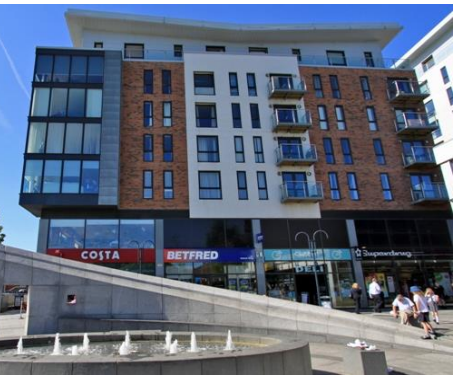
Bury Local Plan

Topic Paper 5

Energy and Physical Infrastructure









October 2018

Bury COUNCIL

Contents

1 Introduction

1.1 This Energy and Physical Infrastructure Topic Paper is one of a series that has been prepared as part of the process of evidence gathering to support Bury's emerging Local Plan. The full range of Topic Papers deal with the following:

- 1 – Housing
- 2 – Economy and Employment
- 3 – Town Centres and Main Town Centre Uses
- 4 – Health and Wellbeing
- 5 – Energy and Physical Infrastructure
- 6 – Flood Risk
- 7 – Natural Environment
- 8 – Open Land
- 9 – Built Environment
- 10 – Transport
- 11 – Community Facilities

1.2 The principal aim of this Topic Paper is to set out current key policies, plans and strategies relating to energy that will form the framework for the development of the Local Plan and to present a profile of the Borough that will highlight key issues, problems and challenges that the Local Plan should ultimately seek to deal with. This will subsequently help to shape and influence the direction and focus of the Local Plan's planning policies, designations and site allocations.

1.3 The National Planning Policy Framework states that the planning system is expected to make a significant contribution to tackling climate change. Vital roles include promoting energy demand reduction in buildings, greater opportunities for local renewable energy generation, linking future homes to employment with green transport and addressing the impact of increasingly volatile weather on people and systems.

1.4 It is intended that the Topic Papers will be 'living' documents that can, if necessary, be updated to reflect the most up-to-date circumstances. **For example, some of the evidence contained within the Topic Papers has been drawn from evidence that has been developed to support the draft Greater Manchester Spatial Framework (GMSF). Any subsequent amendments to the GMSF and/or its supporting evidence, will be reflected in the evidence supporting Bury's Local Plan**.

2 Key Policies, Plans and Strategies

2.1 One of the key early stages in the process is to review other policies, plans and strategies which are of relevance to this particular topic area and which will help to inform and influence the direction of the Local Plan. Clearly, there is a need for the Local Plan to be consistent with planning policy at different levels.

2.2 The National Planning Policy Framework (NPPF) sets out Government Policy in respect of planning matters and this is supported by Planning Practice Guidance (PPG). This sets out the broad planning framework within which development plans are produced.

2.3 Sub-regionally, the emerging Greater Manchester Spatial Framework will establish strategic policies and site allocations across Greater Manchester. This document will, once adopted, form part of Bury's development plan alongside the Local Plan.

2.4 There are also a range of other plans and strategies that, whilst not being policy, are considered to be of relevance to the Borough from an energy and climate change perspective.

National Planning Policy

2.5 Paragraph 8 of the NPPF specifies that planning has an important economic role by, amongst other things, identifying and coordinating development requirements, including the provision of infrastructure.

2.6 Paragraph 28 states that non-strategic policies should be used by local planning authorities and communities to set out more detailed policies for specific areas, neighbourhoods or types of development. This can include the provision of infrastructure at a local level.

2.7 Paragraph 81 states that planning policies should seek to address potential barriers to investment, such as inadequate infrastructure.

2.8 Chapter 10 of the NPPF focuses specifically on supporting high quality communications infrastructure. It states that advanced, high quality communications infrastructure is essential for economic growth and social wellbeing and that planning policies should support the expansion of electronic communications networks, including next generation mobile technology (such as 5G) and full fibre broadband connections. Policies should set out how high quality digital infrastructure, providing access to services from a range of providers, is expected to be delivered and upgraded over time; and should prioritise full fibre connections to existing and new developments.

