WMCA Board

Date	14 February 2020
Report title	Electric Vehicle Charging and Enabling Energy Infrastructure: A West Midlands Approach
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Report has been considered by	Programme Board - 31 January 2020

Recommendation(s) for action or decision:

The WMCA Board is recommended to:

(1) Support the case made in this report for the acceleration of electric charging and enabling energy infrastructure in the West Midlands – noting the strategic importance of this issue to our Industrial Strategy, Strategic Economic Plan and Climate Change Strategy #WM2041.

(2) Consider the proposal presented below and Support the recommendation to move forward with a collaborative strategy to expand Electric Vehicle charging infrastructure across the West Midlands.

(3) Note that an Ultra-Low Emission Vehicle evidence base has been developed to inform this proposal by Energy Capital[1] ,TfWM, Cenex[2] and a West Midlands Electric Vehicle Working Group[3] has been convened and has met twice to further inform and shape our approach as expediently as possible.

(4) Note that subject to approval of this paper, next step one can be progressed with existing resources; additional revenue funding for step two will be sought and step three will require further public investment, once a clear investment case has been developed.

[1] Energy Capital is a Public-Private Partnership operating within the WMCA focusing on directing the necessary energy infrastructure investment to enable our businesses and citizens to thrive and our regional strategies to be delivered.

[2] Cenex is an independent, not for profit Centre of Excellence for Low Carbon and Fuel Cell Technologies - Delivering innovation through transport and energy infrastructures to help lower emissions.

[3] The West Midlands EV Working Group was convened for the purposes of developing this strategy and it has been agreed that it will evolve to continue to support strategy delivery as appropriate. It is comprised of the Constituent Local Authorities, Warwickshire, TfWM, Energy Capital and WMCA.

1.0 Purpose

1.1 The purpose of this report is to seek endorsement of this collaborative approach to expand electric vehicle charging across the West Midlands. Shifting to ultra-low emission vehicles on our roads and in our urban centres is a key plank of our strategic agenda around clean transport, clean air and climate change. It is core to realising the ambitions of our industrial strategy and is an area in which our cities and places are already innovating. The recently commissioned report by CENEX supported by a WM LA and Warwickshire CC working group, indicates that the take-up of EVs can be facilitated with positive action at strategic level and taking action to accelerate change would offer the region annual costs savings of between £45.7 million and £98 million[4].

1.2 This paper seeks to address how this innovation and existing provision could be accelerated, so that this region is at the forefront of developing the infrastructure we know that consumers and businesses will need; and that befits our role as the centre of automotive innovation in the UK. In summary, the specific role of the West Midlands Combined Authority (WMCA) through Energy Capital and Transport for the West Midlands (TfWM) has been identified as:

1. Ensuring adequate electric charging provision across the region to support the increased uptake of electric vehicles. This will be achieved by supporting the WM EV Working Group to continue to identify gaps in provision and by seeking investment to fill these gaps, developing an initial investment case for a spine of EV charging stations which require public sector intervention to come forward.
2. Working with Western Power Distribution and National Grid to plan effectively for the increase in power demand to support the growth of electric vehicles in the West Midlands; developing an effective mechanism through Energy Capital's Local Energy System Innovate UK funded projects in Coventry, Rugeley and Sandwell and expanding this across the region.
3. Achieving efficiency in procurement, supporting partners to share best practice and work together to procure services as required.

1.3 The evidence base behind this paper provides the Board with the current position relating to the development of Ultra-Low Emissions Vehicle (ULEV) infrastructure provision for the West Midlands – including the provision of electric charging points, and the underlying energy provision needed for them to be viable.[5]

1.4 Following engagement with the working group, an evidence-based approach for collaborative action is proposed, taking a multi-faceted, co-ordinated approach, that supports best practise already developed across the region and provides targeted investment in key locations for strategic benefit. This will maximise private sector leverage (and therefore investment into the region), minimises public sector cost, ensures the most inclusive delivery, and creates a long term and sustainable revenue stream for local authorities.

