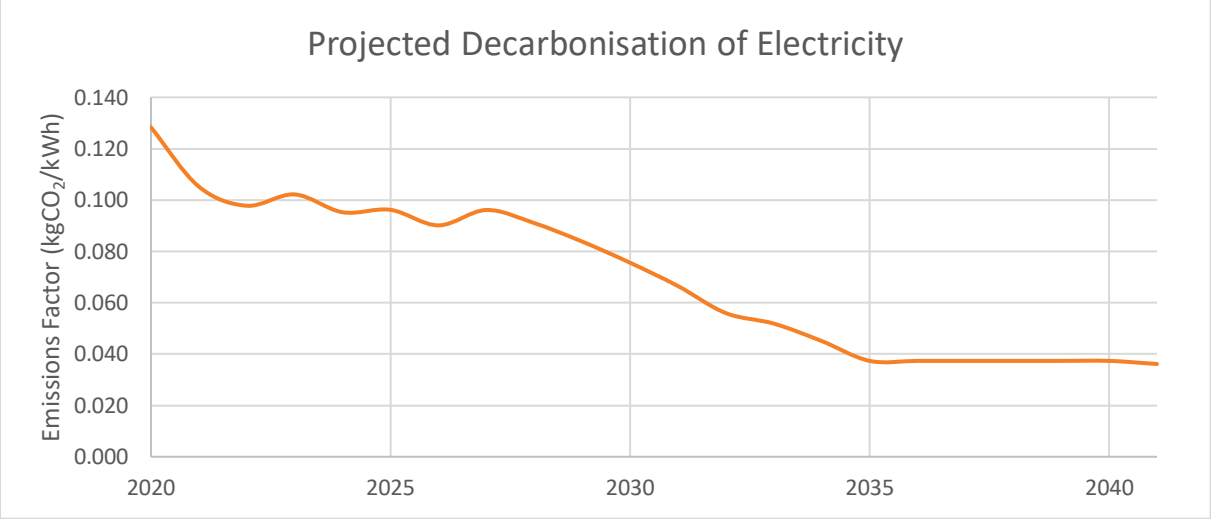
APPENDIX D – ASSUMPTIONS UNDER BUSINESS AS USUAL

After the baseline and targets were established, the next step was to consider where policies, plans and trends would take us, if no other action was taken; the Business-As-Usual Scenario. These actions already represent a significant step change from the way things have happened in the past and would require continued effort in order to bring to fruition. The main factors are explained below:

Decarbonisation of Electricity

The modelling includes the projected decarbonisation of mains electricity in the UK in the years to 2041. There are a number of data sources available for this that show a similar trajectory. The most recent release by the Department for Business, Energy & Industrial Strategy (BEIS) in their 'Green Book'[1] has been utilised to model the reduction trajectory.

Figure 1 – Projected Decarbonisation of Electricity



Minimum Energy Efficiency Standards

The Minimum Energy Efficiency Standard (MEES) Regulations set a minimum energy efficiency level for domestic private rented properties. From 1st April 2018, phase one of the MEES regulations came into force; as a result of this, it is now deemed unlawful to let properties with an Energy Performance Certificate (EPC) rating below an 'E' rating. Whilst this does currently place an onus on the landlord there is a relatively low spending cap of £3,500 (inclusive of VAT) in place.

The government is consulting on regulations to enforce higher levels of energy efficiency. The proposals increase the minimum energy efficiency standards for privately rented properties to EPC Band C by 2030, while increasing the spending cap to £10,000.

