Eco Bicester Project Team

Report of Utilities Audit

July 2011

Introduction

The purpose of this report is to present the findings of an audit of utility services provision in Bicester. It has evolved from work carried out as part of the preparation of the Cherwell Draft Core Strategy (February 2010) which sets out an overview of strategic allocations and associated infrastructure requirements. The meeting of the employment working group is October 2010 agreed and requested that the Project Team lead a review of existing utilities infrastructure provision following reports from local businesses that inconsistent power supply, in particular, was an issue and resulting in businesses looking to relocate from Bicester.

Background

The employment group was set up to deliver the employment workstream as part of the eco Bicester Project. The Group first met in April 2010. Existing utilities, services and infrastructure provision has been a recurring issue for the Group.

The LDF evidence base includes work to progress the preparation of an infrastructure plan identifying the requirements to provide utilities to the strategic site allocations including NW Bicester.

A Cherwell Employment Land Review (ELR) was completed by URS in 2006. It did not include utility capacity and supply/servicing/provision in the assessment of strategic sites. The ELR does not refer to existing utility provision to employment sites, nor does it ask business to identify utilities as in issue in the questionnaire.

Some of Bicester's employment areas are now outdated and were not built to modern requirements in terms of power distribution and usage. For example, Telford Road/ Launton Road, Granville Road, Murdoch Road industrial estates/business parks where much of Bicester's employment land is currently located are reportedly experiencing power issues affecting occupiers.

The Eco Bicester One Shared Vision aims to deliver the required infrastructure to support growth in Bicester. It promotes sustainable development in terms of water use, waste and energy.

As part of the preparation of the economic strategy to support the proposals for the first phase at NW Bicester, SQW contacted a number of local businesses to find out more about the current position of the local economy. In citing a wish to relocate from Bicester several businesses referred to existing power issues as a reason to relocate from the town.

Following the meeting of the Employment Group in October 2010, it was agreed that the Project Team would lead further work to investigate the existing infrastructure serving Eco Bicester.

The Draft Cherwell District Council Core Strategy February 2010 includes an emerging infrastructure plan and sets out the infrastructure requirements to deliver major development schemes in the District as part of the Local Development Framework (LDF). The Oxfordshire Strategic Planning and Infrastructure Partnership (SPIP) has also been working on the delivery of infrastructure projects as part of the wider development strategy.

From discussions with business representatives at the various meetings it was made clear that there had been an issue with existing companies looking to relocate from Bicester due to various issues including primarily inconsistent and unreliable power supply in the town.

Aims and objectives

In summary the aims and objectives are as follows:

- To review the current position in terms of utility services and infrastructure, particularly power (electricity) and water
- To understand the issues and comments made local businesses
- To understand issues relating to: Energy supply, capacity and demand
- To focus on issues particularly relating to power and the impact on business and industry
- To contact the relevant operators and update the current position focussing on electricity, gas and water utility companies
- To understand the existing constraints on the utility network, energy and National Grid – energy production/generation
- To collate existing information and use it to identify future infrastructure requirements
- To report back to the SDB

Methodology

As part of the work a review of existing correspondence and contacts with utility companies was undertaken. This included existing contacts through LDF consultation exercises and specific consultations on Bicester. As part of the audit a review of the previously submitted responses to the LDF consultation was carried out.

As part of the audit process meetings and conversations with the following utility companies were undertaken:

- Telephone conversation with National Grid's Land and Development Stakeholder and Policy Team on 15 March 2011
- Meeting with Scottish and Southern Electric Power Distribution (SSEPD) team representatives at the SSE Oxford Depot on 14 April 2011 led by Chris Gaskell, Network Development Planner.
- Discussion and correspondence with Thames Water (Mark Matthews, Head of Town Planning (Acting))
- Various conversation and correspondence with Southern Gas Networks contacts including Leigh Keagan (Network Support Manager – Third Party Connections), Adam Swaine (SSE Pipelines - telephone conversation on 13 June 2011) and David Simpson (Head of Strategic Planning, SGN – telephone conversation on 10 June 2011)

- Follow up work on Broadband delivery as part of the Oxfordshire Broadband Delivery UK (BDUK) Project.

Bicester Vision circulated a request for more information on the service provided by utility companies and particularly evidence to support the claims and perception that there was an issue with power supply that was causing businesses to relocate to other areas and Bicester being perceived as uncompetitive and not "open for business". As a result of Bicester Vision's request, responses were received from two businesses (BGP and Wirth Research) which were used as evidence in meeting representatives of the utility companies. As a follow up to the request for information the Managing Director of Wirth Research was contacted to confirm the reasons for relocating.

