Action on Climate in Teignbridge

LOCAL PLAN REVIEW: POLICIES AND INITIATIVES FOR TRANSPORT IN RESPONSE TO TDC'S CLIMATE EMERGENCY DECLARATION

INITIAL RESPONSE

14th October 2019

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Important note

This is an evolving document, intended to be an initial resource for policies and initiatives within Teignbridge. New, potentially more radical, initiatives are may well develop over coming months, which may have planning implications.

Furthermore, this is not a carbon reduction plan for transport, nor does it contain final policies to be incorporated into regional, local or neighbourhood plans.

We recommend that anyone interested in developing plans and policies should look at relevant information on the ACT website. In particular, the Cornwall Action Plan is a comprehensive source for such information.

This document contains a number of references to source material used in deriving our policies. The sources referenced form an important part of the document, because they provide expanded, and sometimes additional, insight into the points we make.

ACT Transport working group.

Section 1. **Introduction and Purpose**

The purpose of this document is to provide an overview of how the Teignbridge District Council's (TDC's) climate emergency declaration can and should be reflected in transport-related policies in the Local Plan. It has been prepared by the Transport working group of ACTion on Climate in Teignbridge (ACT), TDC's community partner for developing and delivering responses to the declaration.

The Transport working group's role is to:

- identify the scale of transport's contribution to the district's greenhouse gas emissions,
- describe the challenges to reducing it in line with the declaration's target of net zero emissions by 2025, and
- propose changes and initiatives which will help to meet the target.

The group's approach is to refine understanding of the scale, challenges and potential changes and initiatives over time. It will do this by co-operating with others, nationally, regionally and locally. National and regional co-operation will allow us to learn from others and share best practice, and in particular, to learn from initiatives which are being undertaken elsewhere.

Local co-operation is particularly important. ACT is community-led, and to be effective, it will need to bring the Teignbridge community with it, to be successful in delivering a sea-change in attitudes and behaviour. The same is true of TDC.

This document provides the working group's initial formulation of the scale and challenges. The changes it proposes are those relating to transport-related sections of the Teignbridge Local Plan 2033. It begins by describing the overall policy context, and then the scale and challenges faced. The later part of the document lists proposed changes to transport-related policies, divided into three areas: reducing the need to travel; modal shift and a shift to low emission vehicles.

Section 2. **Context: Implications of the Climate Emergency Declaration**

On 18th April 2019 TDC's pledged to do "what is within our powers, to make Teignbridge District carbon neutral by 2025, taking into account both production and consumption emissions".

It is worthwhile restating the reason for the declaration. It was passed in response to widespread community activity (such as the school climate strikes and Extinction Rebellion's actions), which reflected concerns of many councillors, officers and residents. Those actions and concerns arise from an awareness that humanity faces an existential crisis. Without rapid and deep transformation, we face 4 degrees of global heating by 2100. Such heating is likely to render human existence unsustainable.

It is in this context that members and officers have formed a clear intention to implement the pledge. As a planning authority, two key ways for TDC to do this are:

1. to ensure the Local Plan's primary focus, so far as this is compatible with the law, is on achieving the target.
2. Enforcing all emissions-related policies in the Plan.

Both of these are needed; policies are ineffective without enforcement.

The fundamental way in which the Local Plan's primary focus is on achieving the target is, of course, through an amendment to Policy S7. This currently notes a target of 42% reduction by 2030 (against a 2009 baseline). This needs to be replaced by a target based on a 14.4% per year reduction, as described in the ACT Built Environment working group recommendations.[1]

[1] An additional issue is that the current target fails to take account of existing dwellings which are above the target or are not conveniently situated. These dwellings will not be at 42% below the 2009 target, so the overall 2009 target will never be achieved.