2.9 Paragraph 113 states that the number of radio and electronic communications masts, and the sites for such installations, should be kept to a minimum consistent with the needs of consumers, the efficient operation of the network and providing reasonable capacity for future expansion. Use of existing masts, buildings and other structures for new electronic communications capability (including wireless) should be encouraged. Where new sites are required (such as for new 5G networks, or for connected transport and smart city applications), equipment should be sympathetically designed and camouflaged where appropriate.

2.10 Chapter 14 of the NPPF deals with meeting the challenge of climate change and paragraph 148 states that the planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change. It should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure.

2.11 Paragraph 151 states that to help increase the use and supply of renewable and low carbon energy and heat, plans should:

- provide a positive strategy for energy from these sources, that maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts);
- b) consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and
- c) identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers..

2.12 Paragraph 153 states that in determining planning applications, local planning authorities should expect new development to:

- comply with adopted Local Plan policies on local requirements for decentralised energy supply unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable; and
- take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption.

2.13 Paragraph 154 states that when determining planning applications, local planning authorities should:

- not require applicants for energy development to demonstrate the overall need for renewable or low carbon energy and also recognise that even small-

scale projects provide a valuable contribution to cutting greenhouse gas emissions; and

- approve the application if its impacts are (or can be made) acceptable. Once suitable areas for renewable and low carbon energy have been identified in plans, local planning authorities should also expect subsequent applications for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying suitable areas.

The Greater Manchester Spatial Framework

2.14 Once adopted, the Greater Manchester Spatial Framework (GMSF) will form an integral part of Bury's wider development plan. Consultation on the first draft GMSF ended in January 2017 and there are proposals to issue a second draft for consultation shortly.

2.15 One of the key purposes of the GMSF is to adopt a co-ordinated and integrated approach to infrastructure planning and delivery in order to ensure that the successful delivery of the GMSF is not limited by provision of infrastructure.

2.16 Another key aim of the GMSF is to support significant reductions in carbon emissions across Greater Manchester and a key element of this is to utilise renewable and low carbon energy sources.

Other Plans and Strategies

Greater Manchester Climate Change and Low Emissions Implementation Plan 2016-2020

2.17 The Greater Manchester Climate Change and Low Emissions Implementation Plan complements the GM Low Emissions Strategy and the GM Air Quality Action Plan and lays out a pathway for the next 4 years. It builds upon existing work and sets out priorities to 2020 and beyond. The headline goals for the plan are:

- To cut carbon emissions by 48% between 1990 and 2020;
- To grow a low carbon economy;
- To rapidly adapt to a changing climate;
- To embed low carbon behaviours; and
- To achieve air quality thresholds.

2.18 It includes ten critical actions to both address climate change and improve Greater Manchester's air quality:

- Major infrastructure changes: Identifying spatial, technological and market opportunities and funding to deploy the type and scale of energy efficient/low carbon development, generation, distribution, storage and smart technologies required to deliver carbon and emission targets.

- Reducing fossil fuels in transport: Decreasing reliance on fossil fuels across all transport activities and influencing how and when people choose to travel.
- Living low carbon lives: Reaching out to Greater Manchester's communities, to increase understanding of the opportunities and implications of climate change, incentivising and supporting action to make the transition to a low carbon economy.
- Trading energy intelligently: Intervening in how energy is traded to ensure cost effective energy efficient/low carbon energy generation is prioritised at cost effective and fair prices for consumers.
- Supporting clean business: Supporting businesses to become more resource efficient, access new low carbon market opportunities and make the transition to a low carbon economy.
- Making informed decisions: Making sure existing and planned major investments, assets, purchases and programmes comply with climate change goals.
- Preparing for a volatile climate: Addressing the existing and future effects of climate change, equipping residents, businesses and communities with the skills and resources needed to be fit for a changed climate.
- Local to global climate action: Using local experience to shape national and international performance, by negotiating with national government to continue to secure devolved responsibilities, funding, freedoms and flexibilities and collaborating with local, national and international cities and partners to secure supportive legal, policy and fiscal frameworks.
- Reinforcing the right behaviours: Make sure plans have the intended effect, by considering setting and enforcing clear standards and a more diverse landscape of incentives and penalties to ensure that the required results are achieved.
- Planning for the future: Putting in place post 2020 targets, plans, programmes and key milestones to reach a clean energy future, and integrate these across GM's wider strategies, plans, policies and projects.

