Industry focus

NEWS RELEASE
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Government advisory body says electric vehicle revolution can be a boon to the UK's energy system

A Government-backed taskforce bringing together key players in the energy, infrastructure and transport sectors has demonstrated that an effectively managed integration of electric vehicles with the energy system can significantly improve electricity network efficiency, increase system resilience and limit the requirement to build costly new infrastructure to meet growing electricity demand.

The Electric Vehicle (EV) Energy Taskforce was established in 2018 to make proposals to Government and industry to bring together the auto and energy sectors to ensure that the GB energy system is able to accelerate the mass take-up of electric vehicles while also delivering benefits to the electricity system.

The infrastructure spending required to prepare the UK electricity networks for the electric vehicle transition is likely to run to tens of £billions[1]. However, the Taskforce believes this cost can be significantly reduced if the right decisions are made and the transition is effectively coordinated between government and key energy, infrastructure and transport industry stakeholders. A prior study put this figure at between £2.7bn and £6.5bn.[2]

There are twenty-one key proposals for actions to be taken by government and industry to enable an effective and efficient electric mobility transition (see Annex 2). The proposals are included in a report which is being launched at an event this afternoon in central London.

The Electric Vehicle Energy Taskforce, an unprecedented collaboration (established jointly by energy and transport ministers at the Prime Minister's Zero Emission Vehicle Summit, in September 2018[3]) is made up of more than 350 organisations including many household names (see Annex 1).

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[1] https://es.catapult.org.uk/wp-content/uploads/2018/10/Preparing-UK-Electricity-Networks-for-Electric-Vehicles-FINAL.pdf
[2] https://www.eti.co.uk/programmes/transport-ldv/consumers-vehicles-and-energy-integration-cvei
[3] https://www.gov.uk/government/news/zero-emission-vehicle-summit

In its formal report to the Government, the Taskforce sets out a range of proposals to enable the efficient integration of electric vehicles with the energy system during the electrification transition. These include:

- Ensuring that EV drivers, electricity consumers and the energy system benefit from the integration of EVs and the energy system;
- Providing financial incentives to EV drivers to ensure that the potential energy storage capacity of millions of electric vehicles is used to reduce peak demand;
- Prioritising greater standardisation across the charging network to ensure it works resiliently, efficiently and securely with the electricity system;
- Establishing an independent body to promote the benefits of smart charging through a major publicity campaign to ensure EV drivers are confident and well informed;
- Extending the principle of 'open data' in the energy system to include EV charge points and EVs to allow more effective smart charging of EVs;
- Co-ordinating energy and transport planning to ensure we have the right infrastructure in the right place.

The Electric Vehicle Energy Taskforce is believed to be the most wide-ranging collaboration between the UK's energy and transport/mobility industries. The Low Carbon Vehicle Partnership was asked to convene and facilitate the work of the Taskforce.

The Taskforce states that "the transition to electric motoring is now well under way", but that the pace must increase. Road transport accounts for 28% of the UK's total energy consumption and 25% of carbon emissions.

Philip New, Chief Executive, Energy Systems Catapult and the EV Energy Taskforce Chair said: "Ensuring that the mass roll-out of electric vehicles delivers benefits for both drivers and the wider energy system requires actions from industry, Government and the regulator, including creating the new markets and policies that can unlock EVs' huge potential."

The Taskforce expects electric vehicles to become ubiquitous on Britain's roads, providing a significant challenge – and opportunity – for the UK's electricity network.

Coordinating the introduction of a smart charging infrastructure will enable network operators to balance demand and supply through an electricity grid increasingly incorporating intermittent renewable energy sources. EV drivers willing to charge their vehicles during periods of low electricity demand or when surplus renewable energy is being generated will benefit from lower fuel costs in the transition ahead.

Three important recommendations relate to the correct use of consumers' personal data and the means to ensure people's privacy is properly protected and smart EV charging is secure.

Commenting in advance of today's launch event in Westminster…

Minister for the Future of Transport George Freeman said: "We are 100% committed to decarbonising the UK's road network. Our £1.5bn Road to Zero strategy is supporting a

thriving electric vehicle market; last year in the UK a battery electric vehicle was sold every 15 minutes.

“Government commissioned the Taskforce to advise how we can best work with industry to make sure the energy system is ready for the transition to electric vehicles. This report provides important evidence to shape the next stage of our Road to Zero roadmap.”