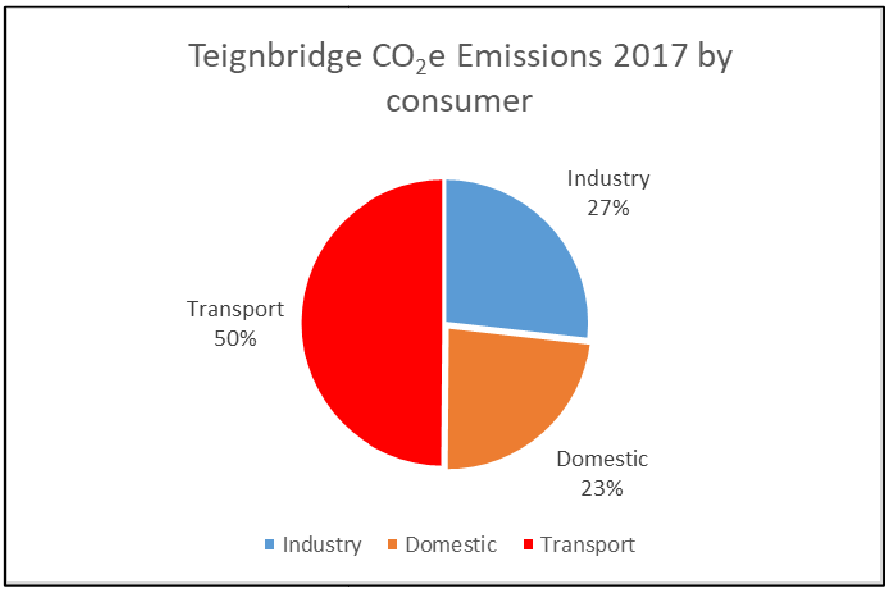
While TDC is not a local highway authority, there are many ways in which the Plan can support positive transport-related change, and inhibit negative change. District councils have the power to do this. The Royal Town Planning Institute (RTPI) has issued guidance to local authorities[2] which states that local authorities are empowered to:

- Shape places to help secure radical cuts in greenhouse gas emissions. This requires the location and layout of new development to be planned to:
    - Deliver the highest viable energy efficiency including the use of decentralised energy.
    - Reduce the need to travel, particularly by private car; and
    - Secure the highest possible share of trips by sustainable travel.
- Actively support and help to drive the delivery of renewable and low-carbon energy generation and grid infrastructure.
- Shape places and secure new development to minimise vulnerability and provide resilience to impacts arising from climate change, in ways consistent with cutting greenhouse gas emissions.
- Ensure that there are real opportunities to take positive action on climate change by encouraging community-led initiatives such as the promotion of decentralised renewable energy use or securing land for local food sourcing.
- Increase sustainable transport use and local transport solutions.

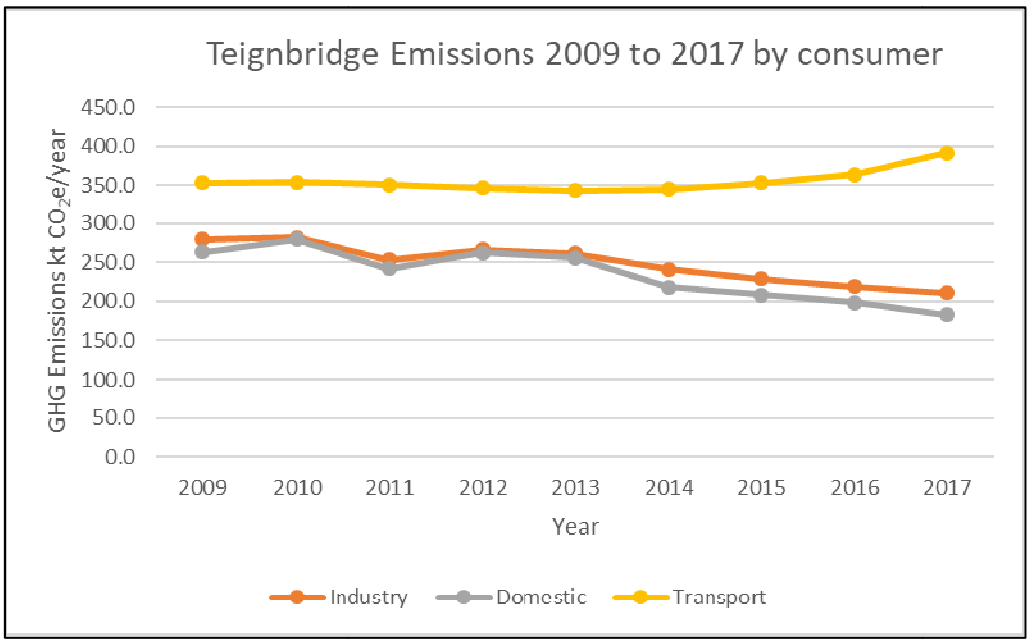
[2] Rising to the Climate Crisis – A Guide for Local Authorities on Planning for Climate Change RTPI p.25

Section 3. **The scale and nature of the challenge**

Transport contributes almost 50%[3] of the district's carbon emissions[4 as] shown in the pie chart below. This includes emissions from private and public transport by road and rail. It does not include air travel (flights undertaken by Teignbridge residents) or the district's proportion of national emissions from transport by sea.