[4] Air Quality Damage Cost figures calculated using DEFRA guidance which includes primarily cost of health impact of proximity to pollutants as well as other costed factors

[5] CENEX – ULEV Strategy JAN 2020 commissioned by TfWM on behalf of Energy Capital

1.5 The paper also explains the need to work proactively with energy infrastructure providers to understand the underlying energy infrastructure and investment that will be needed for any approach to be successful, including consideration of the opportunity for additional strategic benefits from local reinforcement.

1.6 In short – the paper argues that the region has an opportunity – to use its strong collaboration between local authorities and LEPs, as well as targeted investment in strategic locations, to influence the market and quicken the pace of roll-out beyond what a free-market approach would otherwise enable.

2.0 Background

2.1 Meeting our climate change and air quality goals as a country and a region[6] inevitably means being more proactive about moving away from fossil fuel based transport, initially through electric vehicles, then progressively to hydrogen, whilst in parallel increasing the proportion of this fuel source that is generated from renewable sources.

2.2 Creating the conditions for growth in electric vehicle manufacturing and take up is fundamental to this region's local industrial strategy and its strategic transport plan. It has the potential to create a triple benefit – impacting on citizen wellbeing embedding inclusivity, environmental sustainability, and the creation of new avenues for export growth within a key West Midlands industry. The automotive industry is an extremely important sector, directly employing over 46,000 people in the region. It will be increasingly important, given the national policy direction, to support local manufacturers with the transition to ULEV to ensure that they can fully capitalise on upcoming opportunities.

2.3 The EV market – and the associated market for battery technology, is small but growing fast, as evidenced by the prevalence of EV model lines across the major car manufacturers, and the number of chargepoints springing up within major cities in the UK and Europe. The West Midlands is already innovating in electric, hydrogen and autonomous vehicles, reflecting the key role they play as part of a wider modal shift towards cleaner travel and the increased use of integrated public transport.

2.4 The effective roll out of EV infrastructure is subject to addressing a number of issues, including:

- *The number, scale and visibility of charging points for electric vehicles* – guided by an analysis of how many points we will need across our places, based in turn on projections of current and future demand and consideration of how market failure may be avoided for areas that are disadvantaged

- *The nature of the underlying energy infrastructure* – which is impacted by demands on the underlying low voltage (LV) network created by more chargepoints, and the inherent risk of lack of sufficient capacity at key locations

[6] #WM2041

- *An understanding of any gaps regionally* – Understanding local strategies for providing charging infrastructure will necessarily impact on neighbouring areas. Allowing the knowledge and expertise built at a local level to be shared across the region and identifying areas where people travelling across the region may need additional and different types of facilities.

2.5 General consensus, in addition to early stage findings from behavioural studies[7], show that a lack of visible infrastructure for charging is impeding confidence and providing a barrier to uptake in the EV market. Whilst new generation electric vehicles on the market have significantly improved range capacity than early models, consumers are still quoting 'range anxiety' alongside increased capital costs as a reason not to invest in the new technology. Many potential EV drivers will be able to charge at home (70% of residents across the West Midlands have access to a driveway for overnight off-street charging) but a significant number do not have this provision and even those who can charge at home will want the opportunity to charge whilst travelling through the region in the event of mis-calculation or change of plans. There is a perceived risk of the local EV market stalling if these provisions are not put in place to allay fears of those that may otherwise switch.

3.0 A Brief Outline of the Policy Environment

3.1 This section outlines the policy backdrop – in particular, the clear signal provided nationally and regionally as to the importance of transition to cleaner transport and infrastructure:

3.2 In October 2017, UK Government published the Clean Growth Strategy, following the 2015 Paris Agreement, which laid out an overarching ambition that all industrial growth should be founded on clean principles of reducing reliance on fossil fuels.

3.3 In July 2018, and following from the Clean Growth Strategy, the Government published the Road to Zero Strategy which states that no new conventional petrol and diesel engine vehicles will be sold beyond 2040.