Business Minister Nadhim Zahawi said: “From cycling, to opting for an airline that offsets its carbon emissions, the ways we travel are changing as the UK makes positive strides towards ending its contribution to global warming by 2050.

“This report takes us a step closer towards the mass uptake of electric vehicles on our streets – providing guidance to ensure our energy system is prepared for an electric transport revolution and helping consumers top-up their vehicle more cheaply and conveniently on the go.”

Fintan Slye, Director of **National Grid ESO** said: “Electric vehicles will play a key role in decarbonising the UK’s transport and electricity sectors. Smart charging and vehicle-to-grid technology means we can use renewable energy more efficiently, charging when the sun shines or the wind blows and potentially discharging back to the grid at times of peak demand.

“With an estimated 35 million electric vehicles on the roads by 2050 or sooner, we have a fantastic opportunity for the transport and electricity sectors to work together to deliver a low carbon transition that benefits all electricity consumers.”

David Smith, Chief Executive, **Energy Networks Association** (ENA) said: “To develop and deliver a smart efficient national electric vehicle charging network will require effective local and national energy planning and coordination to enable efficient investment, mediating the balance between futureproofing and asset stranding.”

Audrey Gallacher, Interim Chief Executive, **Energy UK** said: “Smart electric vehicle charging represents a fantastic opportunity to cut the cost of driving and improve the operation of the energy system, so it’s a win-win. To make sure that everyone can benefit, consumers must have freedom over when they charge their vehicle and should be rewarded for being flexible in doing so.”

Mike Hawes, Chief Executive, **Society of Motor Manufacturers and Traders** (SMMT) said: “The recent growth in electric vehicles shows there is buyer appetite for these new, exciting technologies. Vehicle manufacturers are investing heavily to bring more choice to the UK but to drive uptake to meaningful levels, this must be supported by a long-term commitment to financial incentives, as well as an appropriate and highly visible charging network. Drivers must feel confident that it is as easy to charge as it is to pull up at a forecourt and refuel.”

Howard Porter, Chief Executive, **BEAMA** said: “Providing EV drivers with a hassle-free, seamless charging experience requires the urgent development of further standards and

codes of practice that ensure full inter-operability and sharing of data between the vehicle and the electricity system."

Matt Evans, Director- Markets at **TechUK**, said: "A smart grid, delivering smart charging to smart electric vehicles requires accessible data. Frameworks therefore need to be developed to facilitate the appropriate, secure sharing of this data."

Kevin Welstead, Electric vehicles sector director **SSE Enterprise** said: "With increasing demands being placed on the electricity grid, it is vital to adopt an holistic approach that provides an integrated platform to optimise energy load and generation, cutting toxic emissions in the most cost effective and least disruptive way for consumers."

Andy Eastlake, the **Low Carbon Vehicle Partnership's** Managing Director said: "Developing a multi-stakeholder co-ordinated view on what is needed to liberate the electric vehicle smart charging sector has been vital in providing 'no regret' proposals to government and industry."

Notes to Editors

DOWNLOAD THE EV ENERGY TASKFORCE REPORT HERE.
A SELECTION OF IMAGES IS AVAILABLE HERE
IMAGES FROM THE LAUNCH EVENT WILL BE AVAILABLE HERE (from c3pm, 14.2.20)
A consumer-focused version of this story can be found here.

1. The Electric Vehicle Energy Taskforce was established in autumn 2018; an initiative announced at the Prime Minister's Zero Emission Vehicle Summit, held in Birmingham, in September 2018. The Taskforce was established to make suggestions to Government and industry to ensure that the GB energy system is ready for and able to facilitate and exploit the mass take up of electric vehicles.

2. In order to meet climate change targets, the government has already announced that conventionally powered cars will be phased out by 2040. The Committee on Climate Change estimates that the new net zero target could mean that this date will be brought forward. National Grid ESO's Future Energy Scenarios show that 11.9 million vehicles could be electric by 2030.[4]

3. The Taskforce's recommendations are made under five themes:
    - Theme one: Delivering consumer benefits through interoperability
    - Theme two: Rewarding consumers for charging smartly
    - Theme three: Utilising and protecting data for better consumer outcomes
    - Theme four: Winning consumers' trust and confidence
    - Theme five: Developing and maintaining the charging infrastructure consumers need

[4] http://fes.nationalgrid.com/

More information: lowcvp.org.uk/evet

4. The LowCVP (www.lowcvp.org.uk), which was established in 2003, is a public-private partnership that exists to accelerate a sustainable shift to lower carbon vehicles and fuels and create opportunities for UK businesses. Nearly 200 organisations are engaged from diverse backgrounds, including automotive and fuel supply chains, government, vehicle users, academics, environment groups and others.