Electricity - Scottish and Southern Electric

The Office of Gas and Electricity Markets (OFGEM), Distribution Quality of Service Report, published in December 2009, identified SSE's Southern Electric and Scottish Hydro Electric networks as the two most successful electricity distribution companies in Great Britain. This reflects the investment in the automation of the networks and effective operational responses to electricity supply interruptions. In 2009/10, on average, its customers received a supply of electricity more than 99.99% of the time (source SSE website).

The paragraphs below set out the main issues affecting SSE's core business. Further information can be found on the SSE website at: www.sse.com

Meeting Bicester's future energy needs

Maintaining safe and reliable supplies of power, and restoring supplies as quickly as possible in the event of any power cuts is the key responsibility for the electricity supply and distribution companies. There are two main aspects to this: Ensuring that the power company has access to sufficient generation such that it can supply electricity to all its customers and running the network well so that power can flow to homes and businesses with maximum reliability.

The power companies are working to ensure that they are producing the right amount of the right type of electricity. The focus is on running the network in a way that ensures safe and reliable electricity supplies. Electricity is so fundamental to our everyday lives in the UK that when for any reason supplies are lost, it is a great inconvenience. SSE are acutely aware of the importance of minimising the number and duration of power cuts experienced by its network customers. Capital expenditure in the SSE electricity networks during 2009/10 was £334.5m. This builds on the previous year's investment of £314.6m.

SSE, along with a variety of other industry stakeholders, regularly engages with Government departments to discuss energy policy proposals in detail to try and ensure that the overall framework for the UK energy market is improved and that policies deliver their objectives effectively. There are three major areas of the energy market on which policy is focussed:

1. Generation - how electricity is produced

2. Networks - transporting electricity and gas around the UK

3. Supply - supplying electricity and gas to consumers in the UK

SSE supplies electricity and gas and related services to around 10 million customer accounts in markets in Great Britain and Ireland. Its role as a supplier of electricity and gas to customers is to produce the electricity and gas they need, and arrange for it to be distributed to them through the relevant networks, provide services such as metering and billing and promote efficient use of energy.

SSE has an ownership interest in five of Great Britain's electricity and gas networks. Energy (electricity and gas) transmission and distribution companies like these are natural monopolies, serving defined geographical areas. In Great Britain, they are subject to economic regulation through a Price Control set by OFGEM. It is anticipated that the UK will need to invest significantly in its networks between now and 2020 in order to upgrade and extend the current system to adapt to changes such as: the increase in the amount of renewable and decentralised sources of energy wanting access to the grid; the introduction of smart meters and electric vehicles; and the development of an offshore electricity grid. In discussion with Network Development Planner at the SSE Oxford Depot, it was accepted that there will have to be investment in the networks to meet the needs of future demand.

As a major network operator SSE has an interest in the electrification of transport and the challenges that this will present both in terms of increased demand for electricity, and how this increased demand will be balanced on the electricity network. SSE's main involvement in this area is in the development and installation of the electricity infrastructure required to support the mass introduction of Electric Vehicles (EV's). SSE is involved in the electric vehicle trial in partnership with BMW-MINI, Oxford Brookes University and the South-East England Development Agency in and around Oxford, with 40 all-electric 'MINI-E' cars. SSE installed domestic charging facilities at the homes of all of the drivers, as well as public charging within the trial area to allow drivers to recharge when they are out. Smart Meters were also been installed at driver's homes in order to gather and monitor usage data.

Audit Results

Following contact with Chris Gaskell of SSEPD and verbal confirmation that there was not an issue with the existing power supply to Bicester, a meeting was held with representatives of SSE to discuss in more detail. The meeting took place on 14 April 2011 and a copy of the minutes is contained in Appendix 1. The evidence provided by the two local businesses was used in discussion with the electricity company.

Although power was a reason for Wirth Research relocating to Banbury, it was pointed out that there were other reasons for the business's decision to move and this was acknowledged. In summary, the existing power supply is adequate to meet the needs of the existing town but will require reinforcement as the town continues to grow. The performance of the distribution network is high with only a few minor faults reported. SSE has not received any complaints from local businesses in the last 12 months.

Summary

- The current position in terms of power supply and distribution has been reviewed with the relevant teams at SSE included the network development manager and distribution manager.
- SSE has not received any complaints about the existing network

- Two businesses responded with concerns about power supply which have subsequently been resolved.
- Power supply in Bicester is not a major issue however, there appears to an issue with individual commercial properties and the businesses occupying in terms of the agreement and communication with the electricity company.
- Further reinforcement of the existing network is likely to be required over the next 10 years requiring investment in infrastructure to respond to the changes in supply and demand predicted by the electricity industry.

