

Risk no.	Category	Risk in the 2021-2032 timeframe	Key impacts of risk	How strategy accounts for risk	Ownership	Likelihood	Impact	Overall risk
1	EVCP & EV market	Scalable on-street solution is slow to emerge meaning on-street charging remains expensive / challenging to rollout/lack of available suitable sites.	<ul style="list-style-type: none"> Significant on-street deployment delayed On-street deployment expensive where it is still installed Wide scale on-street deployment not possible Not maximising accessibility 	<ul style="list-style-type: none"> Considers both on-street and rapid hub approaches to residential charging, and recommends rapid EVCPs deployed where possible Options for destination / rapid en-route charging highlighted, which would provide charging for those in areas waiting for on-street residential deployment Options for innovative charge point technology where accessibility is challenging. 	BCC/ESB			
2	EVCP & EV market	EV uptake is slower than expected	<ul style="list-style-type: none"> Reduced charging demand Higher investment may be needed to stimulate market (depending on reason for slow uptake) 	<ul style="list-style-type: none"> Uptake accounts for short term slow down due to market uptake. Aggregating demand across user groups maximises EV uptake that does take place 	N/A			

3	EVCP & EV market	Plug-in hybrids sell better than expected compared to fully electric vehicles	<ul style="list-style-type: none"> Reduced rapid EVCP need 	<ul style="list-style-type: none"> Strategy considers multiple charging technology futures, including all on-street, all rapid, and mixed technology 	N/A			
4	EVCP & EV market	Plug & Charge technology is slow to develop and will not become a standard solution by 2030	<ul style="list-style-type: none"> PAYG must be offered for longer than planned 	<ul style="list-style-type: none"> Charging technology roadmap advises ensuring PAYG offered until Plug & Charge available 	N/A			
5	Deployment	There is only a small volume of suitable publicly owned sites for rapid hub development	<ul style="list-style-type: none"> More on-street rapid deployment will be needed Increasingly reliant on private site rapid hubs 	<ul style="list-style-type: none"> Strategy highlights forecourts that would make attractive hub sites as well as private car parks that could be leveraged 	ESB			
6	Deployment	There is resistance to using Kerb-side space for EV charging	<ul style="list-style-type: none"> Limits residential charging deployment potential 	<ul style="list-style-type: none"> It is expected that in next few years, new charging technologies with limited space impact will proliferate 	BCC			
7	Grid Connection	Grid Connection costs are generally unknown from site to site. This can prohibit large deployment of chargers, making it commercially unviable.	<ul style="list-style-type: none"> Less diverse charging network Limits the large hub sites across the city. 	<ul style="list-style-type: none"> Strategy favours rapid charging where it is viable On-street deployment assumed to shift to smart enabled charging hubs that will require lower grid connection per charger 	ESB			

8	Mobility trends	Centre city will start to become pedestrianised as part of a wider shift to sustainable forms of transport, and in order to reduce air pollution in the city	<ul style="list-style-type: none"> Stranded assets Wasted investment 	<ul style="list-style-type: none"> Deployment considers most sustainable user groups to future proof (e.g. taxi, car clubs) where possible Rapid hubs recommended as areas are most likely to be pedestrianised 	BCC			
9	Mobility trends	There is a shift away from private car ownership as part of a wider shift to a more sustainable transport system	<ul style="list-style-type: none"> Reduced charging demand Underutilised / stranded assets Worse return on investment 	<ul style="list-style-type: none"> Short-medium term deployment focussed on areas with multiple user groups, not just private cars 	N/A			
10	Mobility trends	Public car parks may start to close in city centre, to aid the trend away from private car use.	<ul style="list-style-type: none"> Stranded assets Wasted investment 	<ul style="list-style-type: none"> Recommended that private sector encouraged to deploy rapid charging on their sites in city centre Identifies forecourt sites that could be leveraged 	BCC			
11	Mobility trends	There is less commuting as a whole as more people choose to work from home (due to Covid) and within this there is a reduction in car commuting	<ul style="list-style-type: none"> Reduced charging demand in city centres Underutilised assets 	<ul style="list-style-type: none"> Multiple user groups available for city centre EVCPS, not just commuters 	N/A			

