



A strategy to provide Infrastructure for Zero Emission Vehicles (IZEV): Stakeholder Consultation Slides

July 2021,
Energy Capital, WMCA



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Policy and strategy development
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An IZEV strategy is needed because:

The West Midlands has committed to achieving net zero by 2041

Approximately 30% of today's carbon emissions in the region come from transport. Most transport carbon emissions are now from surface transport, primarily from cars. Surface transport carbon emissions have not significantly reduced over the last 30 years meaning they are now the UK's greatest source of carbon emissions, making them a key area of focus for decarbonisation.

Lots of work is already being done on transport planning and spatial planning, including reducing the need to travel and promoting forms of active travel

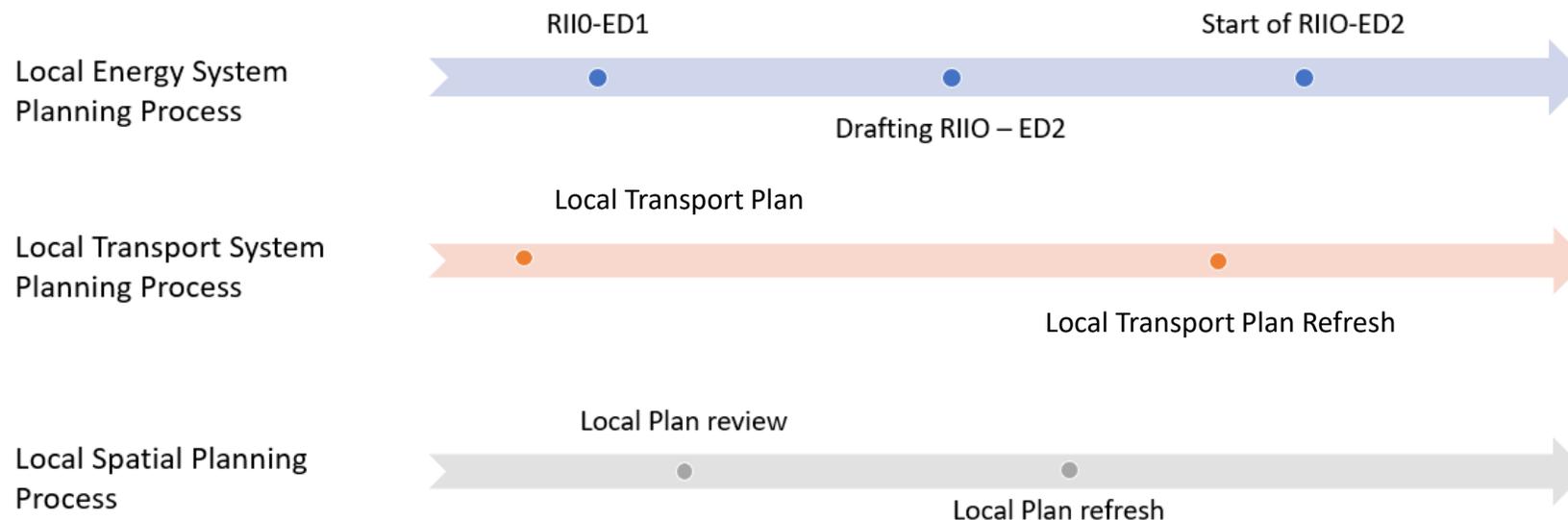
However, where journeys are necessary, either by public or private transport modes, these need to be fuelled by low or zero carbon fuels to enable us to meet our targets

- **Decisions by operators as to whether to make the switch away from fossil fuels have been proven to be heavily dependent upon whether there is the necessary infrastructure in place to support the transition.**
- This infrastructure could be in the form of:
 - Access to suitable electric charging facilities
 - Upgraded electrical capacity to feed new electrical charging stations
 - Suitable hydrogen generation and distribution infrastructure

(The use of biofuels is likely to also form an important part of the transition nationally, but is considered to have less infrastructure barriers to deployment, so is not a feature of this strategy)
- **The provision of this infrastructure requires planning and investment to support and enable the transition.**
- **The planning and investment decisions for electricity and hydrogen are currently undertaken by different organisations to those who plan for and operate transport systems.**

A key role of this strategy is to influence the energy infrastructure planning process to take better account of transport decarbonisation plans

- This IZEV strategy is being developed to bridge the gap between the relevant parties, by bringing them together to explore the options for the West Midlands and ensure they are using the same information to inform each of their planning and investment processes
- This is important because investment decisions for infrastructure are taken well in advance of delivery, so some timely decisions need to be taken regarding the direction of travel of this transition.



Below is the schedule for the development of the IZEV strategy

Proposed Timetable	Action
19 th July 2021	Publish presentation, questionnaire and invite partners to consultation events
5 th August 2021 10 th August 2021 12 th August 2021	Host 3 workshops with partners, focusing on: 1 - Use Cases and Infrastructure for Hydrogen and Alternative Fuels in West Midlands Transport 2 - Infrastructure for Electric Vehicle Charging in the West Midlands 3 - The Role of the Public Sector in Driving Infrastructure for Zero Emission Vehicles
30 th August 2021	Consultation closes
31 st August 2021	Update strategy based on consultation responses
9 th September 2021	Produce draft strategy prospectus document
14 th September 2021	Send to Energy Capital Board for final inputs
21 st September 2021	Energy Capital Board sign off
22 nd – 29 th September 2021	Design prospectus for publication with TfWM

Looking through an energy lens at transport decarbonisation enables the identification of low regrets infrastructure investment options

- This strategy is looking through an energy lens.
- It aims to bring transport together with the electrical and gas elements of the energy sector, rather than the petroleum sector that the transport system is used to working with.
- These parts of the energy sector are planned, invested in and regulated in a very different way, bringing new challenges.
- To determine what energy infrastructure is required to support the transport sector to decarbonise, a range of decisions about future transport plans have to be made. With both sectors innovating and changing rapidly, this in itself is a challenge.
- **This strategy therefore needs to be a living entity that is updated to reflect changes in transport policy and innovation over time.**
- However, we recognise that **action is also needed now** to ensure that the decarbonisation process is able to take place and so **this strategy seeks to identify least regrets investment options** to enable this.

The Local Transport Plan is the place that transport policy & strategy options are explored, which this strategy then seeks to respond to

The West Midlands Combined Authority (WMCA) has a statutory duty to produce and review the local transport plan (LTP) and policies for the area. The WMCA and the 7 Local Authorities then have duties to use their functions to deliver that plan.

5 motives for change have been identified:

- Sustaining economic success
- Creating a fairer society
- Supporting local communities and places
- Becoming more active
- Tackling the climate emergency

There are some trade offs that are required in developing a new strategy when considering the role of zero emission vehicles, for example, whilst the shift will likely bring significant benefits in air quality and carbon emissions, simply shifting all existing ICE travel to ZEVs does not help address issues such as road safety, congestion and the need to get people to be more active. There are also risks that rapid electrification and the ban on ICEs could worsen some transport inequalities. The LTP will need to try to set how the elements of the transport system can effectively play their part in both decarbonisation and in addressing the other motives for changes. **You can find out more and input to the development of the LTP [here](#), by ‘Reimagining transport in the West Midlands’.**



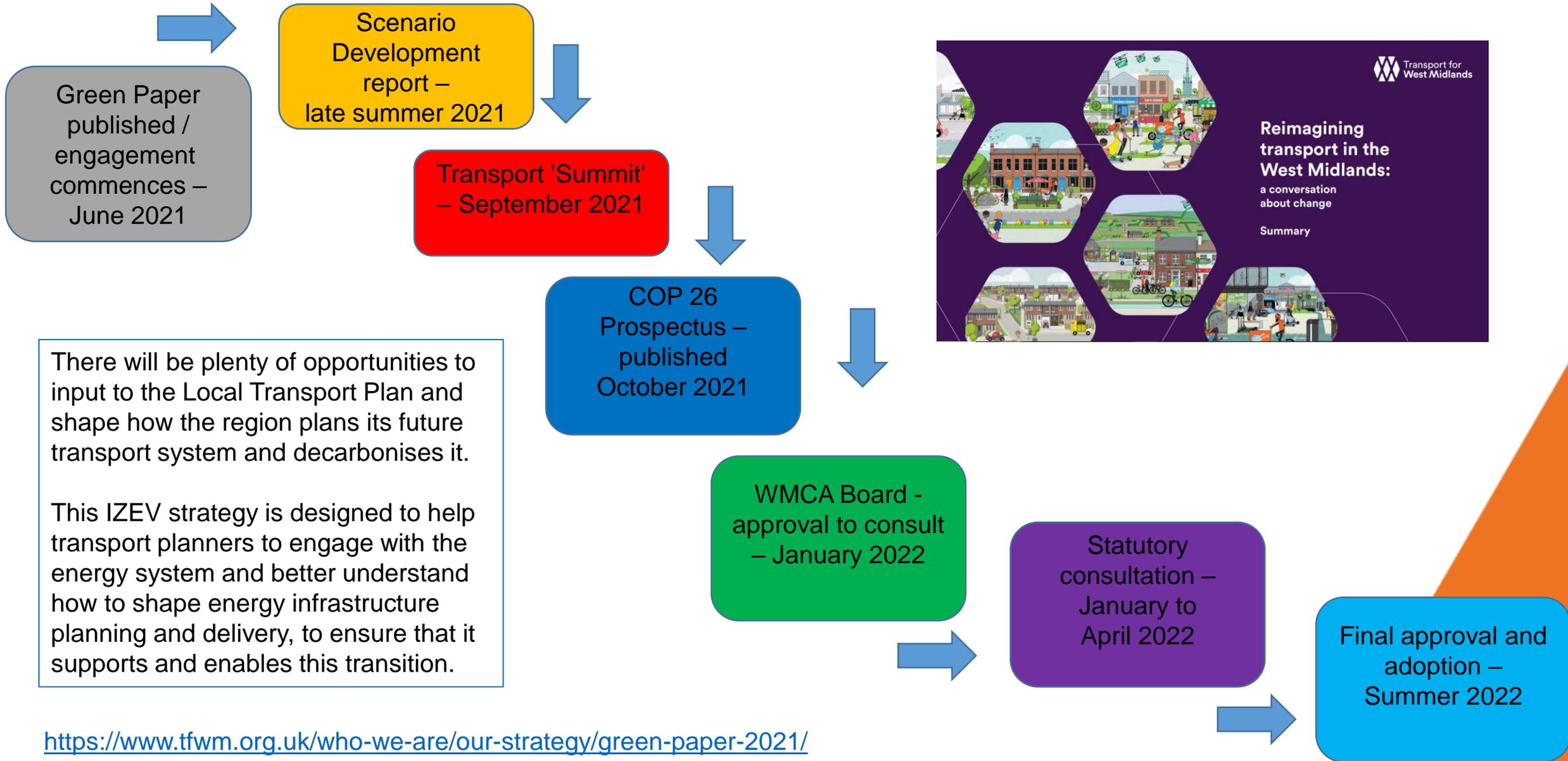
'Reimagining Transport in the West Midlands' identifies the need to switch to zero emission vehicles