Greater Manchester Spatial Energy Plan, October 2016

2.19 The Greater Manchester Spatial Energy Plan was developed as a background paper to support the Greater Manchester Spatial Framework.

2.20 The Plan recognises that achieving GM's long term decarbonisation ambitions will require significant changes to the types of energy that are used; as well as how, and when, they are used. For GM to continue to grow and thrive during this change future energy sources must be secure, affordable and sustainable. This will require action at both a local and a national scale. Business-As-Usual will not be sufficient to meet the goals that have been set.

2.21 Electricity will remain an integral part of the energy system in GM and will be used increasingly for both heat and transport. Recent years have seen a growth in local installed renewable energy capacity stimulated by national policy

initiatives. However, the opportunities for GM to generate low carbon electricity locally are limited. This study has established that up to 9 % of GM's electricity could, technically, be generated locally using renewable sources. It is likely, however, that only a small proportion of this will be economically viable. Options might also be limited by the need to ensure reliable supplies at all times. It is expected that the majority of GM's future electricity demand will still be met from the National Grid. National action will be required to decarbonise central generation of electricity by moving away from coal and gas fired generation. With increased use of electricity for both heat and transport the local electricity network has a key role to play. This study suggests that the electricity distribution network within GM has the capacity to accommodate new demand although some areas have limited spare capacity and growth of decentralised renewables, electrification of heat and increased use of electric vehicles will all pose significant future challenges.

2.22 GM has seen increasing deployment of low carbon and renewable technologies in recent years, supported by national policy and subsidy such as the Feed-in-Tariff and Renewable Heat Incentive. There remains significant technical potential for further deployment in support of GM carbon targets. The technologies with the highest technical potential to contribute to a new, low carbon energy system in GM include district heating, individual electric heat pumps, bio-fuels and solar technologies for both hot water and electricity.

2.23 Technical potential is the starting point for identifying economically feasible routes to maintain security of supply and meet decarbonisation targets. New networks will need to be built for district heating. These can be sized to ensure that maximum demand can be met. In contrast, increased deployment of electric heat pumps is likely to require reinforcement of electricity networks with associated cost and disruption. Solar technologies have the potential to make a significant contribution in summer months but are unlikely to provide the energy needed at times of peak demand during cold winter months. Storage of heat and battery storage can transfer energy between seasons at a cost; the solutions for heat and electricity are different.

2.24 New development within GM provides the opportunity to act as a catalyst for low carbon energy infrastructure. Local policy including that to be defined within the emerging Greater Manchester Spatial Framework can support low carbon transition and devolution presents an opportunity for GM to be a low carbon innovation leader.

Energy Path Network

2.25 The project uses a modelling tool to show what Bury domestic energy supply and usage will looks like as the energy supply grid aims for decarbonisation by 2050. It will show what types of heating systems will be more appropriate where and where we should target energy efficiency retrofit schemes – it will

also look at what the implications will be for the energy supply companies in terms of the impact on their distribution network.

Greater Manchester Digital Infrastructure Update Report

2.26 A report was presented to the Greater Manchester Combined Authority on 16 December 2016 to provide an update on the current position with fixed line digital infrastructure in Greater Manchester including:

- The progress of delivery of superfast broadband in Greater Manchester (which provides speeds of up to 30 Mbps).
- The current level of take up of superfast services;
- Proposed market investment in ultrafast and fibre connections recently announced by BT Openreach and Virgin Media.
- A summary of the Digital Infrastructure Investment Fund proposal announced in the Autumn Statement.
- Actions for Greater Manchester to accelerate investment.

2.27 The report concludes that evidence confirms that Greater Manchester's broadband connectivity is in a similar position relative to other UK cities – but in a poor position relative to our peer Cities internationally. A pathway needs to be developed working with the market and leveraging intervention opportunities, including the Digital Infrastructure Investment Fund, to ensure our businesses and communities have access to fibre connections as quickly as possible, as well as stimulating the take up of those services.