3.4 In July 2019, WMCA committed to setting a West Midlands target of net-zero emissions no later than 2041, with interim targets based on a 2018 baseline of 36% reduction by 2022, and 69% reduction by 2027. A Climate Action Plan, #WM2041 is to be taken to WMCA Board in January 2020 to launch the consultation process, covering the key themes of 'clean growth', 'clean air', 'nature gain' and 'leading by local example'. Local authorities are developing their own approaches to the climate challenge, with some variation in targets, and the WMCA has committed to supporting those approaches wherever possible.

3.5 It should be noted that the West Midlands as whole has disproportionately high carbon emissions from transport (37% compared to 24% as a whole). This can primarily be attributed to the prevalence of strategic highways through the region, but adds weight to the need to allow both residents and transitory users of regional facilities to access clean fuels for travel.

[7] E.g. Consumer Research into Rapid Charging, PWC 2019 Commissioned by National Grid

3.6 Air quality is at an unacceptable level in many urban areas, with a child living within 50m of a major road in Birmingham experiencing lung growth stunting by up to 8% due to pollution, and life expectancy for 2.8 million people potentially reducing by up to 8 months.

3.7 EV infrastructure provision is high on the national agenda, with the recent letter from Grant Shapps in October 2019 laying out the expectation that Local and Regional Authorities will be expected to take a leading position driving the transformation (to electric vehicles) forward. The Mayor for the West Midlands is writing to the Minister of State for Business, Energy and Clean Growth regarding cementing the region's leading position on cost effective, clean, local energy systems and both the Secretary of State for Business, Energy and Industrial Strategy and the Permanent Secretary for the Department for Business, Energy and Industrial Strategy will be visiting the region to see our work in this area in January 2020.

4.0 The current regional position and Constituent Member activity

4.1 TfWM on behalf of Energy Capital recently commissioned CENEX to gather evidence on the regions current position, projections for future take-up, opportunities and risks of the sector transition and recommended next steps to accelerate the process. The outputs are given below;

4.2 Electric vehicle registrations in the West Midlands are currently running at 0.35% of the new car registrations (when adjusted to remove the influence of Lex auto-lease which then distributes the vehicles nationally). This is slightly behind the UK average of 0.47%.

4.3 In terms of energy infrastructure, the West Midlands currently offers 1,537 publicly available EV chargepoints across the region, this is 8th out of 12 UK Regions. It also has the second worse ratio of people to chargepoint and the worst ratio of vehicles to chargepoint, presenting a short-term risk of EV charging infrastructure undersupply.

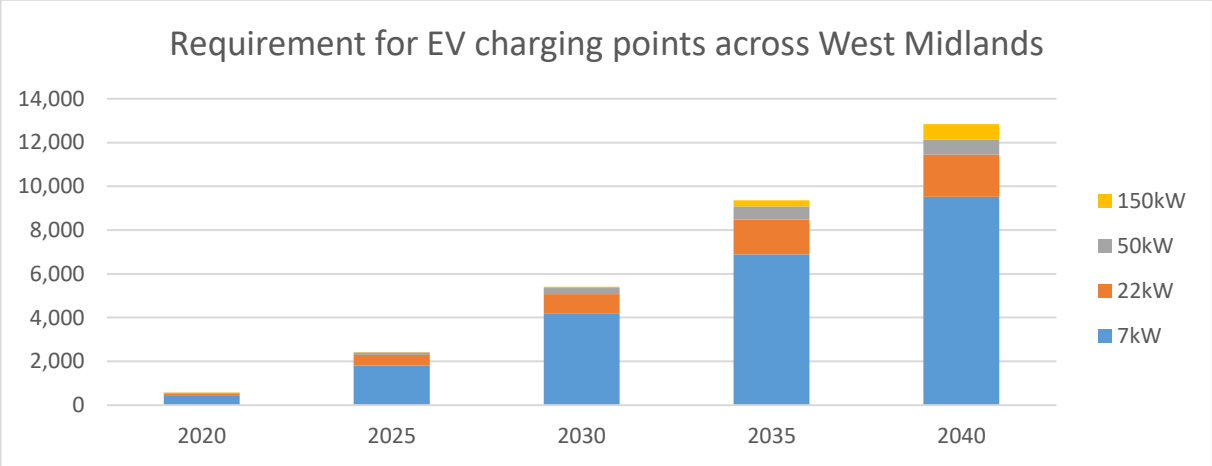
4.4 Constituent members have already identified and are putting in place strategies to counteract this risk. A great deal of knowledge and expertise has been accumulated by leading authorities including negotiating contracts to balance maximum public value and flexibility for future technology change, overcoming practical barriers to delivery and specifying protocols for interconnectivity with other national networks. Current public installations are completed, in progress or planned as follows-