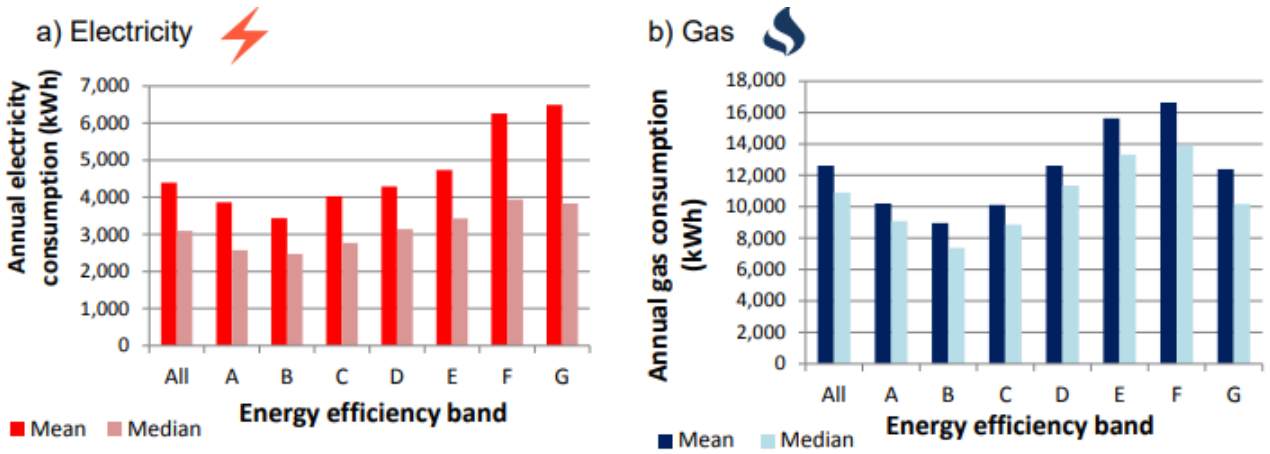
Non-domestic properties also require a minimum EPC rating of E by 2023, and there are proposals to make it B by 2030, but there is limited evidence of a correlation between rating and energy performance. The Better Buildings Partnership have explicitly stated in a recent report that EPCs are not an indicator of operation energy use and

[1] https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal

according to their data there is no correlation between EPC rating and how efficiently a building uses energy[2]. For this reason, a benefit has not been applied in the modelling.

Whilst it is generally true that a property with a better EPC rating would consume less energy (gas and electricity) and the government is pushing a 'fabric first' approach, this is not necessarily the case[3].

Figure 2 - Average annual consumption of domestic properties by energy efficiency band, 2015



Housing Growth

Each of the seven local authorities within the West Midlands Combined Authority are projecting growth in housing for the foreseeable future[4,5]. These studies indicate an objective assessment of needs totalling 10,875 dwellings per annum for at least the next decade. The assumption made within the modelling is that this need is fully met each year. The mix of housing types would broadly match the current typology across the region and meet minimum size guidance.

In the short term to 2025, the assumed energy consumption associated with these dwellings is current new build standards and utilising gas boilers to provide heating and hot water. Post-2025, it is assumed the 'Future Homes Standard' will be in place and that gas boilers for new build developments will not be allowed. Instead it has been assumed air-source heat pumps would nominally be installed, although the actual mix of technologies may include other types of heat pump in the short term and potentially other technologies further out in time.

[2] https://www.betterbuildingspartnership.co.uk/sites/default/files/media/attachment/Call%20for%20evidence%20-%20Energy%20Performance%20Certificates%20in%20Buildings.pdf
[3] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/669734/Domestic_Energy_Consumption_by_Energy_Efficiency_and_Environmental_Impact.pdf
[4] Greater Birmingham and Black Country Housing Market Area (GBBCHMA) Housing Need and Housing Land Supply Position Statement
[5] Coventry City Council Strategic Housing Land Availability Assessment (SHLAA)

Commercial Growth

Due to the uncertainty over the last year brought about by the COVID-19 pandemic, there is a degree of caution around the projections for commercial growth. The data used have been provided by the West Midlands Growth Company and are outlined below:

Table 1 – Commercial Growth Assumptions

SECTOR	CURRENT EMPLOYMENT	10-YEAR FORECAST	% CHANGE
Processional Services	200,000	14,823	7%
Business Services	250,000	17,521	7%
Health and Care	400,000	10,000	3%
Hospitality and Leisure	180,000	12,212	7%
Transport and Logistics	190,000	8,333	4%
Construction	160,000	3,939	2%
Education	260,000	2,500	1%
Public Sector	750,000	38,404	5%
Tech and digital	70,000	3,585	5%
Advanced Engineering	50000	4339	9%
Arts and Entertainment	70000	8127	12%
Manufacturing	230000	-27000	-12%
Wholesale and Retail	460000	-6000	-1%

Electrification / Hydrogen use in transport

There are several datasets projecting the change of fuels in surface transport. Although the data used here are focused on electrification, due to the timeline, this may involve hydrogen in the future.