Research commissioned by TfWM suggests that because the switch to zero emission vehicles will take time, in order to achieve our carbon reduction goals, the energy we use for transport in the short term will also need to reduce. There will need to be a significant change in travel behavior and the vehicles used, which will require a mix of actions framed below:

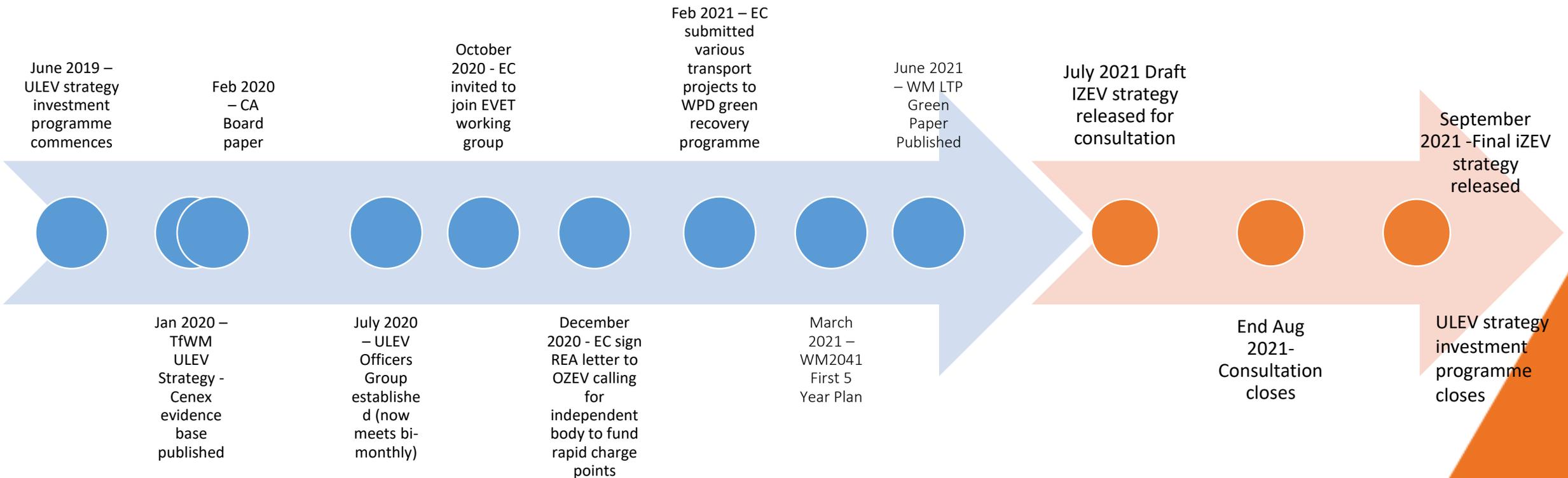
AVOID	SHIFT	IMPROVE
<p>Reductions in the frequency of travel – consolidation of trips or replacement of travel with use of information and communication technologies</p> <p>Changes to where people travel to/from – making shorter journeys and/or to places that are more easily accessed and served by more sustainable modes of travel</p>	<p>Changing the vehicles we use to travel – modal shift to more sustainable modes such as public transport and walking and cycling</p>	<p>Improving the vehicles we use to travel - switching personal and public transport journeys to vehicles that use alternative fuels but use less energy.</p>

Source: <https://www.tfwm.org.uk/media/ekxhr3lk/ltp-summary-final.pdf>

The Local Transport Plan timetable



The following key inputs have been considered in developing the IZEV strategy



This strategy builds on the work of a wide range of experts shaping policy in the West Midlands



Over the past 18 months a range of evidence has been commissioned by various partners across the region which has been used to inform this strategy:

West Midland ULEV strategy report Jan 2020

- Over 10,000 on-street residential chargers needed
- 10-15 ultra-rapid charging hubs for transit/ multiple user case needed

Black Country ULEV strategy report Jul 2020

- Sets 2025 target for public EV chargers
- Commitment to 100% EV for council owned cars and van and installing suitable infrastructure to do so

WMCA Park and Ride EV Strategy March 2021

- 65 TfWM managed Park and Ride Sites
- Could provide charging to commuters and overnight for nearby residents
- Smart charging, battery storage and solar to be considered to mitigate grid connection issues

TfWM

- Atkins work on transport decarbonisation pathways
- WM Local Transport Plan Green Paper
- New WM Local Transport Plan

WMCA Environment team

- WM2041 5 year plan

West Midlands Local Authorities

- Support of the ULEV Officers Working Group

Midlands Energy Hub

- Strategic Outline Case for Ansty Clean Hub
- Identification of 14 more sites in W.Mids for development

Midlands Connect

- Alternative Futures
- Alternative Fuels
- EV Charging infrastructure locational modelling

Please let us know about any other local intelligence that you think could also help to inform this strategy.

Infrastructure requirements

TfWM's ULEV strategy shows the projection of electrical charging infrastructure required to 2040

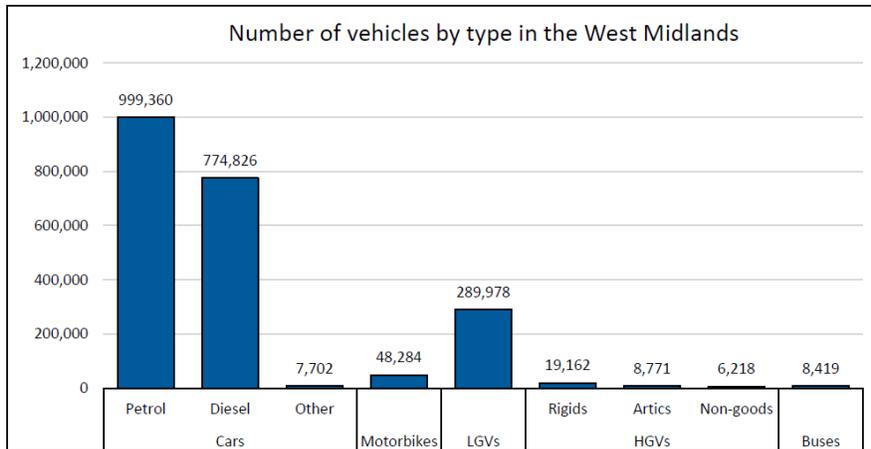
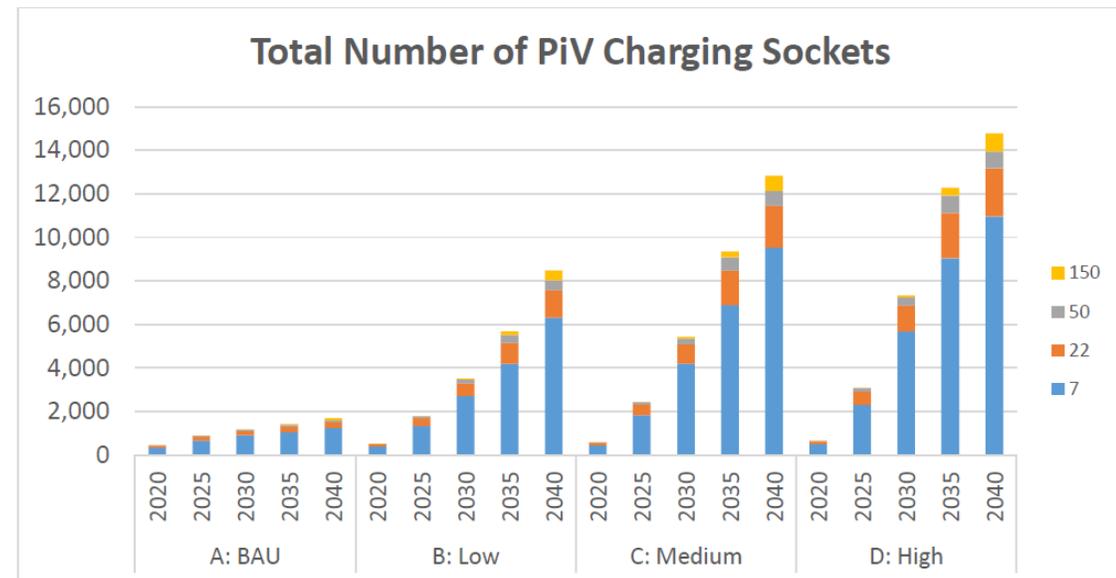