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CATAPULT Energy Systems

LowCVP Low Carbon Vehicle Partnership

Office for Low Emission Vehicles

ANNEX 1

Over 350 organisations have been involved in the EV Energy Taskforce including[5]:

ABB; Automotive Council; Aviva Investors; BEAMA; BMW UK; BP; BP Chargemaster; British Gas; BSI; BT; Burns & McDonnell; Centrica; Charge Point; Charging Around Britain Ltd; Citizens Advice; CMS Cameron McKenna Nabarro Olswang LLP; Cornwall Insight; Cummins; Delta Energy & Environment; Drivenergy Ltd; EA Technology Ltd; Eaton; EDF Energy; Elexon; Energy Networks Association; Energy Saving Trust; Energy Systems Catapult; Energy UK; Engenie; ESB Networks; EV Driver; ev.energy; Eversheds Sutherland (International) LLP; Ford; GE; Gemserv; Geo Together; Greater London Authority (GLA); Honda; HSBC; Imperial College London; Innogy; Innovate UK; Institute of Transport Studies (Univ of Leeds); Intel; Kaluza; LG; Lex Autolease; Low Carbon Vehicle Partnership (convenor); National Grid Electricity System Operator; National Grid Electricity Transmission; NCSC; Newcastle University; Nissan Motor GB; Northern Ireland Electricity Networks; Northern Powergrid; Npower; Nuvve; Octopus Electric Vehicles; Octopus Energy; Office for Low Emission Vehicles; Ofgem; OVO Energy; Pinsent Masons LLP; Pod Point; RAC Foundation; Renewable Energy Association (REA); Renewable Energy Consumer Code (RECC); Ricardo; Schneider Electric; Shell; Siemens; Smart Energy GB; Society of Motor Manufacturers and Traders; SSE; TechUK; Tesla; Thales eSecurity; The AA; UK Power Networks (UKPN); UKEVSE; UKPIA; UPS; Vattenfall; VW; Warwick University; Western Power Distribution; WHP Telecoms; Zenith; Zenobe.

[5] Organisations listed were involved in Taskforce work packages or committees or have made explicit contributions.

ANNEX 2

Electric Vehicle Energy Taskforce proposals

Theme 1: Delivering Consumer Benefits Through Interoperability

Proposal 1
By no later than 2025 industry must have reached convergence on a preferred set of standards that meet interoperability requirements across the EV charging infrastructure. Government must intervene if this is not achieved. Government and industry should, as a matter of urgency, review, define and propose international standards for communications, data and security protocols in order to meet this goal. To support this work government should establish a body with industry to coordinate the involvement of industry stakeholders.

Proposal 2
Government and industry must ensure system resilience by design. This includes ensuring that charge point operators (CPOs) are aware of their responsibilities for ensuring the security of their systems. Government with industry should agree a common standard base for cyber security but not mandate a single solution, however, Government should provide support for the preferred set of standards, including device certification.

Proposal 3
Industry should enable roaming services to deliver a seamless EV charging experience between public charge points by 2021.

Proposal 4
Government and Ofgem, through the electricity industry technical and market code governance frameworks, should ensure overall operational coordination of industry parties seeking to exploit EV flexibility through smart charging technologies and electricity market products by 2021. Clear visibility as to which market products are in play must be evident to both industry and users at any time, as well as which transactions have occurred over a settlement period. It must also ensure that the operation of smart charging does not present a risk to the stability of the electricity system.

Proposal 5
Industry should agree to extending the minimum technical requirements for smart chargers set out by OLEV to facilitate the management of electricity network capacity and energy availability. These requirements should be introduced in line with the powers set out in the Automated and Electric Vehicles Act by 2021.

Proposal 6
If permitted, network and system operators must work with Ofgem, industry and consumer representatives to develop governance arrangements for the use of emergency charge limitation by a network company. Emergency charge limitation should only be used as a last resort to maintain the safety and security of the electricity system.