The line graph below shows that transport-related emissions are also increasing. They rose 11% between 2009 and 2017, despite overall emissions having fallen 12.3% over the period.[5]



The main reason for the drop in emissions from the domestic and industrial sectors shown above is the reduction in emissions from electricity generation. There is limited scope for a further reduction, except by substituting electric vehicles (EVs) for those powered by fossil fuels.

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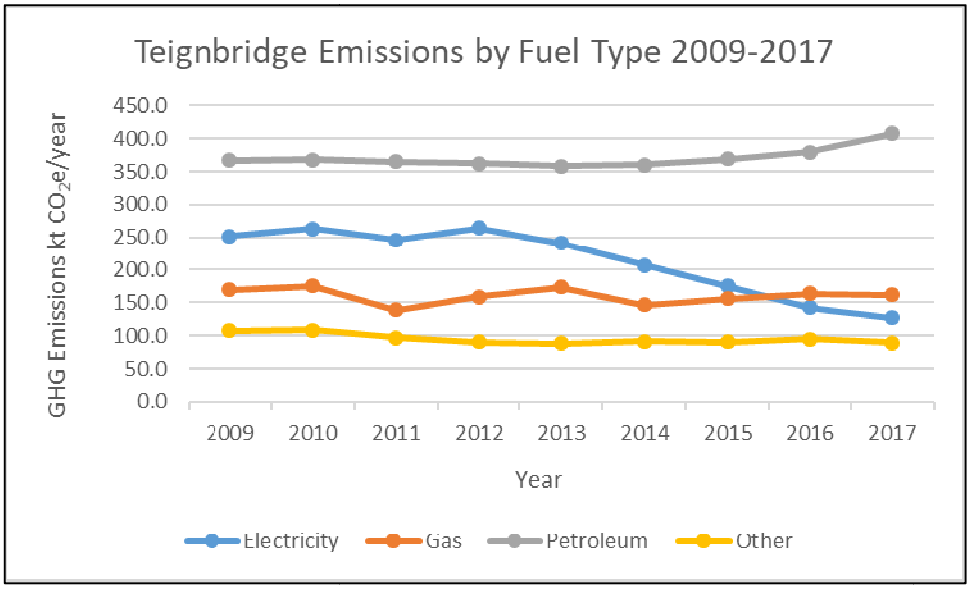
[3] The total is 49.9%, calculated from here.

[4] For simplicity, this document refers to "carbon emissions" throughout. This term is used to cover all green house gas emissions, and figures given are for CO_2 equivalent emissions ("CO_2e").

[5] Here

The second line graph, which shows the district's emissions from all sources, reinforces this point. It shows that, while there has been a marked reduction in electricity-related emissions, petroleum emissions, which are overwhelmingly generated by transport on A and minor roads, is increasing. shows that there is considerable scope to do this, given the high emissions from petroleum fuelled vehicles.



The challenge is not merely to reverse the upward trend in transport-related carbon emissions, but to eliminate them almost entirely by 2025. This challenge cannot be met by local action alone. Our own Zero Carbon analysis shows that we do not believe achieving zero carbon emissions for the whole of Teignbridge is realistic without radical national policy changes. TDC has a role to play, with other councils and community organisations, in lobbying for those changes, many of which relate to transport.

In addition to policy change, achieving the target will require an unprecedented change in everyone's attitudes and behaviour. Local initiatives can help foster that change, as can policies in the Local Plan. For example, requiring 4 metre-wide segregated cycle and footpaths as part of all new developments would increase the number of people using them (other things being equal).

The key drivers of transport emissions in the district are infrastructural. They are believed to be: [6]

1. that most vehicles are fossil-fuelled,
2. The fact that most vehicle movements may arise from:
   a. commuting (see Appendix 2), because people work at a distance from their homes
   b. goods deliveries
   c. travel to shops,
3. most vehicle movements for commuting involve private cars, rather than public transport, and
4. road networks are designed to meet the needs of car and lorry drivers, rather than other road users, such as cyclists.