Figure 6: Vehicle parc by vehicle type and fuel



Future requirements** – in terms of types of EV chargers

	Total Vehicles	EVs	% EV
Warwickshire			
North Warwickshire	56,221	135	0.24%
Nuneaton and Bedworth	79,980	138	0.17%
Rugby	69,236	261	0.38%
Stratford-on-Avon	102,232	713	0.70%
Warwick	96,289	408	0.42%
West Midlands (Met County)			
Birmingham	796,070	2,652	0.33%
Coventry	160,143	376	0.23%
Dudley	181,552	417	0.23%
Sandwell	157,601	314	0.20%
Solihull	214,567	1,795	0.84%
Walsall	142,451	275	0.19%
Wolverhampton	127,078	218	0.17%
Total West Midlands	2,183,420	7,702	0.35%
UK	39,364,569	186,386	0.47%

Current position* – in terms of vehicle park and infrastructure

*Based on 2019 data
**Based on ICE ban at 2040, trajectory will need to be steeper to meet 2030 target



Transport for
West Midlands

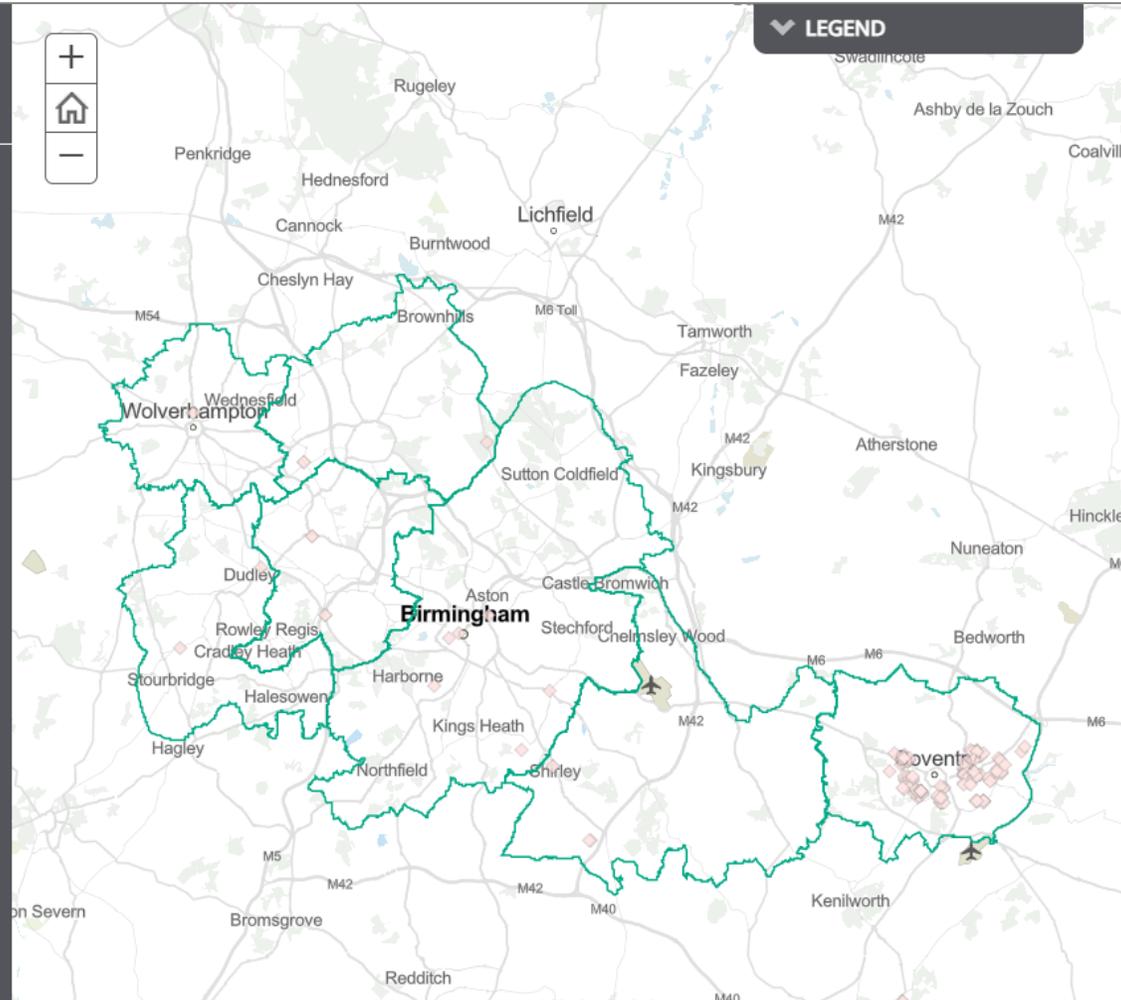
Energy in Transport

7kW Charging Points

In order to allow an equitable transition to Ultra Low Emission Vehicles (ULEVs), charging infrastructure is being rolled out on the public road network with an initial drive for low powered (i.e. slow speed) on-street residential charging.

22kW Charging Points

Destination charging is also being rolled out where facilities such as leisure complexes, super markets and other retail facilities are offering mid-speed charging facilities to entice customers as well as in work places to encourage take up of EVs



Local authorities have already been investing in electric charging facilities across the region



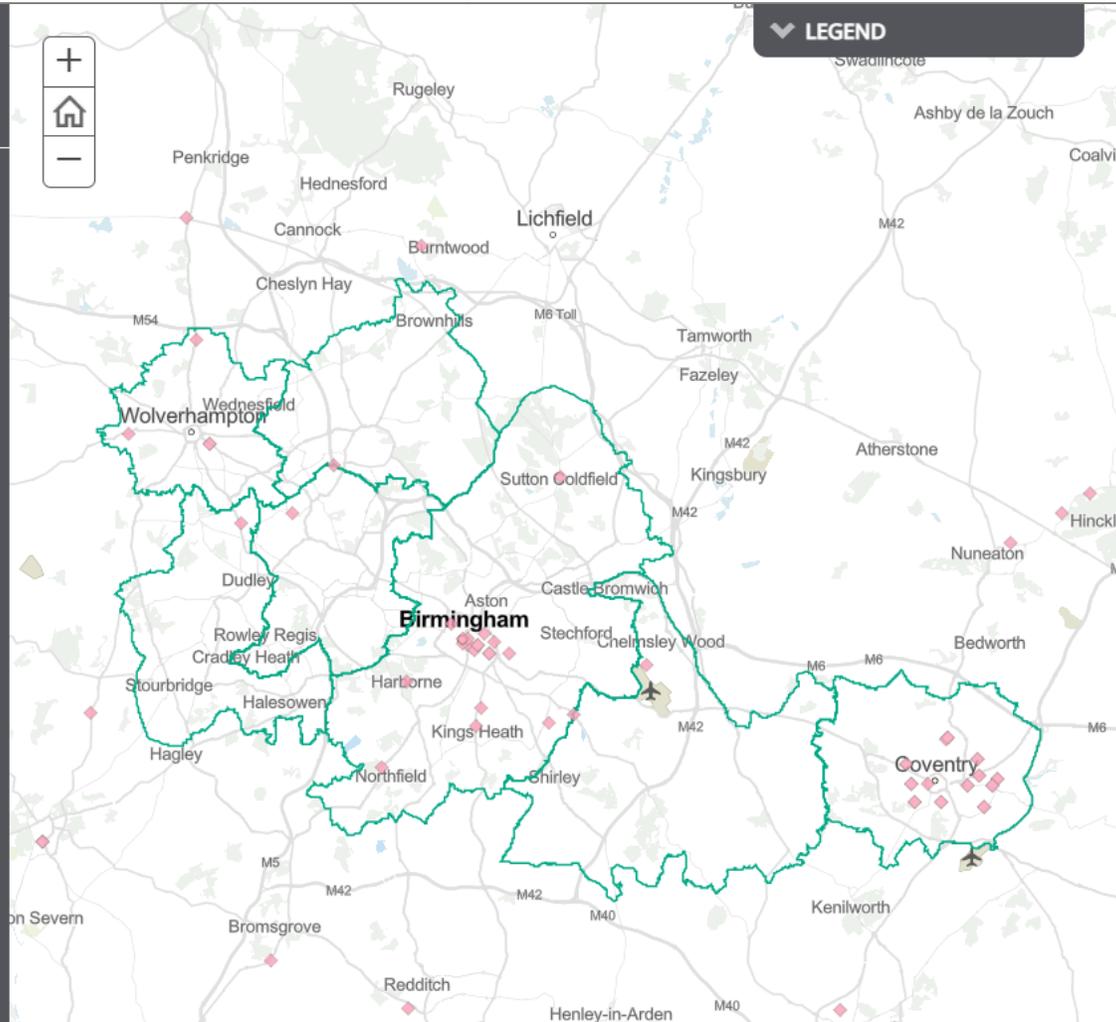
Energy in Transport

22kW Charging Points

Destination charging is also being rolled out where facilities such as leisure complexes, super markets and other retail facilities are offering mid-speed charging facilities to entice customers as well as in work places to encourage take up of EVs

