Minutes from meeting of the All Party Parliamentary Group on Electric and Autonomous Vehicles

The global pace of change in electric vehicles | 5th December 2017
Portcullis House, London UK

Speakers:

- Colin Mckerracher, Head of Advanced Transport at Bloomberg New Energy Finance
- Mike Kerslake, Technical Manager at BYD
- Kathryn Magnay, Head of Energy at the Engineering and Physical Sciences Research Council (EPSRC)
- Natasha Robinson, Head of the Office of Low Emission Vehicles at the Department for Transport

Chair:

- Rt Hon Dame Cheryl Gillan MP (Con)

Key takeaways:

- **EVs seen as a part of industrial policy by many nations**
- **Rapid growth of EV market expected driven by a multitude of state-level policies and technological advancement. Commitments from nearly every western auto manufacturer to develop electric vehicles and expand their EV offering**
- **UK is aiming to become a hub for battery manufacturing and development**
- **Numerous UK policies and funding schemes in place to support uptake and deployment of charging infrastructure**
- **Electrification of cars and vans will have real impacts on constituents**

Note: All presentations are available alongside the minutes from the meeting.

Meeting began at 10.30am

Introduction from the Chair

The Chair (CG) introduced the speaking panel and welcomed attendees. She outlined how this was a timely group and event given the Governmental, media, and public interest in the sector. She mentioned that there are real hopes for the sector in terms of advancing sustainability, reducing emissions and reducing costs for consumers, not to mention potential industrial benefits. She thanked the REA for its role founding the group and providing the Secretariat.

Colin McKerracher (CM), Head of Advanced Transport, Bloomberg New Energy Finance (BNEF)

As lead BNEF analyst on EVs, CM undertakes and coordinates a breadth of research and advises numerous companies and governments globally. Worldwide EV sales were 1million in 2017, representing 30GWh of battery manufacturing capacity, compared to only hundreds of thousands of unit sales in previous years. In the UK EVs are 2% of sales, in China 2.6% and in the US around 1%.

Fuel economy regulations have driven EV sales to date and China has a target which should relate to 3% of sales by 2019 and 4% by 2020. In the EU, regulations may mean 10-20% of car sales are EVs in 2025.

Economies of scale will drive the reduction of battery prices in future years, there is a planned 281GWh of manufacturing capacity in train. By 2025, BNEF predict EVs will be cost competitive with conventional vehicles, with 54% of vehicles sales by 2050 being EVs by 2040.

In terms of materials for batteries, CM explained how current production of Lithium and Cobalt is not high enough but that these are not rare materials- plentiful supply exists to meet demand and mining capacity is increasing. Even if lithium prices rose by 300% this would only translate to a 1% increase in a vehicle's unit cost.

Turning to policy, CM said that charging infrastructure was vital and applauded the UK's Government's funding in this area. Norway has had tax breaks leading to cost parity with conventional cars and this has been very successful. He concluded with the view that policy will be absolutely critical to the development of an EV market in the next 5-7 years.

Mike Kerslake (MK), Technical Manager, BYD

MK gave an introduction to BYD (Build Your Dreams) as a company and considerable player in the EV field. Within the last year BYD have opened a UK office and partnered with Alexander Dennis Ltd (ADL) of Falkirk and SSE of Perth, to manufacture electric buses and supply London buses.

Key messages included that the power needed to charge all UK buses overnight is roughly 1080 MW, which can easily be found in the current system (when usage is below generation at night), and they are looking at Vehicle to Grid trials in London. Current barriers to EVs include short-term grants and funds with no visibility of future funding, and the Bus Service Operators Grant which effectively acts as a subsidy for diesel units in BYD's view.

BYD is the world's largest manufacturer of rechargeable batteries and new energy vehicles with a 13% of global electric car and van market.

Kathryn Magnay (KM), Head of Energy at the Engineering and Physical Sciences Research Council (EPSRC)

KM outlined how the Faraday Challenge had arisen from the Industrial Strategy and desire to commercialise UK technology R&D (partly funded by the Industrial Strategy Challenge Fund). Key initiatives include the Faraday (Battery) Institute recently announced to be created in Coventry and the Battery Challenge (with over £200m of funding). She outlined how important it is for skills and apprenticeships to be considered alongside this and to build on existing UK strengths in internal combustion engines and the original invention of lithium-ion batteries, in Oxford in 1980.

