

EUA response to Greater Manchester's Plan for Homes, Jobs and the Environment

About us

The Energy and Utilities Alliance (EUA) provides a leading industry voice helping shape the future policy direction within the sector. Using its wealth of expertise and over 100 years of experience, it acts to further the best interests of its members and the wider community in working towards a sustainable, energy secure and efficient future. EUA has eight organisational divisions - Utility Networks (UN), the Heating and Hotwater Industry Council (HHIC), the Industrial & Commercial Energy Association (ICOM), the Hot Water Association (HWA), the Manufacturers' Association of Radiators and Convectors (MARC), the Natural Gas Vehicle Network (NGV Network), Manufacturers of Equipment for Heat Networks Association (MEHNA) and the British Energy Efficiency Federation (BEEF).

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Response

10. Is the approach that we have outlined in the plan reasonable?

EUA agree with many areas of the plan, such as creating jobs and investment, protecting green spaces, building houses, and the investment in transport to create a smart city.

Having said this, we would like to see more clarity around certain terms and what their implications might be. There tends to be a lot of terms and ideas used in the plan that are not unpacked, such as 'carbon neutral', 'zero carbon', or 'ending fossil fuels'. In order for

our members to be kept informed of any policies which might affect their business it is important that terms such as these are explained in as much detail as possible. For example, some of our members install boilers, and provide connections to the gas grid for vulnerable customers and if gas were to be phased out this would have a major impact on supply chains and jobs. This is why we are keen for GMCA to provide as much detail as possible to plans around heating.

A specific concern we have with the statement 'ending high carbon fossil fuels' is that we are not told which fossil fuels will be ended, or what is considered a fossil fuel. This could have big consequences for householders on and off the gas grid who may use gas or oil for their central heating, and may require them to purchase electric heating, with huge up-front costs. In addition to this there are grey areas around whether certain fuels are indeed 'fossil fuels', such as bio oils, hydrogen or biogas which could be used by many as their main source of heat, therefore it is important to give a wide, yet specific definition of fossil fuels.

Do you agree with the strategic objectives?

EUA broadly agrees with the strategic objectives, however we are concerned by the lack of clarity over the use of the term 'carbon neutrality'. For example, objective 7 states that GMCA will, 'promote carbon neutrality of new developments by 2028'. After contacting GMCA for some more detail on this, we are still unsure whether this might entail the banning of any current technology. It is pertinent that such a plan is open and specific in regard to the consequences of broad policy objectives so that business is able to consult with them and make plans. For example, if 'carbon neutrality' meant the end of the sale of gas boilers, installers must be given as much notice as possible as this would impact heavily on their livelihoods and retraining would be required.

Another term that is not expanded on in objective 7 is 'improve generation of renewable and low carbon energy'. We believe that this term should be unpacked and defined here,

so that business know exactly what is being proposed, and what is not. For example, is Hydrogen considered renewable and low carbon by the plan? These clarifications are hugely important as a gas grid is essential if the Government decide to embark on the Hydrogen route to heat decarbonisation, which we see as the best route to a low carbon future. This route would require injection of up to 20% Hydrogen to current gas grid as a first step, and then a full conversion to Hydrogen, and the switch to Hydrogen ready appliances. One of the main advantages to this decarbonisation pathway is that we could continue to use and modify our extensive gas grid, rather than decommissioning a valuable asset. A conversion of similar scale was carried out in the 1960's in the UK to natural gas, from town gas, providing an important case study of such a conversion.¹ Another fact that makes a conversion to Hydrogen feasible is that the gas networks are currently in the process of converting the pipes from metal pipes to plastic ones capable of carrying Hydrogen.²

Question 27 Do you agree with the proposed policy on a Sustainable and Integrated Transport Network? Agree / Mostly agree / Neither agree or disagree / Mostly disagree / Disagree What is the reason for your answer?

EUA agree that GMCA needs to reduce car dependency and that the transport plans are sensible. We also think that gas busses could make a positive contribution to improving air quality, as they produce no NOx emissions, thus improve air quality dramatically.³ Additionally, gas busses are faster to refuel than their electric counterparts, so more busses could be available, instead of taking them off the road for a long time to recharge. Gas powered busses would also be a cheaper alternative to electric powered busses, as the infrastructure is easier to convert, with the bonus that they do not put a strain on the electric grid, which would require reinforcements and extra power.