50kW Charging Points

The fastest chargers available in the West Midlands currently are 50kW chargers and these have been installed in some petrol stations or other transit locations but still require a lengthy wait for enough capacity to continue



The private sector have also been investing in electric charging facilities across the region and are continuing to do so where it makes economic sense

ENERGYCAPITAL



Energy in Transport

Key Route Network

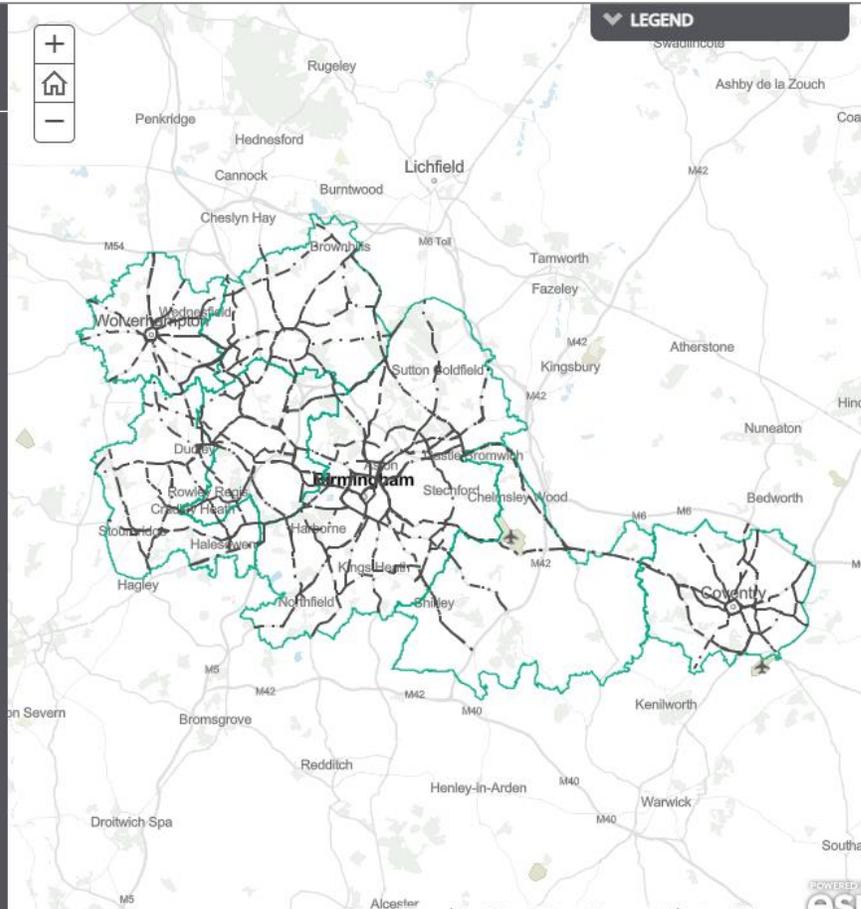
The West Midlands has an extensive key route network allowing private vehicles, distribution and logistics fleets, emergency services and others to traverse the region

7kW Charging Points

In order to allow an equitable transition to Ultra Low Emission Vehicles (ULEVs), charging infrastructure is being rolled out on the public road network with an initial drive for low powered (i.e. slow speed) on-street residential charging.

22kW Charging Points

Destination charging is also being rolled out where facilities such as leisure complexes, super markets and other retail facilities are



 West Midlands
Combined Authority

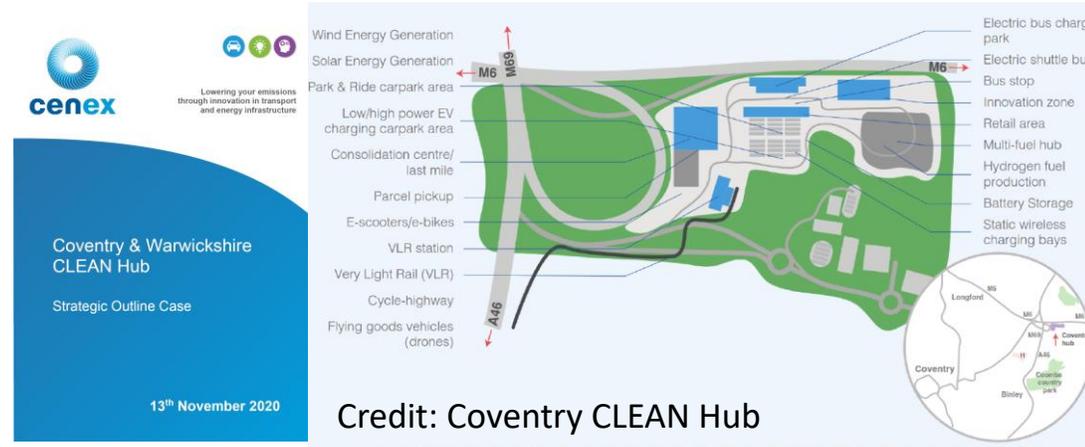
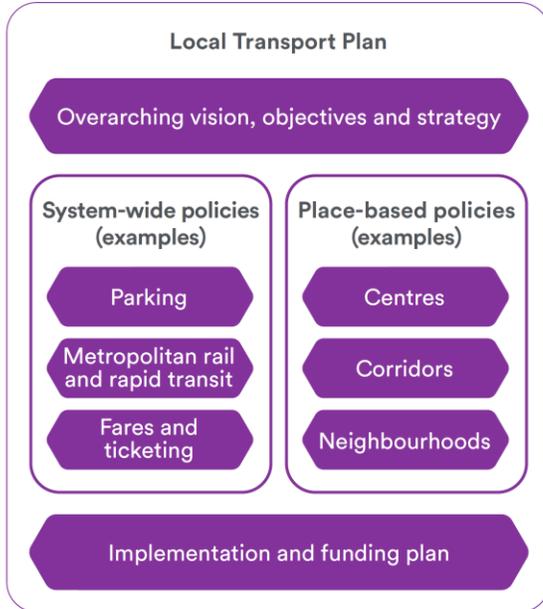
WMCA Board

Date	14 February 2020
Report title	Electric Vehicle Charging and Enabling Energy Infrastructure: A West Midlands Approach
Portfolio Lead	Environment, Energy & HS2 - Councillor Ian Courts
Accountable Chief Executive	Deborah Cadman, West Midlands Combined Authority email: deborah.cadman@wmca.org.uk tel: (0121) 214 7552
Accountable Employee	Ian Martin, Director of Investment & Commercial Activities email: ian.martin@wmca.org.uk tel: 07921 105435 Cheryl Hiles, Director, Energy Capital email: cheryl.hiles@wmca.org.uk tel: 07814 972921 Kate Ashworth, Energy Infrastructure Lead, Energy Capital email: kate.ashworth@wmca.org.uk tel: 07469 916673
Report has been considered by	Programme Board - 31 January 2020

<https://governance.wmca.org.uk/documents/s3953/Report.pdf>

A gap was identified by the WMCA Board in the provision of ultra rapid charging services, which can have a significant impact on the electrical network. With current demand for these services currently fairly low, private sector investment is not yet widespread, but without the provision of adequate infrastructure, the take up of zero emission vehicles will not be as rapid as needed to meet our carbon targets.

A range of local plans and projects are being developed, which this strategy is built upon



Consultation Question:
What insight could you provide from local initiatives and plans that should be reflected in this strategy?

Some current projects include:

- Coventry all electric bus town
- Sprint development including pantograph charging
- Metro extension(s)
- Zero Emission Mobility hubs
- Zero Emission Bus Regional Area (ZEBRA)