- Birmingham have won over £2.92 from OLEV and are using this to lever a further £4-6 million in private sector investment through exclusive 12 year contract. The Private sector partner will install a minimum of 394 charge points. A full range of off street, on street, hubs in public car parks, arterial routes and within local communities.
- Coventry have won over £1.2million from OLEV to install 39 rapid chargers with partner ESB and Siemens and have completed installation of 80 slow and 10 fast on street residential charging points
- Wolverhampton have won £0.47million from OLEV and have installed 6 out of 24 rapid/fast chargers.
- TfWM – currently have 14 chargers across 6 P&R sites and at Summer Lane and are considering options for upgrade of facilities across the P&R spaces
- TfWM/LAs (not inc. Birmingham) are installing circa 200 on street residential chargepoints (7-22kw) with Virgin Media and partners, with project funding from Innovate UK

Many of the projects underway have focused or included elements which focus on the provision of charging for electric taxi fleets. This recognises the importance of shared mobility services in the transition to ULEV and the advantage of both visibility and local supply chain.

5.0 The future regional need

5.1 The scale of the transition to electric vehicles should not be underestimated. CENEX have calculated in their 'Medium' take up scenario that by 2040 nearly 10,000 7kW chargers will be needed to service up to 1 million electric vehicles.



In many ways the take up of EVs is inextricably linked to charge point provision. The medium case assumes some public sector action to facilitate the roll out of charge points. The more charge points are provided, the more this is likely to lead to increased EV take-up and drive the need for further provision.

5.2 These are made up of a range of charging scenarios as specified below;

	Equipment specification	**Typical use case**
Long stay	7kW	Residential Workplace Hotels
Short stay	22-50kW	Retail parks and shopping centres Leisure facilities Tourist attractions
Local hub	22-150kW	Transport hubs designed specifically for charging and modal interchange
Transit charge stations	50-350kW	(New) Service stations on key major routes around the West Midlands

5.3 Whilst the number of ultra-rapid (150kW+) units appears small, this is a particularly difficult end of the market. Due to the high power requirement resulting in fewer sites and the higher equipment cost this is likely to prove unpalatable to the private sector as it is currently economically unviable in all but a small number of cases.

5.4 It should be noted that the medium scenario is presented to give an indication of the scale of the challenge. This scenario, in isolation, will not deliver the West Midlands decarbonisation targets nor individual Local Authorities targets, and for that purpose should be considered within a suite of widespread changes to future modes of mobility.

6.0 The future gaps in provision

6.1 It is likely that if the private sector was solely responsible for the roll out of EV charging infrastructure the following gaps in the market would emerge:

- *Coverage in less affluent areas* – private sector will not want to invest significantly ahead of demand. There is a clear correlation between the early adopters of EV technology and average salary. There is a risk that provision will therefore be limited to affluent areas where the infrastructure investment returns would be deemed as attractive.
- *Coverage in areas of electrical grid constraints* – Electric vehicles draw significant power from the low voltage network. This will lead to a disparity of access, as there are certain areas within the West Midlands that will not be able to support EV charging infrastructure at scale without investment in local reinforcement. This would make roll out in these areas commercially unviable for a private investor. We are seeing evidence already of this impact through the VPACH[8] project, where many of the possible locations for even low powered charging stations have been rejected due to poor local electrical grid strength.
- *Less on-street charging in preference for higher power destination charging* – The commercial case for lower power charging stations (typically residential) is currently less attractive than fast and rapid chargers, due to a combination of issues including administering overstaying, ICE blocking, charging tariff and physical difficulty in provision. Without public sector leadership, the private sector would be predisposed to offer mainly higher power solutions, targeting more economically viable locations at Short Stay locations. This create disparity between those that can charge at home vs those that cannot.
- *Delay in roll out* – The private sector will follow demand due to the requirement to ensure profitability. In addition, sites may be banked until demand increases sufficiently to justify the remaining investment. Public sector intervention is therefore required to ensure that charging provision drives EV demand and expedites roll out and prevents land banking blocking the chance to lead the market in strategic locations.
- *Interoperability* – Whilst some attempt has been made by the private sector to ensure users can access sites with different operators, the current service is far from perfect. Already we have 15 different operators active in the West Midlands and additional companies seeking to gain market share for profitable locations. In order to provide a fully interoperable service to the public, there is a case for the public sector to drive interoperability through procurement intervention.