Gas – Southern Gas Networks

After contacting Southern Gas Networks and SSE Pipelines Company, a brief summary of the current position was provided which forms the basis of the paragraphs below.

Background information

There are four distribution networks (DN) in the UK of which Scotia (Southern) Gas Networks is one. Southern Gas Networks and Scotland Gas Networks operate in their respective locations as part of Scotia Gas Networks. It is the primary transporter in both Scotland, the South and South East with 5.7 million customers. “Shippers” provide customers with gas and “transporters” ferry the gas on behalf of the “Shippers” to the shippers’ clients.

Southern Gas Networks covers the south and south east of England. Formed in June 2005, it has three shareholders consisting of UK based SSE plc (50%) and two Canadian pension funds, Borealis Infrastructure Management Inc (25%) and Ontario Teacher's Pension Plan Board (25%). Southern Gas Networks aspires to be the leading operator of gas networks in the UK. SSE is one of the largest energy companies in the UK. It is involved in the generation, transmission, distribution and supply of: electricity, energy trading, the storage and supply of gas, electrical, environmental and utility contracting, domestic appliance retailing and telecoms.

OFGEM awards licences to ship gas to Independent Gas Transporters (IGT's) who connect into SGN's systems and own and operate their own systems. IGT's will typically also try to lay water, electricity and telecommunications / fibre optics as this will drive their costs down as the monies can be recouped later. As such some installations may be free. End Users and/or shippers can approach DN's or IGT's to quote and lay infrastructure, mains and services to their premises from the respective transporters infrastructure, typically the nearest one, but it is subject to cost. Once the infrastructure has been connected the shipper will then pay the respective transporter a sum to ferry the gas.

Infrastructure to an end user’s property from the nearest transporter can be designed and laid by Utility Infrastructure providers (UIP's) who take the customers money but have no licence to transport gas. Upon completion of their works the mains, service and associated plant are invested with either the DN or IGT.

Southern Gas Networks also have an ongoing mains replacement programme to decommission iron gas mains every year and part of this programme is likely to involve significant investment within the Bicester area. Indicatively, over the next 5 years, approximately 18 km of iron gas mains will be decommissioned.

Audit Results

SGN and SSE (Gas) are aware of Bicester's potential to accommodate further high levels of growth and as a result the utility companies are taking into account proposals for future development in planning the gas distribution and supply network. The utility company is facing similar issues in other local authority areas (Aylesbury Vale District Council and Milton Keynes Council were given as examples) where they are working in partnership to delivery the required infrastructure through the development plan process.

It is understood from SSE Pipelines that the network has been reinforced to accommodate the South West Bicester "Kingsmere" development and initial discussions with the developers of North West Bicester have taken place. All requests from either IGT's for a connection location from SGN system with a pressure or a UIP with a design for adoption are required to be approved by the network development team. SGN also undertake checks to ensure that the existing infrastructure can cope with the additional loading. The gas company through its strategic planning function works to identify requirements for specific reinforcement of the network. SGN will fund some reinforcement works depending on the circumstances.

In some cases additional costs will be sought from the party requesting the works. From SGN's perspective, it is far better to promote development areas to a UIP or IGT and get firm quotations for the works. `Land Enquiries' are just as time consuming, not contractually binding and may be misleading as any sums of money highlighted may be funded by SGN. Bicester is relatively well integrated as far as transportation of gas is concerned. Contacts at SGN and SSE Pipelines have welcomed the opportunity to work with the Eco Bicester Project Team and its partners and continue discussions on the gas supply, distribution network and infrastructure requirements as part of the delivery of the Eco Bicester One Shared Vision.

Summary

- Gas supply and infrastructure provision was not raised as a major issue when embarking on the audit
- The LDF Infrastructure Plan as part of the Draft Core Strategy sets out the requirements
- There have been no recent responses to the Cherwell LDF consultations from the gas companies and gas industry generally
- Reinforcement of the network is taking place as part of the SW Bicester Kingsmere development
- No complaints have been received from local businesses and Bicester Vision has not raised concern about gas issues in Bicester
- The gas company are willing and eager to engage in further discussions to progress proposals for the future growth of Bicester.