Credit: Tyseley Energy Park

Transport for
West Midlands

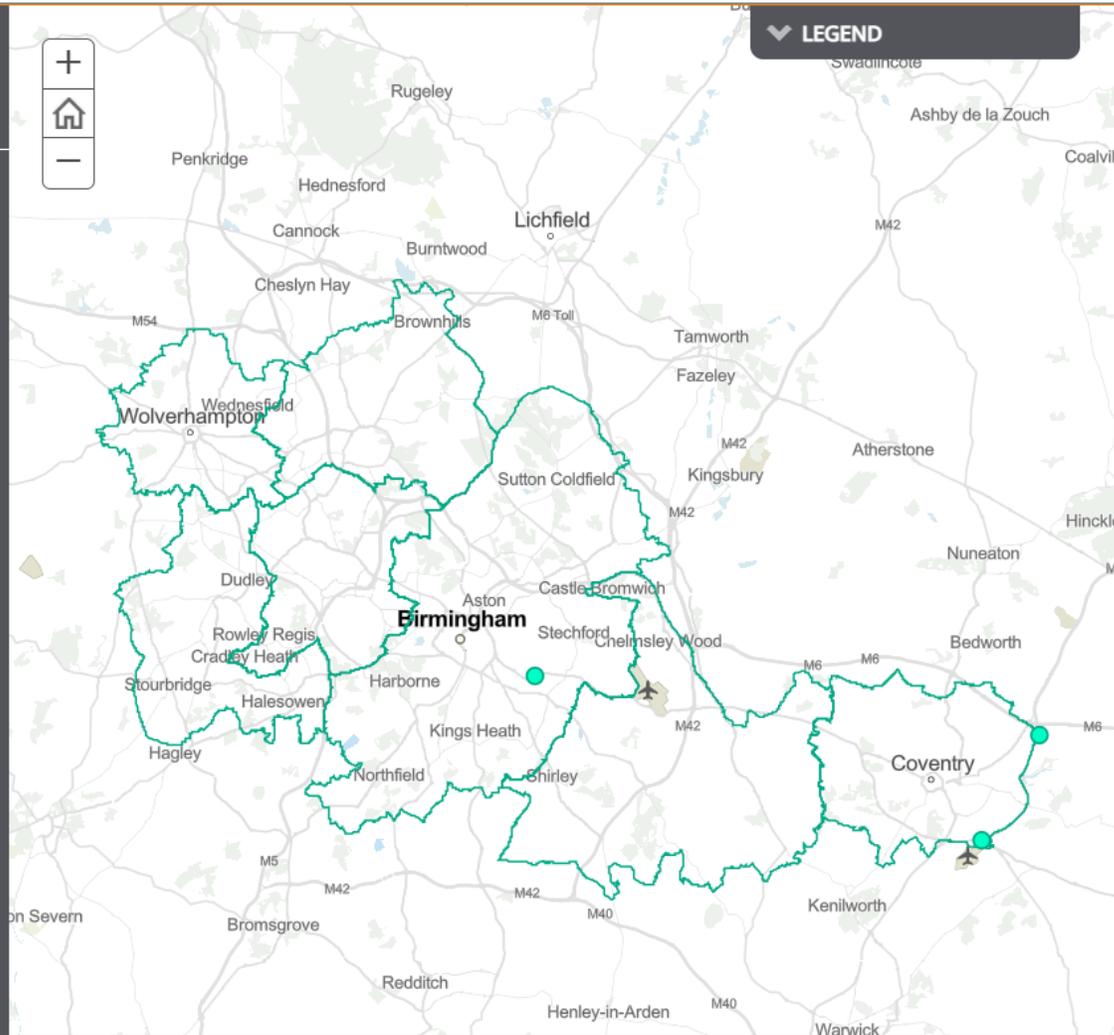
Energy in Transport

Potential New Hydrogen
Stations

Some of the ultra-rapid charging sites may also offer alternative fuels such as hydrogen which may offer significant benefits to certain sectors such as haulage. These sites will still need to utilise significant connections to the underlying energy infrastructure

Bus Opportunity Chargers

High energy draws are not just limited to strategic hubs. Recent research commissioned by TfWM and delivered by Ricardo shows that the bus networks may need a series of on route high power connections in order to fully electrify their routes



There are also far fewer hydrogen refuelling facilities currently being developed due to uncertainty around the availability of 'Green' hydrogen and a variety of other factors

Infrastructure for hydrogen and alternative fuels

Research undertaken by Midlands Connect highlighted several challenges relating to the adoption of alternative fuel vehicles.

Amongst fleet operators, the three most frequently cited barriers were:

- a lack of recharging and refuelling infrastructure
- the upfront cost of vehicle acquisition
- lack of vehicle availability.

Amongst vehicle and infrastructure suppliers, the top three barriers to alternative fuel uptake were:

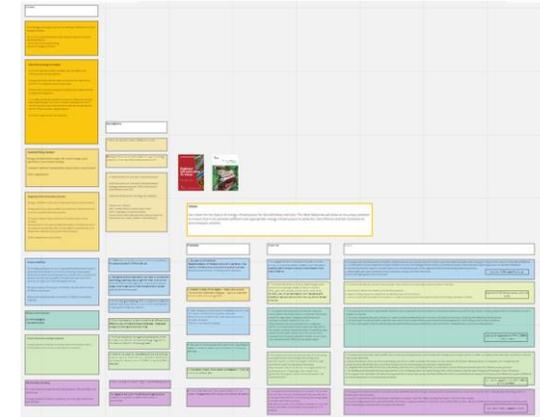
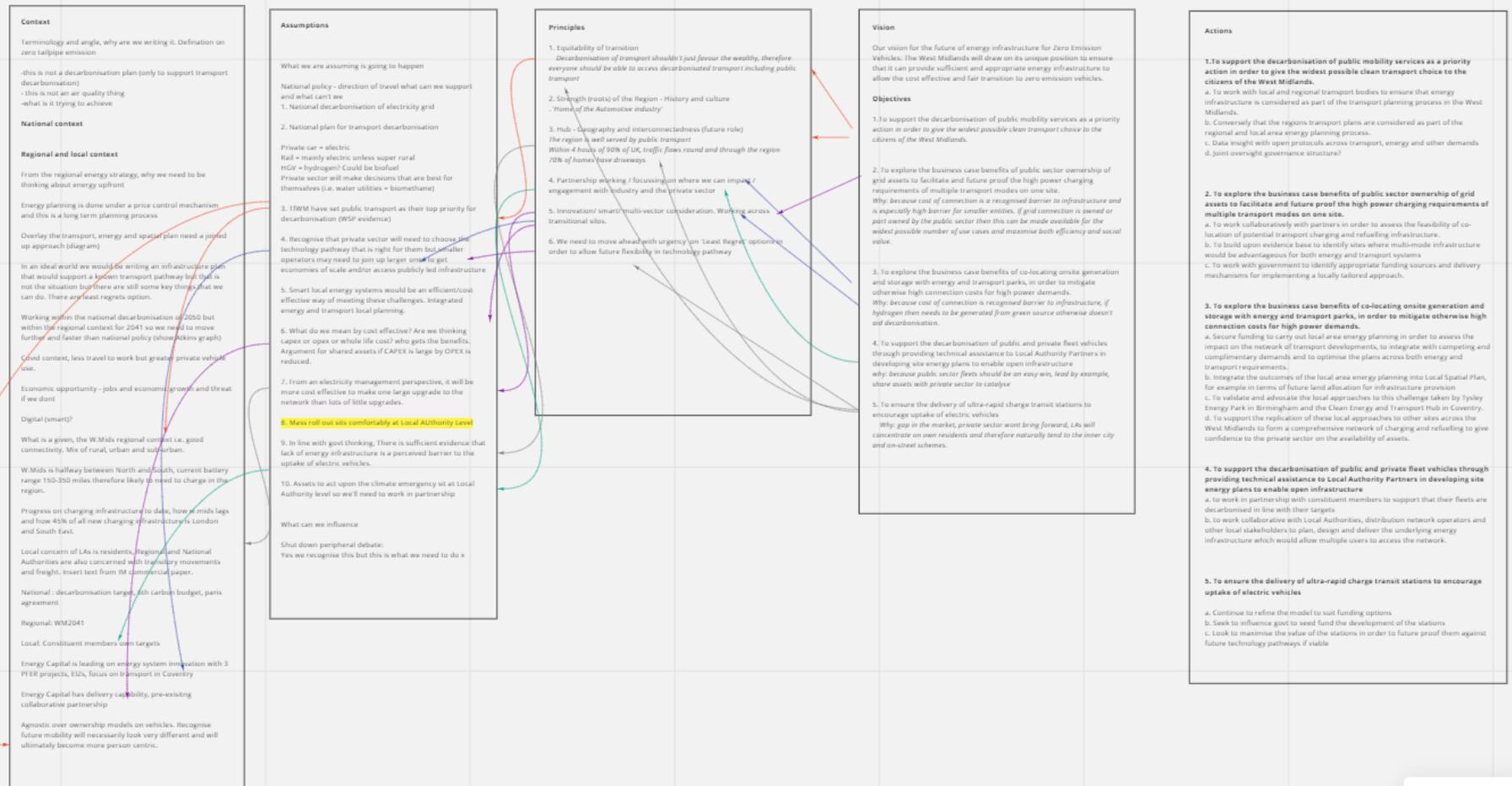
- upfront vehicle cost
- uncertainty over residual values
- lack of recharging and refuelling infrastructure, with infrastructure availability being constrained by access to sites of the appropriate size and location, at reasonable costs. It is challenging for suppliers to find suitable sites, which are near motorways and the strategic road network, which have enough space for large vehicles, including turning circles

The need for public sector intervention to kickstart demand by investing in infrastructure and interventions that better enable and encourage operators to change or convert their fleet, was very clear. Overall, their findings suggest that a regional public sector organisation working in partnership with Local Authorities is well placed to define and implement a consistent approach regarding alternative fuels across the region.

<https://committees.parliament.uk/writtenevidence/22800/pdf/>

Our strategy and approach

We have considered the energy infrastructure implications of many of the issues raised over the last 12 months and identified some key threads



We have set out the IZEV strategy
under the following headings

Why this strategy is needed

The national context

Local and regional
opportunities

The impact of
innovation in
Future Mobility

The impact of
innovation in
Smart local
energy systems

Market
interventions
that are needed

Partnership
working
solutions

Our IZEV strategy vision

The West Midlands will draw on its **special circumstances** to ensure that it can provide **sufficient and appropriate energy infrastructure** to allow the **cost effective** and **fair transition** to zero emission transport options by 2041.

Consultation Question:

Do you agree with this vision?

How do we ensure cost effectiveness and equity?