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[8] VPACH – An Innovate UK funded project led by TfWM to install on-street electrical vehicle charging points using Virgin Media infrastructure

7.0 A regional strategy on addressing EV charging infrastructure

7.1 This section outlines a range of roles that WMCA could undertake. These are based on the findings of the report commissioned by TfWM and delivered by Cenex in January 2020 and the agreed outcomes of the EV working group which has met twice in the past quarter to move this programme forward as quickly as possible.

7.2 The proposed regional strategy offers a range of support to Local Authorities who are primarily leading on the roll out. This support would be offered on an optional and modular basis; Constituent Members who are advanced in their individual strategies would access little support, whereas others who are still shaping their strategies could call off a more comprehensive support package.

7.3 Examples of support that could be offered include;

	Sharing best practice	**Co-ordination of resources**	**Joint delivery**
Long stay	• Developing a toolkit of standardised documents such as chargepoint specifications	• Developing a procurement framework for members who have not yet procured services • Coordinate with Distribution Network Operator (DNO) to create datasets of existing and planned energy infrastructure including known grid constraints. • Develop investment strategies to mitigate risk of poor local energy capacity. • Consider regional branding and integration with existing platforms such as SWIFT to ensure consistency of user experience	• Where Constituent Members have not already procured services for delivery and wish to take advantage of collective scale, WMCA could develop a joint delivery model. This could be a standalone vehicle (DelCo). This would not be comprehensive across the region as some Constituent Members are not in a position or would want to take this forward but this doesn't preclude the remainder from taking this approach if this is seen to offer an advantage[9].
Short stay	• Support with finding locations to ensure even distribution across region • Focus of discussion as to how best encourage local businesses to transition to ULEV		
Local hub	• Understand and mitigate the impact on commercial viability of potentially competing or complimentary local initiatives		

[9] It should be noted that individual local authorities can currently apply for government funding to support activities through OLEV (Office of Low Emissions Vehicles) but it is not known how many more rounds will be available and may be more financially efficient to go to government with a co-ordinated and collective approach

	• Ensure fit with other TfWM/ future mobility activities	• Share learnings and identify specific opportunities emerging from current TfWM and Energy Capital Innovate UK projects including VPACH, RESO, ZCR and GreenSCIES • Assisting in building investment case for public and private sector funding	
Transit charge stations	*This is a spine network of purpose-built facilities with ultra-rapid chargers intended to mimic a petrol service station user experience.* WMCA could take a leading role in developing these facilities at key strategic locations through a mechanism such as that outlined above for joint delivery projects. Where possible, renewable energy and storage should be integrated to de-risk the power demand and unlock further benefits.		

7.4 In the specific case of the requirement of Transit Charge Stations, it is recommended that WMCA take an immediate leading role in bringing these forward at key strategic locations. It is intended that these facilities would provide ultra-rapid charging to a variety of users including fleets without access to depot charging (or for whom the operating model is for the vans to go home with the operative at night), inter and intra-regional travel and own-use charging for shared mobility services such as car clubs. Particularly in the short-term, facilities could also accommodate residents who do not have access to off-street charging until local long-stay provision is more ubiquitous.