¹ <http://www.nationalgasmuseum.org.uk/gas-industry-chronology/>

² <https://utilityweek.co.uk/gas-mains-replacement-programme-the-story-so-far/>

³ https://www.fuelcellbuses.eu/sites/default/files/documents/CHIC_publication_final_0.pdf

One suggestion we believe could also make a positive contribution to GMCA's reduction in emissions is more out of town park and ride to encourage people to get the bus into town. This would reduce the need to try and legislate against cars with any politically hard charges against cars, which returned an 80% no vote in 2008.⁴

Question 29 Do you agree with the proposed policy on Carbon and Energy? Agree / Mostly agree / Neither agree or disagree / Mostly disagree / Disagree What is the reason for your answer? (page 77)

We find the policy on carbon and energy problematic because it is vague and does not clearly set out the implications, or details of the broad aims. Firstly, the term 'carbon neutral' is not explained, and no clear definition is provided. Secondly, 'reducing heat demand' in buildings is given as an action, yet there is little explanation of what this will entail. Reducing heat demand in buildings is clearly a desirable goal to have, but it is unclear that consumer behaviour is changing, as people are used to having their homes at a certain temperatures, and once a boiler is the most efficient model and some energy saving technologies have been installed, there is not much else one can do to reduce heat demand. For example, while information campaigns to reduce energy use may result in increased consumer knowledge, this does not always translate into real energy savings.⁵ Infrequent energy bills and energy reports mean that, in the majority of UK homes, domestic consumers have little way of knowing which of their everyday behaviours contributes most to their energy bills, or what the simplest changes are to make in order to bring their bills down.⁶ It would have been good to see some clear actions that could be taken to reduce heat demand, because without them, this action is meaningless, as there is no route to achieving it.

⁴ <https://www.theguardian.com/politics/2008/dec/12/congestioncharging-transport>

⁵ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/48123/2135-behaviour-change-and-energy-use.pdf

⁶ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/48123/2135-behaviour-change-and-energy-use.pdf

The next action we find troubling is 'moving away from carbon intensive gas as the primary source of heat', again because there is no explanation of the implications of this, or how this will become a reality. Presumably if gas is being 'moved away from', this inevitably means a shift to electric heating, however this will put people's energy prices up as currently electricity is more expensive than gas. (To buy one unit of mains gas (measured in kWh) you will pay about 4p / kWh. Conversely, one unit of electricity from the mains (also measure in kWh) will cost you about 15p/kWh).⁷

Recently, we saw what happened in Paris, when people were forced to pay more for energy, so we would urge GMCA to consider the implications of this. The upfront costs of electric heating are unaffordable for most people. Energy Saving Trust (EST) estimates that a standard gas boiler replacement will set you back on average £2,300.⁸ For homeowners not on gas mains, the cost of an air source or ground source heat pump by comparison is between £6000 – £8000 (air source, EST) or £10,000 – £18,000 (ground source, EST). EUA are also concerned that business has not been consulted about this shift away from gas, and because there is no clarity as to exactly what this will mean, business will not be able to make plans.

One more problem with the plan is around retrofitting. The plan argues that retrofitting the existing building stock presents a significant opportunity to meet the 2038 carbon neutrality target. We are concerned that this is another policy that sounds good, but has not been well thought out, or costed. A recent Dutch inspired project retrofitted homes in Nottingham, but at a cost of £90 thousand per house, therefore we would be interested to hear who is going to pay for this, and how many homes will be retrofitted, given the high costs.⁹ These costs would likely fall after wide spread uptake, but we cannot imagine them falling much below the £50 thousand mark.¹⁰ This fact leads us to believe that other routes

⁷ <https://www.thegreenage.co.uk/cheaper-heat-home-gas-electricity/>

⁸ <https://www.evergreenenergy.co.uk/heat-pumps/heat-pump-vs-boiler/>

⁹ <https://www.itv.com/news/2018-10-10/nationwide-scheme-of-deep-retrofits-needed-to-make-homes-zero-carbon-report/>

¹⁰ <https://www.evergreenenergy.co.uk/heat-pumps/heat-pump-vs-boiler/>

to heat decarbonisation may be cheaper and more convenient, such as a conversion to hydrogen, or injection of bio gas into the grid.

