will reduce the risk of disease

* Reduced fuel costs will lead to an increase in disposable income

****TEAM****

V2G EVSE, Urban Electric, Plymouth City Council, Energeo, Duku, and Urban Foresight.

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Innovate UK

Results of Competition: Electric Vehicle Charging for Public Spaces: Feasibility Studies

Competition Code: 1807_FS_OLEV_ELEC_ST1

Total available funding is £1,323,907

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
CYBERMOOR SERVICES LTD	Scaling on Street Charging Infrastructure	£17,600	£12,320
Charge my Street		£22,597	£22,597
JUUCE LIMITED		£18,233	£12,763
MIRALIS DATA LIMITED		£28,072	£19,650

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Funders Panel Date: 28/09/2018

Project description - provided by applicants

Most people on terraced streets who are thinking of getting an electric car are put off because there is nowhere to charge it locally. Local councils are stretched and unable to devote the time and resources to help residents get a chargepoint for their home.

While, they often manage the highways, public buildings and car parks, which could host chargepoints, navigating through the dizzying array of local authority departments with an interest in this area -- parking, highways, environmental health, property services -- would put off even the most enthusiastic citizen.

Scaling on Street Charging Infrastructure will carry out feasibility work on meeting our vision for the 8 million homes without off street parking to be within 5 minutes walk of an Electric Vehicle (EV) Chargepoint. This will deliver:

* increased take up of electric vehicles, allowing people to save money on fuel costs;

* reduced air pollution and CO2 emissions.

* OBJECTIVES & FEATURES

The project will carry out feasibility work to develop a Phase II application including the following elements:

- a) planning community owned charging infrastructure in 4 Local Authority (LA) areas based on local demand, mapping data and engagement with local stakeholders;
- b) incorporating a variety of additional uses into chargepoint infrastructure -- including 5G cells, battery storage and defibrillators. The project will assess the social and financial value for stakeholders as well as technical / commercial implications of each scenario;
- c) consulting with local stakeholders from private, public and 3rd sectors in each of the target areas on sites for chargepoints and demand for EVs;

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d) developing financial plans to scale up investment in the plans across the target areas and building a coherent business plan to scale up delivery.

DETAILS OF INNOVATION

The innovation lies in the business model -- giving local people the tools to identify and finance their own chargepoint with little reliance on LAs. It builds on earlier projects by assessing commercial impacts of integrating other technologies like solar panels on community centres to generate additional value. A demand lead approach - encouraging local people to invest, reduces the risk on public and private investors as they can target funding where chargepoints are most likely to be used. The project offers a new way for hard pressed LAs to stimulate chargepoints in their area and make the most of their limited resources.

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Innovate UK

Results of Competition: Electric Vehicle Charging for Public Spaces: Feasibility Studies

Competition Code: 1807_FS_OLEV_ELEC_ST1

Total available funding is £1,323,907

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
ENTRUST MICROGRID LLP	Smart EV charging solutions for on-street applications	£51,692	£36,184
E-CARE TECH LTD		£23,104	£16,173
ENTRUST PROFESSIONAL SERVICES LTD		£14,378	£10,065
FRANKLIN EV LIMITED		£8,083	£5,658

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Funders Panel Date: 28/09/2018

Project description - provided by applicants

The project aims to deliver a creative design of a disruptive and innovative on-street smart EV (electric vehicle) charging solution for EV owners without off-street parking.

The on-street smart EV charger is based on European Standard CCS (Combined Charging System) and can provide both DC (direct current) and AC (alternating current) fast charging for electric vehicles with CCS inlet, and AC fast charging for electric vehicles with Type 2 inlet, typically electric vehicles with Japanese Standard CHAdeMO, such as Nissan Leaf. This means the on-street smart EV charger is future proof and can charge almost all electric vehicles in the UK/EU market.

The on-street smart EV charger integrates lithium batteries and is designed to perform smart charging electric vehicles, i.e. enabling charging electric vehicles with low tariff electricity and balancing the grid.

The on-street smart EV charger enables re-use of after-service EV batteries and which is an ideal solution extending the life-span of EV batteries.