While these infrastructural drivers can only be fully addressed if there are national policy and legal changes, there remains scope for action at district level, encouraged ore required by the Local Plan.

Section 4. **The range of solutions to transport emissions**

[6] At this stage we have not quantified emissions from the different sources listed, and so these comments are not yet evidence-based, and are subject to change.

The range of solutions to the challenge of reducing transport emissions is well understood. It encompasses:

1. reducing the need to travel, for example, by providing work opportunities near where people live, increasing home working opportunities, and providing shops and other facilities close to homes,
2. modal shift, for example from car to bike, foot or public transport, and
3. a shift to low emission vehicles. These should, ideally, be low emission in manufacture and use. Most low emissions vehicles are likely to be electric cars, though it may be challenging to provide enough low emission electricity in the district to meet demand.

Sections 5, 6 and 7 address each of these types of solutions, in turn. Section 8 comprises with a discussion of the carbon calculator, proposing an alteration to the latter which can finance, or otherwise enable, some of the changes recommended in the earlier sections.

Section 5. **Proposed policy changes: Reducing the need to travel**

5.1 New homes to be near places of employment

Many people living in the district commute to work, often in Exeter. It will not be possible to change this significantly in the short term, particularly as there are not as many job opportunities, or opportunities for the same type of work, within the district (see Appendix 1). A further issue is that incomes in Exeter are on average about £5,000 higher than in Teignbridge, and so new housing is more affordable for people who work in Exeter than those working locally.

It would be possible to influence the scale and location of new housing, and increase the provision of associated job opportunities, through changes to the Local Plan. We would propose that:

1. the plan be reviewed to assess whether housing allocations could and should be changed so where more houses must be provided, they are built closer to existing centres of work, such as Exeter, rather than in the Heart of Teignbridge,
2. housing should be placed in locations from which it is possible to walk to employment, shopping and leisure facilities,
3. where there are conditions for employment facilities to be built as part of new developments, they should be enforced, and
4. developers should be required to post a bond large enough to ensure compliance with planning conditions

Shops are places of employment. There should be a similar provision regarding the provision of shops as for other employment spaces described above, with similar bond and enforcement elements.

Conversion of shops to homes reduces local employment opportunities, among other negative emission effects. We recommend that the Local Plan be amended to reduce the opportunity to undertake such conversions, so far as the law allows. In particular, all shops zoned as within secondary shopping areas should be reviewed, with the intention to rezone them as within primary shopping areas wherever possible.

5.2 Working from home.

Other things being equal,[7] working from home can reduce overall carbon emissions compared with commuting to work. Policy EC4 provides for working from home, but is stated in slightly negative

[7] Where home workers need to use fossil fuel to heat a poorly insulated home, net emissions might exceed those saved from ceasing to commute. In the case of new dwellings, however, this should not be relevant, because such homes should be zero emission in operation.

terms, being that "it is acceptable in principle" to use part of a dwelling for employment. We propose that home working is stated to be preferable. This could be subject to conditions similar to those currently in the section, amended to reflect the primary importance of emissions reduction.

We support any amendments to require fast fibre to the dwelling. This is essential to facilitate home working where employers require fast broadband, and a corporate IT infrastructure that accommodates remote working, such as VPNs.

There can be problems relating to isolation for people who work primarily from home, employed by corporates with offices in e.g Bristol or London, where home workers attend infrequent meetings. The Local Plan could address this by requiring provision of a meeting space for home workers in respect of all new developments above a minimum size.

5.3 Traffic in Towns

Traffic in towns is a significant cause of pollution (NOx and particulates) and carbon emissions. Some possible schemes to reduce this are:

- congestion charging zones,
- ban on internal combustion engine (ICE) vehicles in parts of a town centre,
- enlarging the Newton Abbot central pedestrianised zone in including moving the bus layover at Sherbourne Road and closure of part of Halcyon Road, and
- park and ride facilities – either by bus or light rail.

Policy NA9 notes that the bus station in Sherbourne Road likely to detract from the quality of the new Town Centre Markets Area (NA9, 7.66). This would have significant benefits in the central area of the town.