There are a number of opportunities presented by the National Context

- The transition to zero emission vehicles is being driven nationally
- Market regulation and Government incentivisation is taking place to which the industry is responding
- However, barriers are also being identified, including the provision of infrastructure to enable the transition, with a lack of charging points, network capacity and alternative fuelling stations, which Government is looking to local areas to address
- Funding is being made available to address some of these barriers and the West Midlands needs to position to **secure this funding**
- The development of a new industry and the digitalisation of mobility as a whole, offers significant opportunities for **economic growth**

Relevant policy documents for reference:

Clean Growth Strategy:

<https://www.gov.uk/government/publications/clean-growth-strategy>

Build Back Better: Our Plan for Growth

<https://www.gov.uk/government/publications/build-back-better-our-plan-for-growth>

The Ten Point Plan for a Green Industrial Revolution (Point 4: Accelerating the shift to zero emission vehicles and Point 6: Driving the growth of low carbon hydrogen)

<https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution/title>

Decarbonising Transport: A Better, Greener Britain

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1002285/decarbonising-transport-a-better-greener-britain.pdf

Energy White Paper

<https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future>

National Infrastructure Strategy

<https://www.gov.uk/government/publications/national-infrastructure-strategy>

Reducing emissions from road transport: Road to Zero Strategy

<https://www.gov.uk/government/publications/reducing-emissions-from-road-transport-road-to-zero-strategy>

Government vision for the rapid chargepoint network in England

<https://www.gov.uk/government/publications/government-vision-for-the-rapid-chargepoint-network-in-england>

Digital, data and technology strategy: 2021-2024

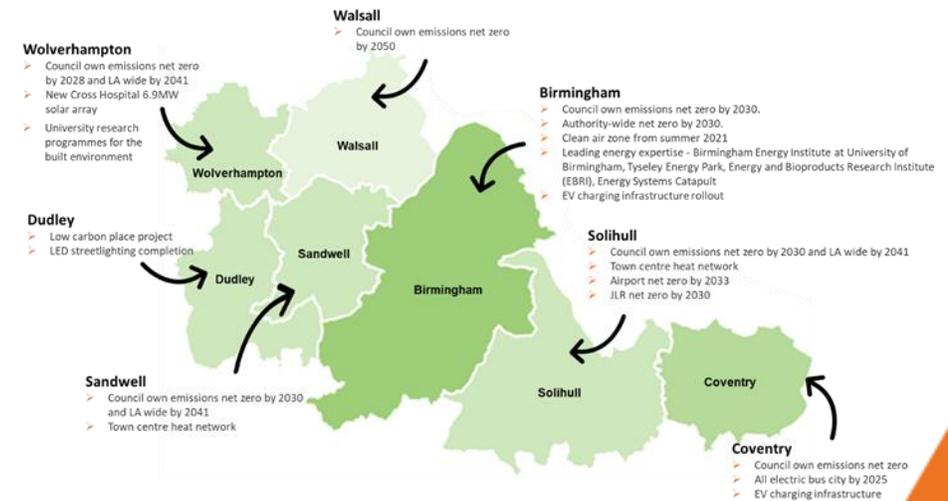
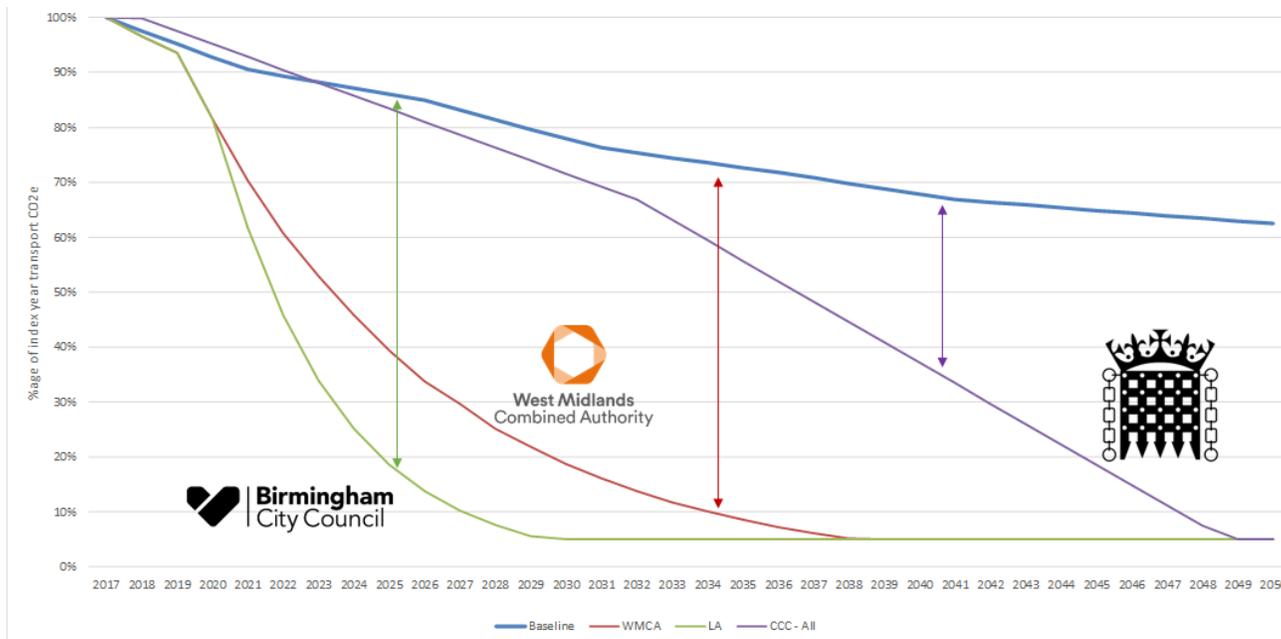
<https://www.gov.uk/government/publications/digital-data-and-technology-strategy-2021-to-2024>

We also recognise that we must be proactive to achieve local targets

Timing

The region has set a target of achieving net zero by 2041 and some local authorities within the region, including Birmingham, have aspirations to move even faster. We must therefore take action locally, as if not, the national trajectory shows that we will fail to achieve these goals.

Comparison of emission trajectories against targets (transport)



Source: #WM2041

Source: Atkins analysis of transport decarbonisation commissioned by TfWM 2020

Key opportunities presented by local and regional circumstances

Consultation Question:

Are there any other circumstances that are special to the West Midlands that should shape this strategy?

People and Place:

- The West Midlands' position at the heart of the UK puts it in a competitive location in terms of connectivity; at the centre of the UK's road and rail networks including the new HS2 line. 90% of the UK population is within 4 hours travel time of the region and traffic flows both round and through the region, which acts as a transport interchange due to its location.
- The region has a tradition of car use, being home to the automotive sector, with 70% of homes having driveways which is above the national average, an important component in enabling the switch to private electric vehicles. However, there is a need to look at significant behaviour change away from traditional travel behaviours, particularly with regards to private car use.
- The way we think about and therefore plan and provide for accessibility and mobility could change. The West Midlands already has a good public transport network and in particular the bus will continue to be a key focus of transport strategy in the region. Traditional bus services could also be supplemented with the provision of shared transport such as Demand Responsive Transport. Other emerging future mobility options such as micro mobility could start to play a critical role in meeting personal mobility needs. This growth can be stimulated by the public sector investment if the right market conditions are created.
- What is right for some areas will not be right for others, a range of factors including socio-economic, demographic and spatial factors influence the viability of transport and energy solutions. The way that the transport system is planned and managed also affects our ability to deliver inclusive growth. It is very important for the West Midlands that no one is left behind in the transition to net zero. TfWM are currently reviewing the future transport needs of the region through the development of the Local Transport Plan. This includes thinking beyond just mobility and considering all aspects of accessibility.
- The region has already been successful in recent years in securing public and private sector investment to support the decarbonisation of bus fleets and the wider transport system which provides a strong foundation.
- The West Midlands, as a landlocked region and will remain a net importer of energy, meaning that opportunities to manage when we need to draw down energy from the grid through energy storage and demand management will be hugely important to the region and could offer significant economic growth potential.

Key opportunities presented by local and regional circumstances

Conclusions:

- The region should consider its role within the national, as well as the local context, which presents opportunities to plan for infrastructure to support the national market that could then help stimulate the local market
- The energy needed to shift public transport to net zero is significant, so the investment that will be necessary by the public sector could also act as an enabler for the private sector and stimulate new business opportunities for shared net zero transport services in the region
- The opportunity presented by the potential for vehicle to grid services, energy storage and demand management could be of significant value to the West Midlands as a net importer of energy

Innovation context: Future Mobility

Transport is constantly changing and new services are continually emerging. There is a huge amount of innovation taking place in the transport sector to enable cleaner, more sustainable, more accessible transport options, which will impact upon the energy infrastructure needs of the region.

This includes:

- Mobility as a Service products and services to reduce demand for private car journeys
- On demand, door to door transport services
- Strategic and local public charging/green fuel infrastructure to enable transition to cleaner private vehicles and public transport fleets
- Development of a Mobility Hub network to provide more sustainable transport options for local communities
- A West Midlands wide approach to the development of parcel lockers in communities, to offset rapid growth of home delivery mileage

The inherent challenge is:

“A lack of understanding of anticipated energy demand; how that will manifest spatially, and the ability and preparedness of energy infrastructure providers to ensure that the energy system can respond effectively.”