7.5 There is strategic benefit to WMCA investing in these assets to:

a) Mitigate the risk of land banking, where the charging assets may not be available for years until the private sector feels that the market is mature enough to be profitable, losing the benefit of stimulating demand. It is anticipated that these sites will not be economically viable for the early years without public subsidy.
b) Allow a more holistic view of the economic benefit of investment, including the provision of a large, de-risked, electrical network upgrade to catalyse renewable energy, storage and other commercial developments which would otherwise not be able to progressed.

7.6 Due to commercial pressures, there is a scarcity of available sites in locations besides arterial routes. Land costs already reflect this lack of supply. At the same time, the ability of the energy distribution network to support high power charging is highly geographically variable. WMCA is in an excellent position to strategically evaluate sites for this very small number of opportunities and therefore should be in a good position to make sound investment decisions on this basis.

7.7 In brief, a regional strategy has overarching benefits:

a) Ensuring efficient deployment of infrastructure that matches the grid and has the least consumer overlap. Specifically Charging Stations, Hubs and Short Stay facilities will have spheres of influence that can be optimised. They do not follow Local Authority boundaries.
b) A Regional Strategy can provide confidence to both the Private Sector and Central Government that any investment will be used most efficiently. Driving confidence will attract funds.
c) Co-ordination and sharing best practice needs a forum that can be provided via Steering and Working Groups.
d) Given the critical importance of the Energy Grid, interactions with Western Power Distribution, National Grid and Highways England can be managed on behalf of the collective, saving resource and being received better by the organisations we are seeking assistance from.
e) At a regional level, and in consultation with the Steering Group, we will be able to consolidate some of the technical resources and direct any professional consultants for the benefit of multiple Authorities, thus achieving cost and efficiency savings.
As aforesaid, the Regional Role would not be in isolation to Local input which would be achieved via Steering and Working Group.
The Steering Group will also be critical in providing a link into the Local Authorities so that need is properly understood and to ensure the necessary close links with Planning and Transport colleagues.

8.0 Implementation

8.1 The coordination of the different support packages will be administered though the continuation of the West Midlands EV working group, and a new steering group, which should provide a forum to collaboratively work through opportunities and barriers for the overall EV infrastructure roll-out. This is already in progress but should be formally ratified and resourced appropriately depending on the requirements and appetite of Constituent Members.

8.2 The implementation of developing transit charging stations will depend on firstly funding to develop the investment case and secondly the investment case itself. **The development of the investment case** for the transit charging stations would initially require:

- An architect to develop the concept, based upon 3 types of facility, giving a base to look at costs and revenue with scope to be accommodated on different sites. Suggesting Micro, Mid and Large facilities.
- Energy Capital to work with WPD and National Grid to undertake an infrastructure assessment.
- Real Estate Agents to provide site intelligence and conduct land searches, on and off market.
- A management consultant to develop the financial case and provide assurance. Advise on the potential delivery vehicle structure and operational agreements.

Significant interaction with potential Operators and Local Authorities will be required. This will be performed by WMCA/ TfWM and has already begun. Additional resource will be required to continue this work. It is not possible to predict the cost of this work, but sensible assumptions would put this at £500,000 including the internal resource required. Funding will need to be sourced from Central Government.

8.3 **The outline development cost** for the transit charging stations carries high uncertainty until the development work is undertaken. As a high level indication, an assessment puts the cost of a mid sized facility of c. 8-12 ultra rapid chargers at £6-8m. A spine network may contain 6-10 stations (each with multiple ultra rapid chargers) at key strategic locations.

The greatest likely costs come from site acquisition and clearance, construction, plus fees and infrastructure upgrade. The latter can only be estimated until sites are identified and assessed for the reasons aforesaid.

8.4 **Facilitation and co-ordination:** In order to provide a strong facilitation role and dependant on the package support to be offered, a budget of c.£500,000 per annum is likely to be required over a five year period. In addition to the sum referenced in 8.2, this funding will need to be sourced from Central Government.

8.5 **Securing funds and assisting the investment case for local delivery:** It would be our intention to offer support where required and facilitate a cohesive regional strategy to best support members in accessing central government funds. It is recognised that there currently an established route for each LA to apply for funds[10], it is thought that these individual applications would be looked on more favourably if it could be seen in the context of a regional framework for delivery. This would clearly involve working closely with the steering and working groups to define each member's requirements in more detail.

