Electric Vehicles

How do we move to full-scale deployment?

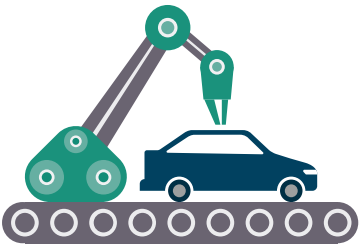
On Thursday 4 October, Osborne Clarke held an electric vehicles ('EVs') dinner bringing together key stakeholders to look at how we move to the full-scale deployment of electric vehicles. The dinner centred around the three key themes listed below.

Building out an infrastructure based on common standards with appropriate coverage in and outside cities, using one payment method open to all

Commonality of Infrastructure is a real issue for the success of EVs and this needs to be addressed to facilitate a widespread EV rollout. The need for commonality captures charging points and the associated cabling, as well as the overarching payment systems used to pay for charging and process data. The current payment problem, which requires an EV driver to use multiple applications to charge a vehicle across the country, cannotábe solved by simply paying for charging by way of contactless card payment, since this does not allow for recovery of VAT receipts, fleet charging and the collection of data from charge points. A charging solution should therefore address these areas. There is a need for a new infrastructure model to be rolled out and it is very difficult to make money from simply installing a charging point and making it available.

Charging and the associated technologies will become a commodity product as uptake develops, but there is a need to look for other sources of revenue to make a model of this type work. We are seeing supermarkets installing charging points as part of a wider customer programme, which incentivises maximising time in store. There are also opportunities arising from re-thinking how we use infrastructure and monetising periods of downtime, for example, query whether commercial fleet/mass transport fleet charging only needed for part of day (such as overnight) meaning charging infrastructure in commercial premises (such as offices) could be put to other uses to bolster the commercial model. A further possible future development which would maximise revenues available from charging infrastructure is fitting charging points with solar panels and battery storage. This would enable the charging point to self-power using renewables and to undertake price arbitrage via the battery, thereby bolstering revenues for the charging point operator.

Consideration was given to where infrastructure is being developed already. We are seeing activity at the local authority level, made easier by the provision of grant funding. However, the uptake and activity is rather fragmented at present and uptake operates on a 'postcode lottery' basis. We are also seeing activity in the bus fleet space, particularly in London, where much work has gone into the replacement of bus fleets, or retro-fitting with low emission technology. Buses are somewhat of a 'closed system' comparatively to the broader car market.

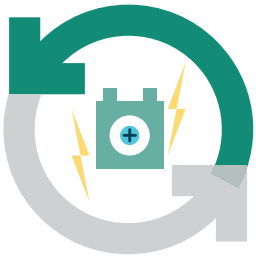


Managing peak consumption issues through the adoption of smart charging and vehicle-to-grid (V2G) technologies

The electricity network presents issues around capacity - the grid is currently constrained in many areas and it is difficult to obtain grid capacity for the addition of charging infrastructure without being required to meet the cost and time delay of reinforcement works. The cost of grid connections, particularly when coupled with grid reinforcement costs, present a significant problem for installers of connection points. The London Plan further exacerbates this issue through its onerous requirements around level of charging infrastructure required, which at this stage requires developments to incur higher costs to obtain greater capacity for EV charging points than project EV usage patterns will require. The way to deal with the grid issue is to invest progressively over time.

Meeting peak demand currently presents a difficult issue for operators of the electricity network. However, models being looked at by the energy industry as part of a wider move to decentralised energy production and smart networks may assist resolving this issue, at least for the medium term. The use of solar panels and batteries (including re-used batteries) on charge points, together with peer to peer trading mechanisms, vehicle to grid, time of use tariffs, peak load management and demand turn down are important structures for relieving stress on the network as a result of the increased pressure the EV revolution presents.

Debate rages in the industry as to the extent to which grid reinforcement is required to facilitate a mass adoption of EVs. Whilst the grid is currently being treated as critical infrastructure on a national level, we need to re-think our approach to it to make EV's work, and start approaching our system as a network self-sustained communities, as we are already seeing happening on a localised basis. This will enable balance locally and nationally. To facilitate this, we need greater collaboration in relation to the significant technology already existing. Consideration now needs to be given to what customers actually need and therefore where returns are.



Changing consumer and commercial driver attitudes, behaviours and habits to engage properly with EVs

The evangelists have been at the vanguard of the EV industry to date and a transition to the wider early adopter market segment is imminent. Whilst of those at the table, only two r three currently owned an EV, three quarters of attendees indicated that the next car they will buy will be an EV.

A key determinant of EV success in the wider market will be price and it is unlikely that there will be a mass adoption of EVs until we reach price parity with internal combustion engine ('ICE') models, or the upfront cost of an EV being lower than of an ICE vehicle. This could occur through reduced battery costs, which the table felt was likely to occur overtime, or through the increase of fossil fuel prices or potential taxation, which drive running costs of the ICE model higher. In where EVs are strong, such as Norway, the upfront cost of an EV is around 50% lower than the UK.

Consumer perceptions and the myths surrounding EVs, particularly battery degradation and range anxiety need surmounting to enable the EV market segment to widen. There is need for the positive reinforcement of messaging through existing EV users and early adopters, so wider messaging starts to filter through to the mass market. There is also a need for dealers to pro-actively sell EVs, rather than favouring traditional models due to availability.

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