There were two questions from the floor for KM as she had to leave early.

Q: How will the R&D funds be spent and knowledge spread, as well as IP protected?

A: The spending will be for partners of the scheme to decide, IP will be protected and exploited for the UK's benefit.

Q: How can we insure and protect against repair costs?

A: This is something we are looking at, as a team of scientists but also those working on business models research and associated areas.

Natasha Robinson (NR), Head of the Office of Low Emission Vehicles (OLEV) at the Department for Transport

NR outlined how the OLEV had been set up in 2009 demonstrating how forward-looking in many ways the UK was regarding EVs. She summarise the UK situation and support policies available for EVs alongside some current barriers to take-up. She emphasised that government is not picking winners when it comes to supporting lithium based EVs, but simply acknowledging the technology type that has come to market first in the UK. There is a communications campaign entitled 'Go Ultra Low' that is online and over multi-formats.

NR's slide pack goes through existing policies and funding schemes in detail.

Discussion

CG outlined her hope the groups would soon widen out to include housebuilders and developers, local government for example. Her view is that tax breaks could be very helpful in growing the sector when applied to EV charge points in new-build homes for example.

Q: regarding communications campaigns, public perceptions are key, in my opinion lack of awareness of the technology is a barrier and one-off test-drives are not enough – we need longer term maybe multi-month test drives to be available. How can this be achieved?

A: NR: the EV experience centre in Milton Keynes offers a seven day test drive for a fee of around £75 – less than a hire car. I also feel that word of mouth will be important in helping drive the sector forwards.

CM: The 'Go Ultra Low' type of EV promotion materials generally receive a high 'net-promoters' score, which is positive.

Q: In my background in wind energy infrastructure was consistently the problem with developing the sector- how can we overcome that with charge points?

A: CM: Looking internationally, installing batteries alongside charge points is often used as a solution, while including Transmission and Distribution considerations in site-selection should become more prevalent.

CG: There are also potentially skills shortages in the area acting as a big barrier to development, and National Grid has done some really useful, pioneering work in this field previously.

Q: I would just like to make the comment that manufacturers are moving to higher performance chargers which could create problems- for example Porsche developing a 750kW fast charger so in the longer term very fast chargers will be deployed and these may be best deployed at service station type sites.

A: MK: Yes, and clustering of charge points in residential areas is a big concern for the networks and they are looking at this already. One solution is a charging hub model whereby charging happens at a centralised location, for example with taxi drivers who don't have off street parking.

Q: Behaviour change is very important, the Electric Nation programme showed that engaging energy users in how they use energy can change how people use energy and this is important in the management of charging sense.

A: Globally, time of use tariffs for EV charging are becoming more widespread. It is more of an early stage and 'first line of defence' solution but can be effective.

InnovateUK: Good work is being done by the DNOs regarding clusters of charging points and they are aware of charging points as a source of threats and opportunities.

Q: Please can the panel comment on the possible impacts of wireless charging and autonomous vehicles?

A: MK: Wireless charging may be interesting in the bus market where BYD are doing trials, but there are more difficult and pressing challenges to overcome first and it is very expensive. There may be some take up of wireless charging in the domestic market so that you don't have to worry about plugging in your vehicle.

CM: I agree with this. It is not a game changer and there are still technical challenges, although there may be some take-up in the luxury market. Autonomous vehicles on the other hand are a game changed for electric vehicles.

NR: There could be some opportunities, for example at taxi ranks where cabs queue before there next fare, but I agree it is not a game changer.

CG closed the meeting by requesting views on what participants would like to see at the APPG and to contact their MPs about the issues. She expressed her personal view that she had been driving electric vehicle for twenty plus years as a committed golfer, she formerly sat on the Science and Technology Committee and saw Parliament as behind the times regarding Genome mapping, therefore wants it to be ahead of the curve and on the front foot with this new technological area.

CG finished by thanking the REA again, the speakers and requested any thoughts to be sent to her researcher, Alistair Todd (contact details available here). She encouraged attendees to read and take a copy of the REA's 'EV Forward Look' report.

Meeting closed 12.20pm

For further information about this event please contact the APPG's Secretariat – the Renewable Energy Association, by emailing dbrown@r-e-a.net.