2.28 In particular, there is a need to work with BT Openreach and Virgin Media and other providers to make the case for GM to leapfrog from "superfast" to Fibre to the Premises (FTTP) infrastructure. This is because there is a significant risk that wide implementation of "ultrafast", whilst satisfying short term demands, will delay the investment in fibre we need to realise our ambition to become a top 20 global digital city.

2.29 In this context there are a number of practical actions that can be taken to accelerate this investment. This includes:

- Putting forward a compelling vision for providers about how GM public sector reform and the levers of control we have through devolution will drive early demand for full fibre infrastructure.
- Strengthening demand evidence, particularly across our business base, for very high speed services - working with providers to promote the availability of high speed services (e.g. building on successful projects to working with residential landlords and business parks).
- Maximising take up of existing superfast broadband services across GM, supported through improvements to digital skills.
- Minimising the barriers to implementation including:
  - Use of blanket wayleave agreements to speed up access to premises.

- Streamlining the highway works approval process
- Giving providers early sight of new development sites so that they can be included within investment plans.

3 Local Profile

3.1 This section sets out a broad profile of the Borough in terms of energy and physical infrastructure. It looks at the main influences and challenges to help identify the key issues that the Local Plan will need to address and covers the following:

- Renewable and Low Carbon Energy;
- Fracking;
- Digital Communications Infrastructure; and
- Utilities Infrastructure.

Renewable and Low Carbon Energy

3.2 Increasing the amount of energy generated from renewable and low carbon sources such as wind, water and solar will help the UK maintain a secure energy supply and reduce the cause and effects of climate change through the reduction of carbon emissions. It will also have economic benefits arising from business investment in renewable and low carbon energy technologies.

3.3 The NPPF explains that all communities have a responsibility to help increase the use and supply of renewable and low carbon energy. However, the Government is clear that this does not mean that the need for renewable energy overrides environmental matters and the legitimate planning concerns of local communities.

A requirement for the Local Plan to consider the potential for renewable and low carbon energy generation

3.4 The Government's Planning Practice Guidance requires that when drawing up a Local Plan local planning authorities should initially consider what the local potential is for renewable and low carbon energy generation in their area and, in doing so, should consider matters including:

- the range of technologies that could be accommodated and the policies needed to encourage their development in the right places;
- the costs of many renewable energy technologies are falling, potentially increasing their attractiveness and the number of proposals;
- different technologies have different impacts and impacts can vary by place;
- the UK has legal commitments to cut greenhouse gases and meet increased energy demand from renewable sources. Whilst local authorities should design their policies to maximise renewable and low carbon energy development, there is no quota which the Local Plan has to deliver.

Hydraulic Fracturing (Fracking)

3.5 Hydraulic fracturing, or fracking as it is commonly known, is a term used to describe the process of extracting oil and natural gas by the fracturing of underground shale deposits.

3.6 The Government believes that shale gas has the potential to provide the UK with greater energy security, growth and jobs and encourage safe and environmentally sound exploration to determine this potential.

3.7 However, public concern over the potential impacts arising from fracking means that it has become a highly controversial and divisive issue particularly in terms of the potential environmental impacts and the principle of investing in fossil fuels rather than renewal sources of energy.