If this were done, Halcyon Road and the cattle market car park could be put to other uses, and Halcyon Road could have pedestrian/controlled access. This could then lead to a large central pedestrian/cycle area with parking on the periphery. This would relieve holdups at the lights at the junction of the A382 and Halcyon Road.

As Halcyon Road would no longer be a through route, this change would mean there would be less traffic entering the roundabout by the fire station from the B3195. This should relieve congestion on Jetty Marsh Road, which might get worse when the new link road is built.

We recommend that this proposal be evaluated, with a view to including it in the revised Local Plan.

Section 6. Proposed policy changes: Modal shift

This section discusses the different alternative modes of travel to the car, and suggests how each can be promoted

6.1 Cycling

If cycling is to reduce car use, safe, straightforward routes between home, work, shops and other destinations are required. There are good policies for enhancing cycle routes in the Local Plan, but these have not had sufficient impact on emissions. One challenge is that, where the distance between home and work is too long for cycling alone, mixed mode commuting is difficult. The plan should be reviewed to assess how this can be eased, for example through:

1. safe, secure cycle storage at all railway stations,
2. requiring external or internal cycle storage space on buses as a condition of subsidy (through, for example, the Community Infrastructure Levy), and
3. reviewing the measures taken by other authorities to address this issue, and promoting the best through the Local Plan, where possible.

As people become more familiar with cycling, and become more confident, they are more likely to cycle to work. We therefore recommend the following measures to increase cycle use generally:

- Review successful district-led cycling initiatives across the UK, and, where possible, promote the best through the Local Plan
- Working with expert advisers such as Sustrans, and local cycling stakeholders such as Mid Devon Cycling Club and members of the Teignbridge Cycling Forum, establish a requirement for a higher level of cycle way provision as a condition of all new developments. There should be a presumption that this includes at least 4 metre cycleways with stepped separation from pedestrian paths.
- Where cycling provision is a condition of new development planning provision, require a developer bond adequate to cover the cost of provision, and enforce the condition.
- Ensure measures in the Local Plan maximise the chance of completing National Cycle Route 2 between:
  - Newton Abbot and Dawlish, and
  - Newton Abbot and Totnes
- If supported by expert advisers and local cycling stakeholders, work with other authorities to explore options to extend National Cycle Route 28 to Okehampton

6.2 Walking

Where walking replaces car use, it reduces carbon emissions. Walking opportunities can be to work, but more often are to shops or for leisure.

Proposals for new developments may contain provision for such facilities, but they may not be built in practice. This discourages walking and encourages car use. We recommend that a bond be required for such developments, sufficient to cover the cost of construction.

There are many walking routes in the district, but frequently part of the route requires walking on a major road without a footpath. An example is the Newton Abbot footpath 9 about 0.64 miles to the west of Hele Park roundabout along the Ashburton Road (near grid reference 282315,72022).

6.3 Bus and rail

Bus and rail alternatives to commuting are addressed in the same section because integration of the two is a key way of increasing their use. It would also reduce car travel to Exeter for other purposes, such as shopping.

One opportunity is to site Newton Abbot bus station close to the railway station. Section 5.3 discussed the possibility of moving it from its current location. If the new layover location were be on land close to Newton Abbot station (possibly on Brunel Road trading estate to take advantage of the new footbridge), this would make it much easier for people to travel by bus and then train, or vice versa.

Another other element of integration could be to coordinate timetabling, to reduce delays. While this cannot be required in the Local Plan, TDC could raise it with Devon County Council, perhaps in the context of bus subsidies.

One of the keys to encouraging commuting by bus this is frequent, predicable services (ideally no more than 10 minutes wait, and with the ETA shown at bus stops as well as on an app), which are cheap (or free). This is outside the scope of the local plan, and indeed generally outside that of a district council (except in the context of CIL), but could be emphasised in discussions with the county council. The Local Plan could, perhaps, require that in urban areas new dwellings should be within 400 metres of a bus stop.

Any opportunity which the Local Plan might offer to facilitate rural dial-a-bus or community transport options should be taken up.