Innovation context: Future Mobility

Conclusions:

- This strategy must exist as a live document, continually updated as transport plans evolve
- New mobility services should be supported by the significant investment by the public sector into new infrastructure
- The development of mobility hubs offers an opportunity to provide multiple services from a single energy infrastructure investment

Innovation context: Smart Local Energy Systems

Siloes in energy infrastructure are beginning to be broken, as the benefits of digitalisation and integration mean the systems can be managed in a new, more efficient way.

- In a local context, decarbonisation requires planning and delivery across vectors including energy systems, transport systems and wider spatial planning, including housing provision
- These systems are currently managed in isolation, with limited consultation across vectors, leading to sub-optimal infrastructure planning. For example, because there are clear plans in place nationally to decarbonise electricity, electrification is currently perceived as the lowest regrets option, which will remain the case until a clear process for the decarbonisation of gas and the associated costs of this are set out. The result is that the widespread electrification of transport and heating systems is placing significant demands on the electrical network and grid
- It is now recognised that the impacts of this could be mitigated by better data and better planning locally
- A Smart Local Energy System, such as those being developed in the West Midlands under the Prospering from the Energy Revolution (PfER) programme sponsored by Innovate UK, would allow these systems to be overlaid and considered together, leading to reduced cost of infrastructure, whilst also minimising disruption, which is why this is something that the region is championing.

Innovation context: Smart Local Energy Systems

Conclusions:

The potential energy systems opportunities afforded by the transition to zero emission vehicles could be significant for the West Midlands. These include:

- Public sector investment in new, large energy network connections could offer opportunities for shared connections that could stimulate and enable new zero emission vehicle services to be established
- The West Midlands, as a net importer of energy, will require myriad of small scale distributed assets in order to increase system efficiency and reduce overall energy costs, which if planned effectively, transport could be a part of
- Vehicle to Grid deployment could play a role in energy system balancing in the future. The scale of this opportunity should be further explored, as the technology develops.

Market interventions

There are some aspects of the current market which are not supporting the decarbonisation transition and it is here that the public sector can take action nationally and / or locally to make a real difference. However, the market is changing so rapidly that it is important to invest any public funds effectively to ensure they are not wasted, so a clear case for investment will be needed.

For example, with regards to electrification:

- OZEV has identified the lack of charging infrastructure as a barrier to people switching to electric vehicles but the market will not invest in the provision of widespread charging infrastructure until they are confident that there will be sufficient demand. [Public sector grants](#) are being made available to address this issue.
- The current charging regime for electricity grid connections which requires the next in the queue to pay for grid infrastructure upgrades is a clear market failure in the context of decarbonisation. This may be addressed by the Charging Review or may require consideration of how the public sector can intervene to spread costs more equitably and invest ahead of need.

Collaboration and partnership working is vital

- It is recognised that infrastructure to support transport decarbonisation is multi-faceted and that the power and influence to affect change sits with different actors at a range of different levels.
- The key purpose of this strategy is to pull together and support the actors that can collectively bring about the necessary investments required.

Consultation Question:

Which bodies do you think should own the actions identified in this strategy and why?

“Local Authorities are leading on the delivery of on-street charging solutions because:

- Powers to affect change to roadways sit at this level
- Knowledge of local requirements
- National funding to expedite scheme is therefore also targeted at this group
- Electrical demands of this type of charging tend to be much lower and therefore have less requirement for strategic planning in order to accommodate the infrastructure.”

TfWM ULEV Officers Working Group

Assumptions underpinning this strategy



Energy

- Decarbonisation of the electricity grid will be driven nationally and achieved between 2040 and 2050
- Hydrogen supply will require on-site renewable energy generation in order to ensure that it is a decarbonised option
- The national pace of change being driven through policy and regulation is insufficient to enable ambitions set locally.



Future Mobility

- TfWM will develop a Local Transport Plan with local authorities and partners which will set out how through a mix of AVOID/SHIFT/IMPROVE options the transport system can be decarbonised in the fastest possible time.
- The private sector will choose the technology pathway that is right for them, but smaller operators may need to join up with larger ones to get economies of scale and/or access public infrastructure
- The lack of energy infrastructure is a perceived barrier to the uptake of electric vehicles.



Smart Local Area Planning

- Smart local energy systems would provide value and enable more integrated energy and transport planning and delivery.
- It would be more cost effective to make one large upgrade to an electricity substation than lots of smaller upgrades.



Partnership

- Most levers to act upon the climate emergency sit at Local Authority level, but these remain fairly limited. Some actions may be usefully undertaken at Combined Authority level and others at a pan regional or national level.
- Mass roll out of new charging capacity sits comfortably at Local Authority Level, although its currently really hard for LAs to find cost effective sites due to lack of transparency on hyper-localised grid capacity
- LEPS could be in a good position to provide engagement with the private sector with a focus on economic growth (subject to the LEP review)

Principles underpinning this strategy

1. That the transition to zero emission vehicles in the West Midlands should be fair and equitable

WMCA core principles & #WM2041 just transition statement

2. Innovation will continue and industry will deliver technological advancements

Strategic Economic Plan (SEP)

3. The West Midlands development plans and resulting transport strategy will shape/ inform our approach to delivery

Local Transport Plan (LTP)

4. We need to move with urgency on 'least regrets' decarbonisation options

#WM2041

5. Local area requirements can stimulate innovative multi-vector solutions

Regional Energy Strategy

6. Effective partnership working is key to delivery

WMCA core principles

Our Strategy

The key components of our strategy are to:

- Bridge the gap between the parties **planning infrastructure** in the region to ensure they are using the same information to inform each of their planning and investment processes
- Utilise the **public sector's planned investment in transport services** to provide infrastructure that will act as an enabler for the private sector and stimulate new business opportunities in the region through the provision of charging facilities for mobility hubs and transport interchanges
- Use our geographic **position** to plan and deliver infrastructure to support the national market which will help to stimulate the local market, including providing refuelling options for freight vehicles

Our approach

To understand the factors that will drive and shape the demand for zero emission vehicle infrastructure across the region



Through collaboration with partners, to identify the key issues and opportunities where collaborative action can add value



To develop an action plan



To show how integrated planning and targeted investment by the public sector can stimulate and enable change, and support the achievement of better outcomes

Opportunities for action

Planning infrastructure

Public sector investment

Positioning



1. Planning infrastructure

These actions are centred around continual improvement of communication between those who make energy infrastructure investments and those who plan the region's transport infrastructure, to support the achievement of net zero objectives.

1: Planning Infrastructure

Aim: To bridge the gap between the parties **planning infrastructure** in the region to ensure they are using the same information to inform each of their planning and investment processes

A1. Establish joint oversight of net zero infrastructure planning across the region to facilitate collaboration and effective planning between spatial planning, transport planning and energy system planning by:

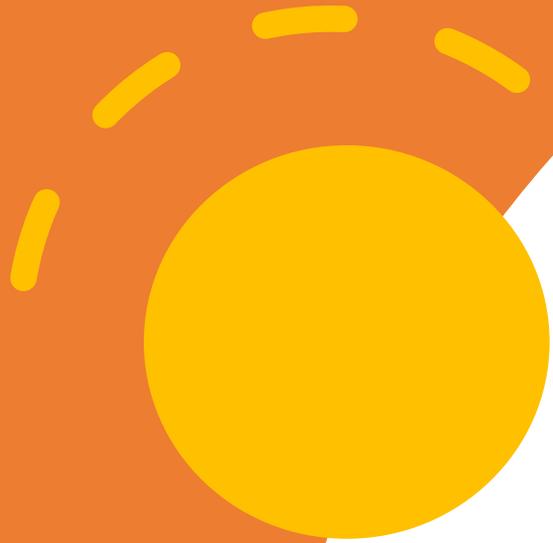
- Including zero emission vehicle infrastructure planning and delivery reporting into the new Net Zero Infrastructure Delivery Board's remit
- Supporting our regional Distribution Network Operators and Local Authorities to achieve deeper and more effective engagement to inform business planning, spatial planning and investment planning processes
- Supporting transport planners to engage with energy infrastructure planning process to ensure their needs are considered

A2. Enable data and modelling sharing through open data protocols across transport, energy and other demands

A3. Advising on the energy impacts of spatial planning policy



Consultation Question:
What other actions should be included here and who should lead on them?



2. Public sector investment

These actions use the public sector investment being made into transport decarbonisation, as a driver to explore opportunities to stimulate wider investment to support the net zero transition, through targeted business case development.

2: Public sector investment

B. To explore the business case benefits of public sector sponsorship of grid connections to facilitate and future proof the high power charging requirements of multiple transport modes on one site.

B1. Assess the feasibility of co-location of transport charging and refuelling infrastructure

B2. Build upon existing evidence to identify sites where multi-modal infrastructure, such a mobility hub or local transport interchanges, would be advantageous for both the energy and transport systems

B3. Work with Local Authorities to understand and develop a range of power provision options such as private wires were applicable

B4. Analyse opportunities where transport assets can become energy assets by providing storage and flexibility services through V2G

B5. Support West Midlands Local Authorities to innovate and access the forthcoming Local Electric Vehicle Infrastructure Fund to deliver local solutions.



Consultation Question:
What other actions should be included here and who should lead on them?

2: Public sector investment

C. To explore the business case benefits of co-locating onsite generation and storage with energy and transport parks, in order to mitigate otherwise high connection costs for high power demands.

C1. Secure funding to carry out local area energy planning in order to assess the impact on the network of transport developments, to integrate with competing and complimentary demands and to optimise the plans across both energy and transport requirements.