12	Mobility trends	There is decrease in commuting by train, tram and bus due to COVID-19, leading to an increase in car commuting as people switch modes	<ul style="list-style-type: none"> Increased charging demand More EVCP investment needed 	<ul style="list-style-type: none"> Residential deployment to be targeted at priority areas Includes scenario which considers very ambitious uptake 	N/A			
13	Mobility trends	The car market continues to be constrained due to the supply of cars and COVID-19.	<ul style="list-style-type: none"> Reduced charging demand while market constrained Slower investment needed 	<ul style="list-style-type: none"> Stock size of cars must be continuously measured on an annual basis to confirm EVCP deployment strategy. 	N/A			
14	Policy & funding	There is less public funding available for EV infrastructure than expected over the coming decade	<ul style="list-style-type: none"> Lower EVCP volumes possible Funding must be more targeted – high quality sites, multiple user groups etc. 	<ul style="list-style-type: none"> Key focus of strategy is on deploying well utilised rapid hubs, which represent best value for money Coordinated hub approach is the goal for both on-street + rapid, which helps reduce costs 	N/A			
15	Modal Shift	Modal shift leads to reduced EV uptake as travel behaviour moves to more sustainable forms of transport (e.g., walking, cycling, public	<ul style="list-style-type: none"> Reduced charging demand Underutilised / stranded assets 	<ul style="list-style-type: none"> Strategy accounts for modal shift; flexibility in current deployment plans is a key aspect. Shared transport and its 	N/A			

		transport.		electrification must be supported.				
17	Charging Types	Providing an insufficient supply of EVCPs to those without access to home charging .	<ul style="list-style-type: none"> Reduced uptake of EVs 	<ul style="list-style-type: none"> Strategy focuses on High Power Charging and charging hubs to account for those in need of public charging infrastructure. Evaluation and roll out of innovative charge point technologies where appropriate. 	ESB			
18	Modal shift and mobility scheme	Strategy promotes and encourages private (electric) car ownership .	<ul style="list-style-type: none"> Modal shift towards sustainable travel is reduced. 	<ul style="list-style-type: none"> Prioritisation of rapid 'charge and go' chargers over slow, on-street chargers to encourage modal shift. The strategy will support other schemes that aim to reduce vehicle mileage and energy consumption. 	BCC			

19	Recommended infrastructure	Areas of high EVCP demand are not specifically targeted to the extent required.	<ul style="list-style-type: none"> • Less diverse charging network • Potential of underutilised assets and wasted investment. 	<ul style="list-style-type: none"> • Priority areas for EV charge point deployment have been identified, including taxi demand, residents without off-street parking, rapid on-route charging and destination charging. • Plans for deployment in these areas have been developed to target key customers. 	BCC / ESB			
20	Charging Delivery Roadmap	The Charging Delivery Roadmap is not achievable within the given timeline (e.g., due to project delays, reduced EV uptake).	<ul style="list-style-type: none"> • Delays to EVCP deployment rollout • Reduced uptake of EVs 	<ul style="list-style-type: none"> • Project objectives have been broken down into high-level, feasible milestones from 2020 through to 2030. • Strategy recognises the need to be adaptable in driving the EV transition and to achieving the project objectives. • The EV stock modelling and take-up growth will be monitored regularly. 	BCC / ESB			
21	Model overview	The stock modelling underestimates , or conversely, overestimates the expected EV uptake from 2020	<ul style="list-style-type: none"> • Not enough investment or wasted investment • Too few or too many EVCPs to 	<ul style="list-style-type: none"> • Detailed stock modelling was carried out to project the number of EVs registered in Birmingham over the next decade. 	BCC/ESB			

		through to 2030	match demand	<ul style="list-style-type: none"> • A number of variables were used to calculate the stock model as accurately as possible. • Strategy account for the need to be adaptable in its approach to reflect current market needs. 				
22	EVCP projections	Calculated EVCP projections for 2030 do not reflect the true market state at that time.	<ul style="list-style-type: none"> • Reassessment of EVCP demand required. 	<ul style="list-style-type: none"> • Charging behaviour is assigned based on findings from real-world EV charging behaviour trials. • Calculated EVCP projections follow a similar pattern of EV uptake, as would be expected. 	BCC/ESB			