The on-street smart EV charger enables both active V2G (feed power to the grid) through the integrated batteries and reactive V2G through demand response management, i.e. managing electric vehicle charging. The V2G solution does not have any negative impact on the electric vehicles, i.e. does not jeopardise electric vehicle manufacturer's warranty.

The project will provide a few creative designs of the on-street smart EV charger, which will be embedded in the street environment with some popular street furniture, such as street lighting and AD/PR boards, etc.

The project will develop practical business models for operators and build in future proof payment method for EV owners/users, conduct comprehensive financial analysis for both operators and EV owners/users, engage/consult local councils and residents/businesses, EV owners/users and the public, prepare planning application for pilot installation in selected street/locations.

The on-street smart EV charger can be used for on-street, community hub, workplace and open car park applications, and is deemed to be favoured by all stakeholders, including electric vehicle manufacturers, EV charging network operators, EV owners/users, electricity grid, local

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councils, environment agencies and the public.

It will provide local councils with a promising option, make a step change for charging electric vehicles, particularly for those without off-street parking, and provide great experiences for all users, both private and public.

It will facilitate rapid growth of electric vehicles, stimulate road transport electrification, enable re-use of after-service EV batteries, enhance air quality and hence quality of life.

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Innovate UK

Results of Competition: Electric Vehicle Charging for Public Spaces: Feasibility Studies

Competition Code: 1807_FS_OLEV_ELEC_ST1

Total available funding is £1,323,907

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
HEWITT STUDIOS LLP	K:Port Neighbourhood EV Smart Hub	£34,384	£24,069
CENEX (CENTRE OF EXCELLENCE FOR LOW CARBON AND FUEL CELL TECHNOLOGIES)		£7,844	£7,844
ESB INNOVATION UK LIMITED		£26,698	£13,349
Loughborough University		£6,434	£6,434

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Project description - provided by applicants

K:Port has been developed to help accelerate EV adoption in the UK, contributing to increased economic growth, reduced greenhouse gas emissions and improved air quality.

In order to meet these aims, K:Port sets out to:

- * Affect positive behavioural change, removing the barriers to adoption (lack of parking, lack of facilities, poor availability and visibility)
- * Reduce risks associated with EV charging (poor safety, security and accessibility).
- * Meet the growing energy demand (incorporating energy generation and storage)
- * Provide a long-term sustainable legacy (with reusable and recyclable components)
- * Avoid common procurement pitfalls (focus on best long term value, not just initial capital outlay)
- * Achieve deliverable solutions on the ground, real projects with real (and measurable) benefits.

Most existing EV charging solutions are fairly agricultural, having grown out of the solar farm industry or petrol station forecourts. They simply aren't of high enough design quality to be granted planning permission in many of the locations they are most needed i.e. historically sensitive urban centres subject to significant scrutiny.

Hewitt Studios' K:Port neighbourhood EV charging hub represents an exciting change in approach to EV infrastructure - it is a disruptive and sustainable solution which makes a positive change to the environment in which it is located and to the people who use it.

K:Port encompasses the following innovations:

- * High-quality, motivational, people-focused charging environment
- * New, factory-based methods of construction (maximum speed, minimal site disruption)
- * Flexible and scalable solution
- * Energy and resource-efficient
- * Safe and accessible, even at night
- * Easy to maintain

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- * Designed for disassembly / re-use at the end of life
- * Smart grid enabled - a neighbourhood energy hub
- * Fundable and cost comparable to conventional solutions
- * Well supported with high-profile industry partners inc. ESB, Siemens and Cenex

K:Port formed the basis of successful bids made by both South West and North East Combined Authorities, to OLEV's £40m Go Ultra Low (GUL) Scheme for EV-promoting initiatives in 2016\.

To date we have received a number of commissions to provide small standalone EV charging canopies based on K:Port in sensitive urban locations (for which planning has been granted).

We want to use this project to build capability and develop this one or two module EV charging canopy into a scalable, multi-module neighbourhood smart energy hub, incorporating; EV charging, energy generation & storage (inc. use of V2G enabled EVs), water recycling, air quality monitoring and driver & community facilities.

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