Proposal 7
By 2021 industry must develop common labelling standards for EVSE, enforced by Government if necessary, so that consumers are aware of the forms of interoperability available from clear, comprehensible EVSE package labelling and other product material. There are a number of types of interoperability and it is proposed that generally, offering these is left as an option for EVSE providers.

Theme 2: Rewarding Consumers for Charging Smartly

Proposal 8
Require private EV charge points to charge smartly by default, thus making smart charging participation an opt-out function by 2021.

Proposal 9
The Government and Ofgem must ensure that existing markets for flexibility are made accessible for EV users. They must also support the development of new co-ordinated and accessible markets for flexibility to compete with traditional networks and wider whole electricity system solutions by 2023 at the latest. Markets and price signals should maximise the opportunities for consumers to utilise their flexible resources, including EVs, and sufficiently reward them for offering demand flexibility services that support optimised network operations and investment, emission reductions and whole electricity system efficiency.

Proposal 10
The Government and Ofgem should ensure on an ongoing basis from 2020, possibly through a process triggered by a charge point installation, that the number of consumers who have a smart meter installed before or alongside the installation of a charge point is maximised, and that consumers have been properly informed of the potential benefits.

Theme 3: Utilising and Protecting Data for Better Consumer Outcomes

Proposal 11
Industry players should cooperate to develop comprehensive data sharing arrangements (including standardisation where appropriate) and open and interoperable exchange principles and mechanisms, in conjunction and alignment with implementation of the Energy Data Taskforce recommendations. They should also advise Government and relevant regulators if industry licences or codes need changing or if legislation is required to allow such sharing of data by 2021. Government and regulators to review progress and to act if necessary.

Proposal 12
To facilitate the availability of open and accurate charge point data, public charge point operators, owners and market actors must make data on public charge point location, type, status, capacity, price and availability consistent and openly available for EV drivers by 2021. A single asset register, aligned with the Energy Data Taskforce Asset Registration Strategy, must include all fixed charge points (i.e. private, public, workplace, etc) and should include all relevant data to ensure optimum planning and operation of the electricity networks.

Proposal 13
The Electric Vehicle Energy Taskforce proposes that Ofgem and Government introduce a Data Access and Privacy Framework for the EV sector to ensure that consumers have full control over their data by 2021. Consumers should be made aware of all data access issues at the point of sale of all EV products and services as well as their powers to control and delete this data.

Theme 4: Winning Consumers' Trust and Confidence

Proposal 14
The Taskforce proposes that an ongoing and proactive campaign be undertaken to promote the

benefits of smart charging to the public. An existing independent organisation could be given this task, or a new consumer-facing body established during 2022.

Proposal 15
The Taskforce proposes that Government fund the provision of an independent, tailored advice and information service on smart charging and EVs, to be established by 2022.

Proposal 16
Industry must develop and adopt common, principle-based complaint handling standards by the end of 2021 to ensure that consumers are transferred seamlessly (between market boundaries if necessary) to resolve their problem(s), regardless of who they have initial contact with.

Proposal 17
The Taskforce proposes that Government and/or Ofgem undertake a full review of protections for EV users by the end of 2021. This should build on and be coordinated with ongoing work (such as Ofgem's Future Energy Retail Market Review).

Proposal 18
Industry to develop and implement best practice standards, backed up by an independent accreditation scheme, for the information provision for smart charging and electric vehicle services at the point of sale by 2021.

Theme 5: Developing and Maintaining the Charging Infrastructure Consumers Need

Proposal 19
The Government and Ofgem, as a matter of urgency, need to facilitate effective forward planning and coordination of the rollout of EV and electricity network infrastructure at a national and local level to meet consumer needs. This needs to be aligned nationally and to wider local area energy, transport and emission reduction plans and be implemented and used through RIIO-2 price control.

Proposal 20
Ofgem should ensure RIIO-2 price control supports well-justified anticipatory network investment, including LV monitoring, that benefits consumers and enables efficient and co-ordinated deployment of the network infrastructure necessary for EV charging (with due consideration paid to other future additional loads including from the electrification of heat).

Proposal 21
The Government should provide support to all public bodies and private organisations concerned with developing and procuring the delivery, operation and maintenance of public EV charging infrastructure. This should include the sharing of best practice and providing specific guidance on procurement of public charging solutions and requirements for effective delivery, ongoing operation and maintenance of public charging by the end of 2021.