Another useful contribution to reducing travel emissions would be to re-open the Heathfield railway line as light rail link connection to Newton Abbot. We are aware that there is considerable history to

this proposal, some work has been done, and TDC has been supportive. We also understand that Network Rail would also be supportive, but that there are challenges, such as the current level crossing at Teigngrace. Local Plan S10 should be reviewed, together with other sections which might be relevant to new development in Heathfield, or to increased use of the Teigngrace Road which crosses the line, to assess whether reinstatement of the line can be promoted. The new rail provider could be community owned, and the vehicle entirely battery powered (compare The Lightweight Community Transport). One option would be a Parry's People Mover, and another Vivarail.

6.4 Low emission goods delivery

Currently many small goods deliveries are made by diesel vans from depots based in Exeter or Plymouth. Diesel vehicles which stop frequently use fuel very inefficiently. Replacement of these vehicles with electric vehicles, which are much more efficient when used for frequent stops, should be encouraged, and supported in the Local Plan so far as possible.

A variation on this model would be to promote freight delivery via rail to Newton Abbot and other stations in the district. The final delivery could then made by electric vehicles, which could be:

- cargo e-bikes,
- electric quadricycles adapted for cargo, or
- larger electric vans for delivery beyond the urban centre.

The Local Plan should be reviewed to assess how this model could be promoted, particularly by learning from experience elsewhere in the UK and Europe. Elements could include:

- provision of transfer space and e-charging at stations, and
- creating safe, wide cycle lanes in urban areas (by converting roads to one way, closing them to vehicles, or adopting the mini-Holland model, following Waltham Forest's example).

Section 7. Proposed policy changes: Low emission vehicles

7.1 Electric Cars

The Local Plan will need to both respond to any projected increase in electric car use, and encourage it, as one way of reducing fossil fuel use.[8]

There are several drivers of demand for electric vehicles generally, and cars in particular. One is cost of purchase and operation. Both are likely to drop below those of an ICE vehicle in the very near future[9].

Another driver is current government policy, that new ICE vehicles will be banned from sale by 2040. These factors should lead to a rapid increase in EV take-up. This is also indicated by September 2019 sales of BEVs which increased 236% over September 2018 (though their market share was only 2.2%)[10].

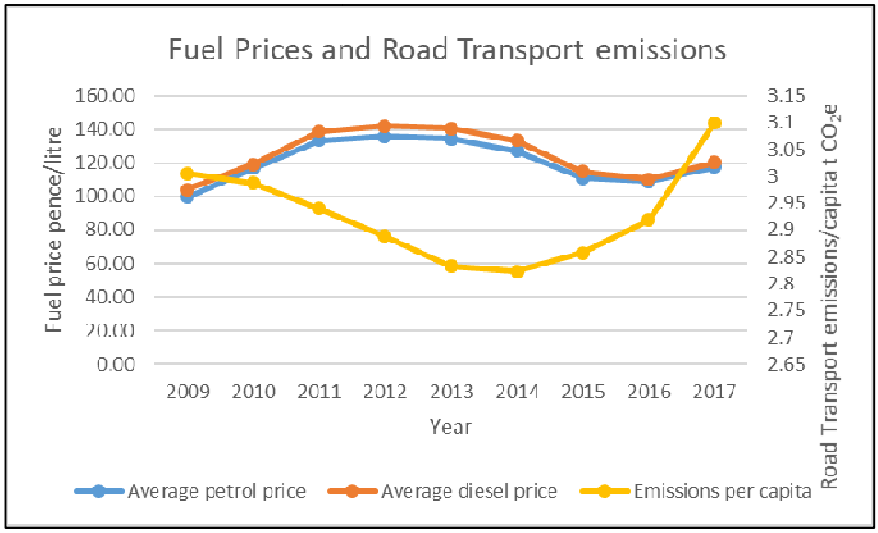
Government policy also has a strong influence on fuel prices, by deciding the level of fuel duty. The following graph suggests that there is a reduction in emissions following an increase in fuel prices,

[8] Subject to the electricity used in vehicles being as close to zero carbon as possible. . At present, most EVs will most likely use a mix of grid and renewable electricity, so in the short term will still be responsible for CO2 emissions. This will change as the grid approaches carbon neutrality.

[9] Deloitte report on battery electric vehicles https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/manufacturing/deloitte-uk-battery-electric-vehicles.pdf

[10] SMMT new vehicle registrations September 2019 https://www.smmt.co.uk/vehicle-data/evs-and-afvs-registrations/ - note that this link is for the most recent month and gives monthly and year to date figures.

though for the slight rise from 2016 to 2017 does not seem to have been big enough to have this effect. A sharp increase in fuel prices could drive EV take-up.