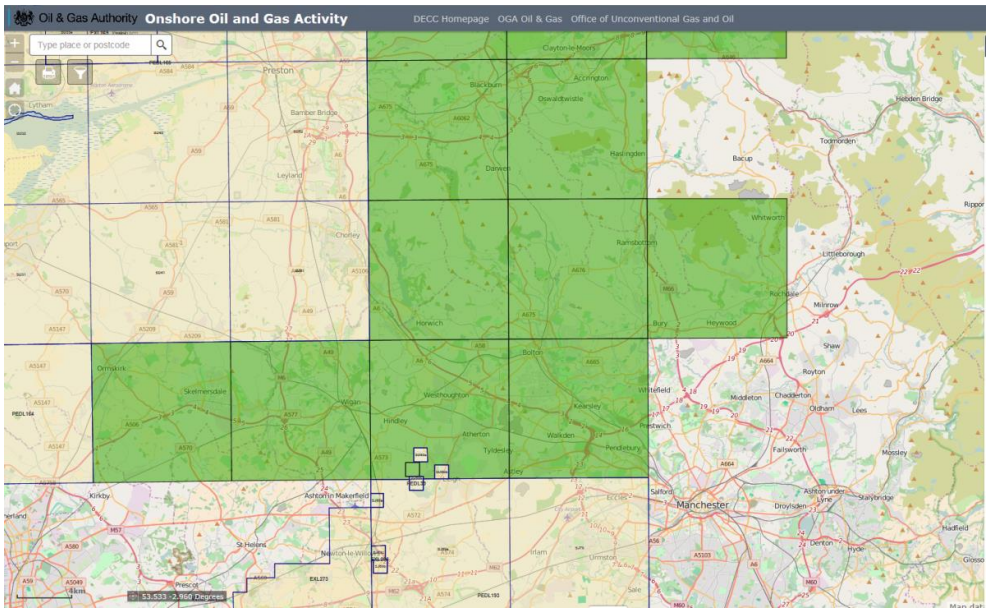
3.8 Scientists from the British Geological Survey have estimated that there is a significant volume of gas deposits in the north of England.

Potential shale deposits within the Borough

3.9 On 17 December 2015 the Oil and Gas Authority (OGA) announced that it had formally offered licences under the 14th Onshore Oil and Gas Licensing Round. These licences related to 159 'blocks' across the country enabling successful applicants to explore the potential for shale gas within these blocks.

3.10 It can be seen from Figure 1 that some of these blocks cover parts of the Borough, including land in the north (Bury town centre to Ramsbottom) and a large part of the south of the Borough (Radcliffe and parts of Whitefield and Prestwich).

Figure 1 - Blocks Granted Licences for Exploration of Shale Gas in the Bury Area



Digital Communications Infrastructure

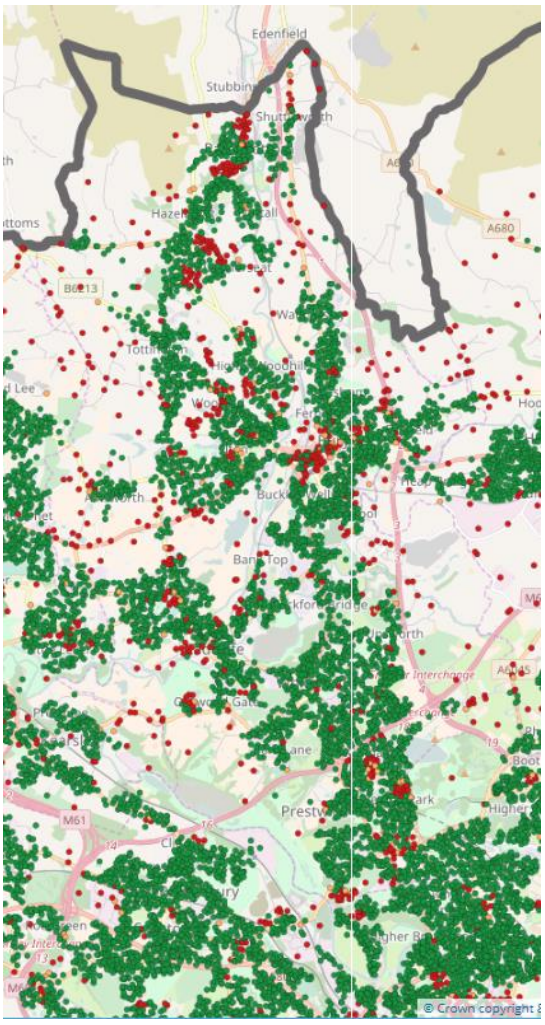
3.11 Provision of high speed quality digital infrastructure is considered a key requirement of attracting business and investment and is now a key component of everyday life.