9.0 Implications for our Energy Infrastructure

This section outlines the energy requirements of any material expansion of EV Charging infrastructure across the region:

9.1 The region's Low Voltage (LV) electricity supply network is used by domestic and industrial customers, as well as any potential public- or privately- sponsored EV charging points. The costs of network reinforcement in order to accommodate any new EV charging infrastructure may range from £0 to £1m+ per site depending on the location and the range of competing uses. A modest cost estimate for the whole region in aggregate over the next 10 years could be £200M-£800M.

9.2 Under current energy market regulations, these costs will *at best* be shared across all network users (including the fuel poor and industry) and *at worst* be met in full by the next-coming user of the network local to a given charge point (e.g. a housing developer or potential inward investor).

[10] OLEV funding administered through DtI supporting projects with a £600 million fund to 2020

9.3 For these reasons, alongside any initiative taken by the region in EV charging, it is important that the region retains the capacity and competence provided by Energy Capital to engage at strategic planning level with the energy network providers and in any given proposed investment location.

9.4 Regional energy infrastructure financing mechanisms to share the risks and rewards of such investment in ways that reflect local political priorities also need to be developed. The work to develop these competences and mechanisms has been taken forward separately by the WMCA and partners, led by Energy Capital, and this will need to be further supported and accelerated in parallel with any investments in EV infrastructure alone.

10.0 Next Steps

10.1 Subject to approval from WMCA Board, specific next steps to develop the approach outlined in this paper are:

Step 1: Continue to share knowledge and build a more granular evidence base:

a) To evolve the West Midlands EV Working Group into a regional steering group which shares learning and inputs information on activity led by local authorities and LEPs to facilitate the identification of gaps in EV charging provision.
b) Energy Capital and TfWM to further consider and share the final results of the Cenex consultancy work, to gain a clearer picture of provision and demand across the region.
c) Energy Capital to collaborate with National Grid and Highways England to consider the impacts of current studies being undertaken of EV charging provision on the strategic road network.
d) Energy Capital to assess the increased demand on the region's low-voltage networks in Coventry, Rugeley and Sandwell resulting from increased electric charging provision, and work with Western Power Distribution and National Grid on addressing this at a strategic level[11].

Step 2: Agree a regional delivery plan:

e) TfWM, WMCA and the Steering Group to consider what support each Constituent Member would benefit from and agree a co-ordinated delivery plan, including agreement on a joint approach to procurement of services requested by Constituent Members.
f) WMCA's Investment Director to develop a more detailed investment case for investing in an infrastructure spine of charging stations across the WMCA area and any other gaps in provision identified, where there is regional benefit in doing so and this supplements local provision.
g) Energy Capital to undertake a strategic assessment of the potential impact of increased demand on the network across the region in partnership with the DNO's Western Power Distribution and Cadent.

[11] This work will be funded through 3 Innovate UK funded projects, which are soon to be announced under the Prospering from the Energy Revolution fund, where Energy Capital secured funding for three out of ten projects being awarded nationally.

Step 3: To secure investment for specific opportunities

h) Secure investment and establish delivery mechanisms for identified opportunities as appropriate.

11.0 Financial implications

11.1 The full and long term financial implications arising from the recommendations set out by this report are unknown

11.2 The recommendations of this report are to:

1. Support the acceleration of electric charging and enabling energy infrastructure in the West Midlands;
2. Support a collaborative strategy to expand electric vehicle charging infrastructure across the West Midlands; and
3. Progress steps 1, 2 and 3 as outlined in **Section 10**.

11.3 To deliver the above, significant additional funding is required. There is no local funding available at present.

11.4 The short term costs should be regarded as high level estimates only, subject to review and procurement processes.

11.5 In order to initially progress the initiative, Step 1 must be continued. The cost of Step 1, the facilitation and support role, is expected to be £500,000 per annum for a five year period.