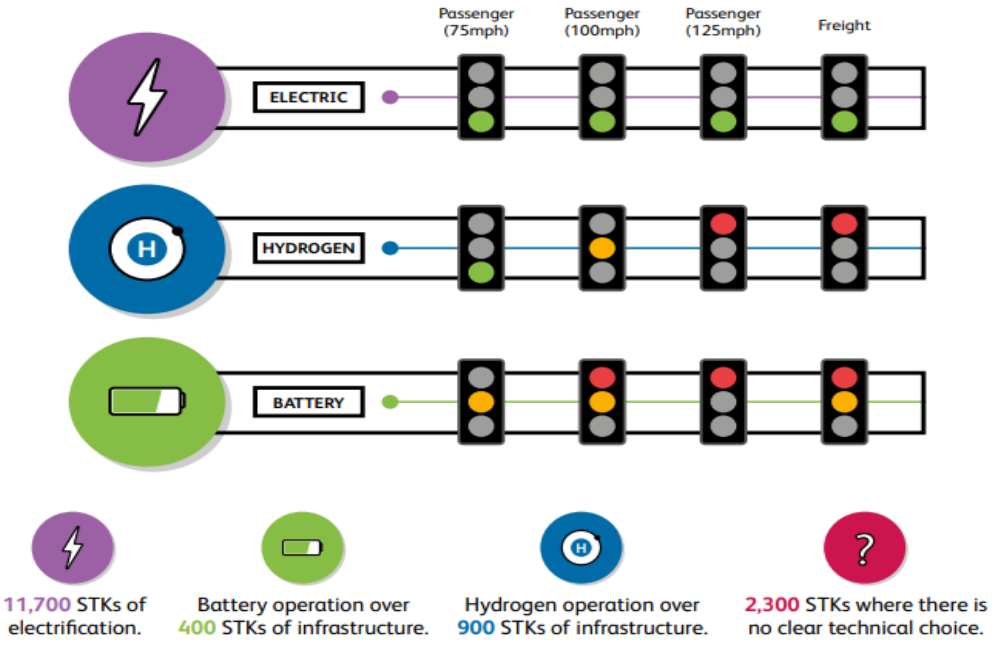
The Transport Analysis Guidance (TAG) data book was used to understand what a conservative outlook on how vehicle fuel use may change to 2041. the spreadsheet produced by the Department for Transport provides the proportion of cars, light goods vehicles (LGVs) and other vehicles mileage using petrol, diesel and electricity. Within this data book, vehicles are projected to electrify such that 34% of cars are powered by electricity by 2041 and 16% of LGVs. It also projects that other types of road vehicles will remain unchanged in fuel use.

More recently there has been announced a ban on the sale of new internal combustion engine cars by 2030. Again, a conservative approach has been considered for this with no change over the expected trajectory, and then the modelling of the effect of stock turnover from 2030.

Assuming electric cars are sold at the same rate as current new cars, we would see almost complete electrification by 2041. That being said, there may be changes in behaviour such as a surge in purchasing prior to the ban (consumers bringing forward purchasing) or stock dumping by retailers or a culture of maintaining ICE cars developing post 2030 which would mean stock turnover would take longer. It is also possible that prior to 2030 the sale of electric cars gradually increases as infrastructure improvements accelerate and acceptance of the technology becomes widespread.

During the stakeholder engagement process, the decarbonisation of railways was also explored. Whilst there are several competing technologies each with their own strengths and weaknesses, of the 15,400 single track kilometres (STK) of unelectrified rail network in Great Britain, the vast majority will be electrified; particularly so in the West Midlands

Figure 3 – Traction Decarbonisation Strategy



Council Decarbonisation

Five of the seven local authorities have committed to decarbonising their estate emissions. These are summarised below where data was available.

Table 2 – Local Authority Estate Emissions

LOCAL AUTHORITY	COUNCIL ESTATE TARGET	SCOPE 1 (TCO_2)	SCOPE 2 (TCO_2)
Birmingham	2030	7,595	24,093
Coventry	N/A	4,098	5,805
Dudley	N/A	-	-
Sandwell	2030	10,485	9,841
Solihull	2030	1,514	1,727
Walsall	2050	6,541	11,331
Wolverhampton	2028	7,649	8,043

Organisation Decarbonisation

Several large organisations have also committed to becoming zero carbon over the next 20 years. This includes Birmingham Airport and Jaguar Land Rover. The combined benefit of these commitments has been estimated.

Summary of Committed Projects

As part of the stakeholder engagement and literature review a list of 71 separate actions were identified across the seven local authorities and the West Midlands Combined Authority as a whole. These were filtered to understand a) projects which were sufficiently committed such that there was a decent probability of it going ahead, and b) were of significant size in terms of GHG reduction (i.e. represented at least 0.1% of GHG emissions of the West Midlands Combined Authority).

The result was a set of seven actions, five of which related to local authority estate emissions (as per the above table). The remaining actions include:

- Birmingham airport's commitment to be zero carbon by 2033
- Jaguar Land rover's commitment to be zero carbon by 2030
- The 'Virtual Forest' aims to plant 4 million trees in the wider West Midlands (1 for every person)
- Birmingham's Clean Air Zone