3.12 The NPPF states that in preparing Local Plans, local planning authorities should support the expansion of electronic communications networks, including telecommunications and high speed broadband.

3.13 Figure 2 reflects Ofcom's 2014 data on fixed network connections by postcode. It shows that large parts of Bury's urban area have more than 66.6% of premises with access to superfast broadband although there are pockets within the urban area are more rural villages where less than 33.3% have access.

Some areas of the Borough have relatively poor access to superfast broadband services

Figure 2 - Fixed Network Connections by Postcode (Ofcom 2014)



- Less than 33.3% of Premises
- 33.3 to 66.6% of Premises
- More than 66.6% of Premises

Utilities Infrastructure

Water Supply

3.14 United Utilities (UU) supplies drinking water to homes and businesses in the North West, and is responsible for statutory provision of new connections to the water network within the region. Developers are responsible for the cost of connection, including new water mains, reinforcements and diversions if necessary. United Utilities can also raise infrastructure charges for new connections which contribute to the costs of local system enhancement which may be needed as a result of the extra demand new premises may impose on the water and sewerage network.

3.15 In Bury the bulk of the water supply to the Borough comes from the Haweswater reservoir in the Lake District via Haweswater Aqueduct and Woodgate Hill Water Treatment Works and a variety of connections on the Manchester Ring Main. There are some supplies from Wayoh Water Treatment Works which primarily feeds Tottington and parts of Ainsworth. The northern areas of the Borough such as Holcombe and Ramsbottom receive a mixture of Haweswater and Haslingden Grane Water Treatment Works supplies.

3.16 UU have recently completed a new bi-directional pipeline, known as the "West-to-East Link", between Merseyside and North Manchester. The pipeline runs between Prescot Reservoirs to the East of Liverpool and Woodgate Hill Reservoirs to the East of Bury. This will help maintain adequate supplies to Greater Manchester or Merseyside in the event of needing to temporarily reduce supply from a major reservoir, for example due to maintenance work or drought conditions.

3.17 The "West-to-East Link" will help to meet future demand requirements, transferring water in the summer from Cheshire and Merseyside to Manchester to replace the reductions in water source yield from the Lake District and Pennine supplies. It will help maintain security of supply to customers and address the long-term challenges arising from the European Union Habitats and Water Framework Directives and from climate change. The link will also provide an adequately integrated resource zone beyond 2015 and will reduce the risk of loss of supply due to asset failure.

3.18 United Utilities' Water Resources Management Plan 2015 specifies that with the current levels of water efficiency promotion, pipe leak detection and repair and providing water meters to customers free of charge continuing up to 2040.

Wastewater Treatment and Disposal

3.19 Public water supply and waste water treatment is the responsibility of private companies. Local Authorities are encouraged to work closely with these companies, particularly in infrastructure planning and location of new

development. It is known that the sewer network in parts of the Borough is at capacity and additional development would require new infrastructure to prevent increased risk of sewer flooding.

3.20 Waste water from Ramsbottom, Tottington, Bury and Whitefield is treated in Bury WwTW at Blackford Bridge, whilst Radcliffe and Prestwich are served by Bolton WwTW at Ringley Fold. Future development proposed in Bury will require consultation with United Utilities Developer Services in order for them to understand network connection points for foul drainage to confirm that there are no capacity issues.

Electricity

3.21 The connection point to National Grid's network is at Kearsley Grid Supply Point. From Kearsley there are two 132kV circuits which feed Bury Bulk Supply Point (BSP) which is just north of Bury Town Centre.

3.22 Bury BSP feeds several primary substations in the town including Chamberhall, Bury Town Centre, Woolfold and Dumers Lane. There is a mixed 11 & 6.6kV High Voltage network in Bury fed from the primary substations.

3.23 Local distribution substations transform High Voltage to Low Voltage and there are approximately 100 of theses substations in the Borough. Prestwich is fed from Prestwich Primary 33/6.6kV substation, which is fed from Kearsley Local 275/33kV Grid Supply Point (GSP). Radcliffe is fed from Radcliffe 132/11kV substation, which is again fed from Kearsley 132kV GSP. Ramsbottom & Whitefield are fed from the Bury network as above.