There are a still a number of barriers to take-up of EVs. Some cannot be influenced locally, such as:

- The price of new vehicles.
- The limited number of vehicles available second-hand.
- Manufacturer waiting lists for those who can afford EVs.
- Range anxiety.

On the other hand, the following barriers could be addressed, including, to a degree, through the Local Plan:

- Lack of on street charging for those who do not have off street parking.
- Limited availability of destination charging facilities.
- Limited availability of rapid charging facilities en-route.

To address these barriers, we would recommend that, so far as possible, the Local Plan facilitates:

- Ensuring that all new dwellings are capable of providing off-street parking with a charging point.
- Providing on street charging points where there is likely to be demand. This could support a council-led initiative to install them, using the government grant available for the purpose. There are practical challenges to installing such charging points, but they can often be overcome.[11]
- Providing or encouraging the provision of charging points at destinations such as:
    - car parks – both council and supermarket

[11] There are a number of other potential initiatives which could be council-led, but which are outside the scope of the Local Plan, such as:

- Introducing low emission zones.
- Procuring EVs for the council fleet.
- Preferential parking policies for EVs.
- Working with taxi companies to ensure that taxis are EVs, including by requiring EVS as a condition of a licence from a future date.
- EV education perhaps in the form of EV road-shows, which could probably be funded by manufacturers or local dealers.

- hotels and other overnight accommodation, where charging points should be reservable.
- workplaces

Provision should be generous in all locations, so that the risk of not being able to charge is low.

It is understood that draft policies have been produced for EVs in relation to new development, which acknowledge likely take up. These policies refer to relating charging point provision to EV market share once this reaches 30%. Once this point is approached charging point supply will need to lead market share by, say, 10%.

A problem of supply of electricity may arise. Charging EVs will result in increased electricity demand. Our Zero Carbon report shows that if all light vehicles were to be EVs, then local electricity demand would increase by about 650 GWh, even if this were to be spread evenly across the year the capacity of the National grid connection at Abham would be exceeded.

In practice demand from EVs will not be evenly distributed, even if smart chargers are used that attempt to spread the load. So the situation will probably be worse than stated. This is not sustainable, so either:

- Additional National Grid network capacity and generation is required, or
- Local renewable electricity generation is built to satisfy demand, or
- Car usage must be dramatically reduced.

It follows from this that, EVs provide an important part of the answer, reducing travel by private vehicles will still be needed. Additional drivers of this need are that:

- There will probably be some ICE vehicles on the road up to 2050 and beyond.
- New vehicles are expensive regardless of fuel source and the majority of the fleet will be ICE vehicles until affordable second-hand EVs are available.
- Increases in traffic will lead to unacceptable congestion, which alone will increase emissions.
- It is unlikely that the renewable electricity supply can increase to meet unconstrained demand all year round. This would require on-shore wind and storage, as well as PV.

7.2 Electric Buses

Electric buses should be encouraged, so any layover location should include charging facilities and necessary electricity storage. This electricity storage could also participate in network flexibility services.

7.3 Electric Bikes

Electric bikes provide assistance to the rider, which can make their use practical for those who are not 100% fit. This is particularly the case where there are hills, such as we have in Teignbridge. Electric bikes can use existing cycleways providing that they meet regulatory requirements. An electric bike can travel up to 50 miles on a charge with a 500 Wh battery. The electricity use by electric bikes is much less than EVs.

Secure storage possibly with charging facilities should be encouraged locations such as:

- Railway stations
- Car parks

Electric cargo bikes could also play a role in deliveries, if there were local depots to distribute from at or near each railway station.

Section 8. **The carbon calculator**

ACT's Built Environment working group report notes the need for an overarching statement that all energy sources included in new developments must be capable of being renewable. This will then, of course, require (under EN3) major developments to produce a carbon reduction plan which identifies how they will minimise their carbon footprint and achieve emission targets. This is relevant to transport because there is a transport-related issue relating to the carbon offsetting calculator developers can use to show how they meet the target.

The calculator includes a purported calculation of emissions from transport for a new development, which bases transport emissions on:

- Proximity of railway station, bus route, segregated walking and cycle route.
- Home office facility
- Car charging points
- Cycle storage

This fails to account for the likelihood of commuting by car out of the district. We recommend that the calculator is adjusted to take account of such commuting.