Finally, there is a sentence about promoting 'zero carbon' technologies for heat, but again, there is no detail or explanation as to what this means, or which technologies will be used. We believe that Hydrogen can be a zero carbon technology, which would be the best choice for future heat in homes, as a conversion to Hydrogen could be less costly for the consumer and cause less inconvenience and disruption than conversion to electric.¹¹ This is because the consumer after conversion would continue to heat their homes in the same manner, and their appliances could also continue to operate in the same way, if they are hydrogen ready. One advantage to this is people will not have to adapt to using a different heat source, as heat pumps operate at low temperatures all day and cannot be switched on and off.^{12 13}

Whereas, a Hydrogen ready boiler would work exactly the same way, only it would not be causing any emissions in the home.¹⁴ We are understanding that at some point a decision will have to be made on this issue, but the decision should be the least costly and the least disruptive to consumers. A 2016 KPMG report, 2050 Energy Scenarios, found that the cost of converting the UK to Hydrogen gas could be at least £150 billion cheaper than electrification.¹⁵ A proportion of Hydrogen produced in the future would inevitably be made with natural gas, and we would be keen to ascertain whether this will be banned, given the plans desire to 'phase out fossil fuels'. We believe that Hydrogen produced by natural gas can still be carbon neutral, because if CCS is used, the carbon released from the methane is captured and stored, with the only emission being water vapour when the hydrogen is burned.¹⁶

¹¹ https://www.hvpmag.co.uk/news/fullstory.php/aid/5633/Is_hydrogen_the_fuel_of_the_future_.html

¹² <https://www.evergreenenergy.co.uk/heat-pumps/heat-pump-vs-boiler/>

¹³ <https://www.thegreenage.co.uk/consider-insulating-home-installing-heat-pump/>

¹⁴ https://www.hvpmag.co.uk/news/fullstory.php/aid/5633/Is_hydrogen_the_fuel_of_the_future_.html

¹⁵ https://www.hvpmag.co.uk/news/fullstory.php/aid/5633/Is_hydrogen_the_fuel_of_the_future_.html

¹⁶ <https://www.gasterra.nl/en/news/hydrogen-and-ccs-a-smart-combination>

Question 30 Do you agree with the proposed policy on Heat and Energy Networks? Agree / Mostly agree / Neither agree or disagree / Mostly disagree / Disagree What is the reason for your answer

We believe heat networks can provide effective solutions for heat in some areas, however they will not be suitable in every area, therefore we think the GMCA policy is misguided. Heat networks should be delivered when they are the best solution for consumers, not as a uniform policy for all new developments of over 10 dwellings. Sometimes heat networks may not offer carbon savings, or lower bills and consumers must be at the heart of any heat policy. Heat networks do have many desirable attributes, but GMCA should carefully consider all the pros and cons for their usage against every case to ensure they are tailored to the development.

Question 31 Do you agree with the proposed policy on Resilience? Agree / Mostly agree / Neither agree or disagree / Mostly disagree / Disagree What is the reason for your answer?

EUA broadly agrees with the proposed policy on resilience, however as stated before we are concerned that the policy around retrofitting is not clear and has not been costed, or well thought out. We would be keen to see how much it will cost to retrofit each house, what exactly is meant by retrofitting, and how many homes will be retrofitted, given the costs are extremely high.

Question 33 Do you agree with the proposed policy on Clean Air?