11.6 This cost is an estimate not substantiated by detailed workings or a rigorous cost review. A detailed breakdown of this estimate has not been provided.

11.7 Further, it is not known for how long Step 1 can be continued with existing resources, and how much of this aggregate cost requires additional funding to be secured.

11.8 The initial costs for Step 2, to develop a detailed investment case for an infrastructure spine of transit charging stations, are estimated to be £500,000, including internal resource.

11.9 This cost assumes the need for an architect, Energy Capital resource, real estate agents and a management consultant.

11.10 The tendering process has not yet begun and likely suppliers are not yet known at this stage. Therefore, the costs of £500,000 are considered to be subject to a significant degree of uncertainty, and the funding needed must be secured.

11.11 The long term local delivery of an infrastructure spine would require funding from central government. The quantum of costs and revenues resulting from this work are unknown before the development of the detailed investment case.

11.12 Initial desktop estimates are that a mid-sized transit charging station of c. 8-12 ultra-rapid chargers would cost between £6m and £8m.

11.13 Assuming the infrastructure spine comprises 10 such stations, at an average cost of £7.3m, and that for each station £6.25m of public funding is required, then the total public cost of the spine would be £62.5m.

11.14 The patronage and operating surpluses generated from the stations cannot be reliably estimated at this stage.

12.0 Legal implications

The Authority has functions and powers relating to economic development and supporting the local economy. The rapidly evolving market for electric vehicles is an important consideration for the West Midlands both in terms of the provision of facilities for individual vehicle and the development of capacity in the Automotive sector. The Combined Authority also has powers and responsibilities in relation to air quality and transport which will be relevant in these proposals. The Authority has a functional power of competence to undertake actions which are related to and in furtherance of existing powers. Any funding agreements with third parties will be subject to any conditions and stipulations attached to central government funding as appropriate.

Where it is proposed that the Authority is involved in the direct provision of any facilities as opposed to simply funding the provision by others, there may be a need for consents to be obtained to undertake works in or adjacent to the highway, for easements or licences to place facilities in particular locations and power supply agreements. These would need to be negotiated on a location specific basis respecting Local Authority powers and responsibilities.

13.0 Equalities implications

13.1 The strategy is likely to directly positively impact electric car vehicle owners who are more likely to be from more affluent backgrounds. However, the public sector intervention set out in this paper will also help to ensure charging provision is in place for those from lower socio-economic backgrounds wishing to access electric vehicles through emerging car clubs and other shared services. The positive environmental impact of the strategy is also likely to positively impact people from lower socio-economic backgrounds, ethnic minority groups, older people and people with disabilities as air pollution disproportionately impacts people from these groups. Direct equalities implications are likely to will rise from any bids or infrastructure proposals which will be assessed on a case by case basis. Activity such as car clubs has potential to benefit the inclusion agenda which will need to be balanced against a natural bias in the early market adoption of ULEV technologies to the more affluent demographics.

14.0 Inclusive Growth implications

14.1 The development of ultra low emission vehicles and associated infrastructure contributes to the improvement air quality and reduces harmful particulates in the environment. The propositions made in this paper will be factored into the Climate Action Plan which has been developed for publication/consultation at the January 2020 WMCA Board. Air quality and the extent to which the benefits of working at scale – such as those portrayed in this paper – are shared by all of our communities, are central elements of the WMCA's inclusive growth framework. Any decision to proceed with ULEV at-scale in the region would be underpinned by a business case which scrutinises inclusive growth impact as part of the strategic case.

15.0 Geographical Area of Report's Implications

15.1 This report relates primarily to the metropolitan West Midlands and Warwickshire as these areas have engaged in the initial workshops. However, there is potential to work across the three-LEP geography depending on appetite from WMCA Members.

16.0 Schedule of background papers

- ULEV Adoption and re-fuelling report to STOG, 16 April 2018
- ULEV Update report to STOG August 2018
- Electric Vehicles and Air Quality briefing note, 3rd June 2019
- WM ULEV Strategy Workshop Update 6th July 2019
- Low Emissions and ULEV Strategy report, STOG 7th October 2019