It is also worth noting that the Teignbridge target figure for new development corresponds with a 42% reduction by 2030. Since most existing dwellings are well above the target, new dwellings need to be substantially below target, otherwise it cannot be achieved. Addressing transport issues fully may help achieve this.

Appendix 1: The Draw of Exeter

Exeter is a major centre of employment, with median gross workplace-based earnings of £28,844 in 2018 against Teignbridge's £23,324. Average house price in Teignbridge is £245000 at September 2018. Giving an affordability ratio of 10.5 against Teignbridge earnings, whereas this is 8.49 against Exeter earnings.[12] The affordability ratio has a direct effect on the calculation of the number of dwellings the authority is required to build[13.] If Exeter earnings were used in the housing need calculation, then 692 dwellings would be needed against 760 using the standard calculation.

According to MoneySaving[14] expert for a couple both on Teignbridge earnings will support a maximum mortgage of £163,000. A couple on Exeter earnings supports a maximum of £202,000. It is inevitable that those who are stretched to buy a property will commute to where earnings are higher. So attracting employment which pays more than the Teignbridge average will help reduce commuting. Similarly a requirement that a proportion of dwellings were affordable to those on Teignbridge average earnings would help, as would building housing for social rent.

12 https://www.ons.gov.uk/peoplepopulationandcommunity/housing/datasets/ratioofhousepricetoworkplacebasedearningslowerquartileandmedian

13 https://www.gov.uk/guidance/housing-and-economic-development-needs-assessments

14 https://www.moneysavingexpert.com/mortgages/how-much-mortgage-borrowing/

Appendix 2: Emissions by Road Type

Emission figures are published by road type for the authority. The following table shows these for Teignbridge and neighbouring authorities in 2017.

Local Authority	I. Road Transport (A roads) Emissions kt	J. Road Transport (Motorways) Emissions kt	K. Road Transport (Minor roads) emissions kt	**Transport Total Emissions kt**	Major Roads Total kt	Length of A + M Road (km)	Major Road Emissions kt/ km	Population 2017	Major Road Emissions per Capita (tonnes)	Area (Hectares)	Transport Emissions tonnes per Hectare
East Devon	168.17	69.98	86.74	324.90	238.16	213.7	1.1	141500	1.68	82372	3.94
Exeter	39.15	26.36	39.13	104.64	65.51	33.0	2.0	129000	0.51	4789	21.85
Mid Devon	93.25	118.21	58.80	270.26	211.46	172.1	1.2	80200	2.64	91290	2.96
South Hams	181.44	0.00	58.31	239.75	181.44	170.7	1.1	85000	2.13	90525	2.65
Teignbridge	317.64	20.86	72.33	410.83	338.50	170.9	2.0	131000	2.58	68101	6.03
Torbay	58.86	0.00	84.48	143.34	58.86	45.8	1.3	135000	0.44	6287	22.80
West Devon	133.89	0.00	54.80	188.69	133.89	166.0	0.8	54900	2.44	116472	1.62

Sources of data:

- Local authority CO2 estimates 2005-2017 (kt CO2) – Full dataset15
- Road lengths from intersection of OS Open Roads Roadlinks16 with Local Authority boundaries from OS Boundary Line17.
- Population 2017 from ONS 2016 based projections by local authority18
- Area from query against OS Boundary Line17.

Emissions attributes to A roads are noticeably higher than the other authorities. This is true at an absolute level, and also by length of major roads. Less so per capita, or per hectare.

This could either be attributed to:

- Traffic passing through Teignbridge on the A38 and A380, in which case we would expect these emissions to also appear in neighbouring authorities.
- Commuter traffic.

It is relatively difficult to reduce through traffic, but it is suggested that the majority of emissions are due to commuter traffic.

15 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/812142/2005-17_UK_local_and_regional_CO2_emissions_tables.xlsx

16 https://www.ordnancesurvey.co.uk/opendatadownload/products.html#OPROAD

17 https://www.ordnancesurvey.co.uk/opendatadownload/products.html#BDLINE

18 https://www.ons.gov.uk/file?uri=/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/localauthoritiesinenglandtable2/2016based/table2.xls