We agree with the evidence outlined surrounding the harms of clean air and commend the drive to achieve WHO 'Breathe Life City status by 2030', by reducing PM emissions. Having said this, one area the consultation does not discuss here is HGV's. HGVs contribute 17 per

cent of surface access CO2 emissions, despite making up only 5 percent of road vehicles.¹⁷ This is a good reason to target HGVs with charges, and avoids the political problems of targeting cars and vans. Canvassing the views of 1,670 adults, the survey found that 58% believed the current levels of air pollution in the UK to be either harmful or very harmful to health, a figure that rose to 73% among Londoners. What's more, 65% of those polled said they would support legislation/government action to tackle the issue.¹⁸

Following from this, we believe it would be politically, and economically viable to target Diesel HGVs with charges to enter areas of the city, while exempting gas powered HGVs, we believe this would make a great impact on lowering NOx emissions. Such a charging scheme would encourage fleets to switch to lower emission alternatives, such as gas powered Lorries, which already are being used effectively by some companies.¹⁹ There has also been research suggesting that not only do charging zones reduce PM pollution, they do not do it at the expense of air quality outside the zone.²⁰ So, it is not just a question of older vehicles being moved elsewhere or driving longer distances to avoid the zones.²¹

The report from the Low Carbon Vehicle Partnership suggests that compared to a diesel Euro VI engine, a gas-powered equivalent reduced NOx emissions by 41 per cent (on average) over a variety of cycles. NO₂ emissions were down by 74 per cent, on the same like-for-like basis. Tail pipe carbon emissions were down, and on a well-to-tank basis, carbon dioxide savings are also significant. For gas vehicles using biomethane, the GHG savings are, to quote the report, "significant".²² This backs up evidence we have seen from a gas-filling station project in Leyland (just off the M6) used by Waitrose, which has seen GHG reductions using gas-powered vehicles.²³ This is why it is vital for Government, at all levels, to recognise and support the significant role that gas can play as a cleaner transport

¹⁷ Source DfT Rail Freight Strategy September 2016

¹⁸ <https://www.theguardian.com/cities/2017/feb/14/65-percent-british-public-want-clean-air-act-pollution-harmful-uk-survey>

¹⁹ <https://www.bbc.co.uk/news/science-environment-44567075>

²⁰ <https://www.bbc.co.uk/news/science-environment-44567075>

²¹ <https://www.bbc.co.uk/news/science-environment-44567075>

²² https://www.lowcvp.org.uk/assets/reports/LowCVP%20Biomethane%20Report_Part%201%20Final.pdf

²³ <http://www.ngvnetwork.co.uk/category/case-study/>

fuel, both now and in the future. Given that gas-powered HGVs have been proven to deliver even greater emissions reductions and air quality improvements than Euro VI diesel, GMCA could stand to benefit significantly from clear and ambitious action in this area.

Question 36 Do you agree with the proposed policy on Supporting Long-Term Economic Growth?

We agree with the proposed policy on long term economic growth, but would like to add to the 'facilitating the development of high value logistics clusters' policy. GMCA could encourage freight companies to locate their depot centres outside of the city centre and then use low emission vehicles to transport goods to the city centre. This could give an economic boost to neglected out of town areas and bring jobs to the area. Ensuring low emission Lorries are not driven to the city centre areas would deliver big reductions on NO_x.

Question 71 Do you agree with the proposed policy on Freight and Logistics?

EUA agrees with the policy on freight and logistics, but we would add that a charge against Diesel HGVs should be considered to discourage them from entering problem areas for air quality. This charge would also include an exemption for gas powered HGVs which do not produce high amounts of NO_x, and therefore could make a positive impact on people's health. The charging scheme could operate in a similar manner to London's ultra-low emissions zone whereby signs inform drivers where the scheme begins and then cameras identify offending vehicles by their number plates and charges are sent out in the post. GMCA could incentivise freight companies to locate their distribution centres outside of the city centre, or high air pollution areas and then use gas vehicles to carry their goods into the city centre.

Question 139 Do you agree with the proposed policy on Infrastructure Implementation?

In the policy about, developers providing 'reasonable gas and water supply, considering the need to conserve natural resources', EUA would be keen to hear what 'reasonable' is being defined as, and how this will be achieved. We would also like to see how GMCA intend to limit consumer's use of energy, as currently we have not seen any evidence that consumer behaviour will change to lower consumptions.

We would also be interested to understand what is meant by 'decentralised energy networks' in the following sentence. *"Heating and cooling demand and the viability of its provision via decentralised energy networks. Designs must incorporate access to existing networks where feasible and viable"*.