C2. Work with Local Planning Authorities to integrate the outcomes of the local area energy planning into Local Spatial Plans, for example in terms of future land allocation for infrastructure provision

C3. Continue to validate and advocate the local approaches to this challenge taken by innovators, including Tyseley Energy Park in Birmingham and the Clean Energy and Transport Hub in Coventry.

C4. Support the replication of these local approaches to other sites across the West Midlands, to form a comprehensive network of charging and refuelling, to give confidence to the private sector on the availability of assets.



Consultation Question:
What other actions should be included here and who should lead on them?

2: Public sector investment

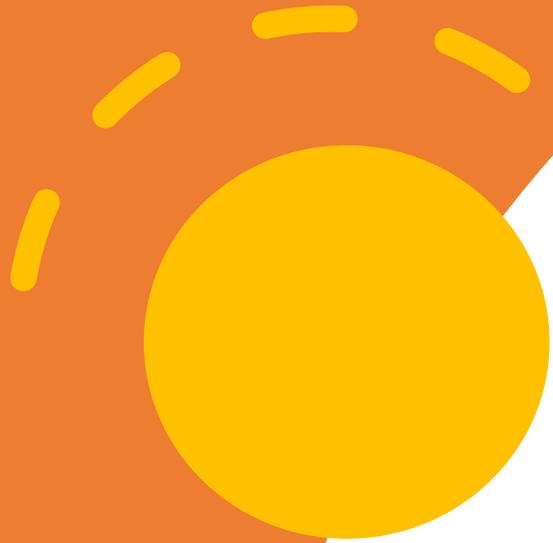
D. To support Local Authorities to demonstrate a leadership position in decarbonising their own fleet to trigger or help unlock investment in corresponding private sector fleets

D1. Work in partnership with Local Authorities and the Midlands Energy Hub to ensure local authorities are able to shift their fleets to zero emission fleets, for example including by exploring the business case for smart charging and sharing the costs of network connections or infrastructure development

D2. Support Local Authorities to work with Distribution Network Operators and other local stakeholders to optimise the value of necessary network upgrades by considering the potential for adjacent schemes and their energy needs. Site Energy Feasibility Studies should consider demand and generation opportunities outside of the immediate site boundaries such as the opportunity to take low carbon electricity via a private wire from a local PV system or Energy from Waste plant. The feasibility study should consider demand and generation profiles in order to design a fully optimised local energy system.



Consultation Question:
What other actions should be included here and who should lead on them?



3. Positioning

These actions harness the value of the geographic position of the West Midlands, which presents opportunities to plan for infrastructure to support the national market that could then help to stimulate the local market.

3: Capitalising on our position

E. To ensure the delivery of ultra-rapid charge transit stations to encourage uptake of electric vehicles, harnessing funding for charging provision on the strategic road network which also provides ultra-rapid services for local citizens and fleets

E1. To continue to refine the commercial model for the above to align with funding and finance options

E2. To seek to government seed funding for the development of these transit stations

E3. To look to maximise the value of transit stations in order to future proof them against future technology pathways



Consultation Question:
What other actions should be included here and who should lead on them?

3: Capitalising on our position

F. To harness opportunities to enhance the provision of charging infrastructure presented by key events in the region such as the Commonwealth Games.

F1. Work with host local authorities and event organisers to minimise the carbon impact of the Commonwealth Games transportation and ensure a valuable infrastructure legacy for the region.



Consultation Question:

What other actions should be included here and who should lead on them?

3: Capitalising on our position

G. To ensure that the West Midlands does not preclude alternative fuel solutions for transport by considering technology pathway agnostic infrastructure investments

G1. Take the outcomes of the Governments upcoming hydrogen strategy and look for opportunities to bring forward investments to support this sector appropriate to the West Midlands

G2. Support demonstrator projects which explore the feasibility of pan-regional charging and refuelling options for a range of vehicles

G3. Recognise the wider national challenges of decarbonising heavy goods and other large vehicles and consider what infrastructure might be necessary in the region to support the use of alternative fuels to meet this challenge

G4. Continue to work with partners on understanding the enablers and barriers of a new hydrogen and other alternative fuel economy and how the available resource could be best utilised



Consultation Question:
What other actions should be included here and who should lead on them?

Summary of actions

Partnership working will be key to the delivery of the IZEV strategy. There are important roles for those in the transport and energy sectors and at all geographic levels. The main aim of this strategy is to facilitate this collaboration.

Summary of actions

THEME	REF	Summary	Owner and key partners	By When
1. Planning infrastructure	A1	Develop and test approach to integrated planning across energy and transport through Net Zero Infrastructure Delivery Board collaboration	Energy Capital, with TfWM	Establish NZIDB summer 2021
	A2	Establish open data protocols and shared data platforms across energy and transport planning	OfGEM, Western Power Distribution, Cadent and TfWM with Energy Capital, WMCA	Through the NZIDB during 2021
	A3	Advise on energy impact of spatial planning policy	Midlands Energy Hub, MHCLG, BEIS and Energy Capital, WMCA	Ongoing as spatial plans are updated
2. Public Sector Investment	B1	Feasibility of co-location of charging and refuelling facilities	Local Authority Partners with Energy Capital, WMCA	March 2022
	B2	Site identification with co-location opportunities	Local Authority Partners with Energy Capital, WMCA	March 2022
	B3	Power Provision Options Appraisal	Energy Capital, WMCA	Dependant of co-location opportunities identified
	B4	Identify V2G and other energy system support opportunities	Innovation project with Energy Capital, WMCA	Dependant of co-location opportunities identified
	B5	Lead or support LA partners to bid for funding through OZEV LEVI fund	Energy Capital, WMCA with Investment Team	Dependant of co-location opportunities identified

Summary of actions

THEME	REF	Summary	Owner and key partners	By When
2. Public Sector Investment	C1	Secure funding to carry out Local Area Energy Plans (LAEP)	Energy Capital, WMCA with Local Authorities	December 2021
	C2	Align LAEP with Spatial Plan	LA partners with Energy Capital, WMCA, Housing and Regeneration team & Midlands Energy Hub	As spatial plans are refreshed
	C3	Validate and advocate demonstrator approaches taken at Tyseley Energy Park (TEP) and Ansty Clean Energy Hub	Energy Capital, WMCA with TEP and Coventry CC	March 2022
	C4	Look to replicate these approaches at other sites in the West Midlands	LA partners with Energy Capital, WMCA	March 2023
	D1	Support LA partners to decarbonise their fleets by helping to reduce the cost of energy infrastructure	LA partners with Energy Capital, WMCA & Midlands Energy Hub support	Various due to different climate commitments
	D2	Support LA partners to make best value of their energy assets by assessing nearby energy demands and generation opportunities	LA partners with Energy Capital, WMCA & Midlands Energy Hub	Various due to different climate commitments

Summary of actions

THEME	REF	Summary	Owner and key partners	By When
3. Positioning	E1	Continue to refine the commercial model to demonstrate the viability of the spine network of transit stations	Investment team, WMCA, supported by Energy Capital	September 2021
	E2	Seek to influence government to attract funding	Investment team, WMCA supported by Energy Capital	September 2021
	E3	Future proof transit station development	Investment team, WMCA, supported by Energy Capital	March 2022
	F1	Work with Commonwealth Games and host LAs to consider low carbon transport and legacy	TfWM, Energy Capital, WMCA with CWG committee, DCMS and OZEV	July 2022
	G1	Consider the outcomes of the BEIS Hydrogen Strategy when released this year	TfWM supported by Energy Capital, WMCA	September 2021
	G2	Support demonstrator projects which look to show the feasibility of alternative fuel systems	TfWM supported by Energy Capital, WMCA	As opportunities arise
	G3	Recognise the specific challenge of decarbonisation of Heavy Good Vehicles (HGV) and explore infrastructure to support	TfWM supported by Energy Capital, WMCA	March 2022
	G4	Continue to work with partners to consider enablers and barriers of alternative fuel systems to assess future viability	TfWM supported by Energy Capital, WMCA	Ongoing

Appendix: Consultation Questions

Consultation Questions

1. How strongly do you agree with this vision (1-10) where 10 is strongly agree and 1 is strongly disagree?
2. How do you see this strategy dovetailing or linking with other strategies and plans in the region?
3. What are the key factors in ensuring cost effectiveness and equity through this transition?
4. How far do you think the West Midlands should be planning for and investing in infrastructure to enable transport decarbonisation, or how much should we wait and follow the national roll out? (1-10) where 1 is self-determine and 10 is fully follow the national roll out
5. What powers or levers should the West Midlands public sector be drawing on to set its own decarbonisation pathway? What additional powers or abilities would enhance our ability to meet our transport decarbonisation aims?
6. What insight could you provide from local initiatives and plans that should be reflected in this strategy?
7. How much do you believe that accessing cost effective electrical grid capacity is, or will be, a barrier to delivering electric charging infrastructure? (1-10)
8. Can you give any examples of projects where grid capacity was an issue? What was done to mitigate this?
9. Do you see a strong role for hydrogen and alternative fuels in the West Midlands transport system (1-10) where 10 is strong role and 1 is no role at all
10. Please could you outline where you see the strongest use case for hydrogen and alternative fuels
11. Are there any other circumstances that are special to the West Midlands that should shape this strategy? Please give details.
12. Do you agree with the principles underpinning this strategy?
13. Which bodies do you think should own the actions identified in this strategy and why?
14. What other actions should be included here and who should lead on them?