3.24 There are areas within Bury (Bury town centre and northern part of the Borough) where the electricity utilisation loads are at +90%. Demand for electricity is likely to increase as there will be a move away from gas for heating and increased demand from electric vehicles.

Inadequate capacity within utility infrastructure

3.25 It is estimated by the National Grid that there will be 1 million electric vehicles on UK roads by 2022 and therefore it will be important that we increase the infrastructure for electric vehicle charging both on and off road. There is a major challenge around provision of home charging points for properties that don't have off road parking.

Gas

3.26 The gas transmission and distribution system in the UK is owned and operated by National Grid and comprises three main tiers: gas travels from the National Transmission System (NTS) to the Local Transmission System (LTS) and reaches most consumers via the distribution system. The majority of customers are supplied from the below 7 bar distribution network, although some very

large users, including big CHP plants, will receive their gas from high pressure networks or directly from the National Transmission System.

3.27 The National Grid Gas Transportation Ten Year Statement 2016 sets out an assessment of future energy scenarios for gas states that peak supply capacity is much higher than peak demand and forecasts that in scenarios with a lot of renewable generation gas-fired plant has lower utilisation but still provides back-up when wind generation is low.

3.28 Although gas supply is not an issue, distributed generation may be, because it involves the connection of a smaller number of biogas or CHP (if gas) engines to the local distribution networks. National Grid consider that significant investment in such capacity may be required depending upon the rate of development of new sources of gas and the requirement upon National Grid to fund such connections.

Waste Disposal and Recycling

3.29 Traditionally, Greater Manchester has relied upon landfill to dispose of wastes which have largely been exported out of the conurbation. However, as a result of European legislation and government targets, a range of waste management facilities are now required for recycling, composting, treatment and recovery. Sufficient landfill capacity is also required for final residues following treatment and recovery.

3.30 The GM Waste Plan identified sites for energy recovery, non-hazardous waste disposal, hazardous waste disposal and confirmed capacity for recycling and composting.

European legislation and Government targets require a range of waste management facilities

3.31 The Borough has a landfill site of regional importance at Pilsworth. It also has two Household Waste and Recycling Centres, at Every Street, Bury and Cemetery Road, Radcliffe, plus a number of mini recycling centres around the Borough.

3.32 All Greater Manchester authorities have agreed to a target of 50% of all waste to be recycled by 2020. Table 1 shows that the rate of recycling and composting in the Borough has steadily increased over the past six years and estimates for 2016/17 indicate that this target will have been achieved.

Table 1 - Bury Council Recycling Rates 2002-2017

Year	Dry recycling (%)	Composting (%)	Recycling rate (%)
2002/03	6.06	0	6.06
2003/04	7.2	2.01	9.21
2004/05	10.63	8.06	18.69
2005/06	14.14	9.09	23.23
2006/07	12.98	9.93	22.91
2007/08	15.87	10.49	26.36
2008/09	16.49	10.61	27.10
2009/10	16.26	11.53	27.29
2010/11	15.88	8.38[1]	24.26
2011/12	20.14	16.70	36.84
2012/13	24.23	19.62	43.85
2013/14	22.39	20.50	42.89
2014/15	23.62	22.95	46.57
2015/16	24.61	24.45	49.06
2016/17	TBC	TBC	Est. 52%

[1] The fall in the composting rate was the result of a legislation change. Around 2500 tonnes of green waste was not classed as being recycled although in fact it was used to improve agricultural land and therefore did not go to landfill.

4 Summary of Key Issues

4.1 The various Topic Papers sitting behind the Local Plan are available on the Council's web site at www.bury.gov.uk/localplan. These have drawn together a profile of the Borough which has, in turn, highlighted a number of Key Issues for the Local Plan to consider. These Key Issues are as follows:

Key Issues for Energy and Physical Infrastructure:

- A requirement for the Local Plan to consider the potential for renewable and low carbon energy generation.
- Potential shale deposits within the Borough.
- Some areas of the Borough have relatively poor access to superfast broadband services.
- Inadequate capacity within utility infrastructure.
- European legislation and Government targets require a range of waste management facilities.