Water – Thames Water

Thames Water (Thames Water Utilities Limited) is the UK's largest water and sewerage company. It is the private utility company responsible for water supply and waste water treatment in Bicester. Every day, it supplies 2,600 million litres of tap water to 8.8 million customers across London and the Thames Valley. It carries out

over 400,000 tests per year to ensure our drinking water meets stringent UK and European standards. It also removes and treats 2,800 million litres of sewage for an area covering 14 million customers. Its 350 sewage treatment works include several that create renewable energy, making Thames Water the biggest generator of 'green power' within the M25. Thames Water has delivered a renewable gas scheme at Didcot sewage works. For example, in October 2010 it, and its project partners Scotia Gas Networks and British Gas, fed renewable gas – derived from sewage sludge – into the UK gas supply network for the first time in UK history. The Secretary of State for Energy and Climate Change praised the scheme as a significant step towards Britain becoming a low-carbon economy. A detailed review of Thames Water's performance over its whole region is available on its website at: www.thameswater.co.uk

Audit results

The trunk network feeding Bicester has recently been improved with a new main installed to the Eastern/North Eastern edge of the town (currently being commissioned at May 2011) which has completed a ring main around the town. This network upgrade does not take into account the possibility of the proposed eco development at NW Bicester and as such this will have to be considered separately. Thames Water has been actively engaged in the consultation process both as part of the preparation of the Local Development Framework and in individual planning applications for example the planning proposals for the first phase of North West Bicester. More recently, the Project Team has engaged with Thames Water representatives in establishing and understanding the issues.

The following comments were received from Thames Water in its response of 8 June 2010 to the consultation on the Draft Core Strategy:

As part of our five year business plan review Thames Water advise OFWAT on the funding required to accommodate growth in our networks and at all our treatment works. As a result we base our investment programmes on development plan allocations, which form the clearest picture of the shape of the community. This relates to all new development.

We require a three to five year lead in time for provision of the extra capacity. Where a complete new water or sewage treatment works is required the lead in time can be between five to ten years. New development may therefore need to be phased to allow the prior completion of the necessary infrastructure.

Regarding the funding of water and sewerage infrastructure, it is our understanding that Section 106 Agreements cannot be used to secure water and waste water infrastructure upgrades. However, it is essential to ensure that such infrastructure is in place to avoid unacceptable impacts on the environment such as sewage flooding of residential and commercial property, pollution of land and watercourses, and water shortages with associated low pressure water supply problems.

Water and sewerage undertakers also have limited powers under the water industry act to prevent connection ahead of infrastructure upgrades and therefore rely heavily on the planning system to ensure infrastructure is provided ahead of development, either through phasing or the use of Grampian style conditions.

It is essential that developers demonstrate that adequate capacity exists both on and off the site to serve the development and that it would not lead to problems for existing users. In some circumstances this may make it necessary for developers to carry out appropriate studies to assert whether the proposed development will lead to overloading of existing water and sewerage infrastructure. Where there is a capacity problem and no improvements are programmed by the statutory undertaker, then the developer needs to contact the undertaker to agree what improvements are required and how they will be funded prior to any occupation of the development.

It will therefore be essential that the Core Strategy makes reference to the provision of adequate water and sewerage infrastructure to service all new development and to avoid unacceptable impacts on the environment (such as sewage flooding of residential and commercial property).

The following paragraphs set out the Thames Water response to the Eco Bicester utilities audit:

Sewerage network: Several outlying villages suffer from high infiltration rates which can affect Bicester Town's network capacity in localised areas. However there are no current significant capacity constraints on the network. In terms of future growth, our key concern is to ensure that the Eco town proposals are planned and phased to ensure any additional infrastructure capacity requirements are in place ahead of development.

Sewage Treatment: There are ongoing works to improve the treatment capacity at Bicester STW to meet current requirements, but there are no significant capacity constraints.

Water Resources: There is currently a healthy water resource balance within the catchment.

Despite the positive comments from Thames Water, the Eco Bicester Project Team working with Environment Agency has identified several issues relating to the future supply and treatment of waste water as new development comes forward. These and similar issues raised by British Bakels are summarised as follows and will be the subject of further discussion with Thames Water and the Environment Agency as part of the delivery of Eco Bicester:

- An extensive foul water network serves Bicester utilising a series of pumping stations to reach the treatment works. Early indications are that it is likely that there is insufficient capacity within the Thames Water existing infrastructure to service a large development; however, further consultation with the relevant parties are being arranged to establish any infrastructure issues for further development.

- Previous work on the proposals for eco development at North West Bicester has indicated that the Thames Sewage Treatment Works does not have sufficient capacity to serve the whole eco development, based on conventional discharge rates. Thames Water has advised that modifications to or extension of their network may be required to allow connection of parts or the whole of the eco development and that further investigation by them would be necessary to identify the exact works required.

- The Living in Cherwell Executive Summary July 2009 states that, *"Water resources in Cherwell are already limited and demand from new housing development in the district may have to be met from outside the Cherwell catchment area."*

Summary

- The relevant contact at the water utility company (Thames Water) have been consulted and a positive response raising no concerns in terms of current water and sewerage services received.
- Further work in partnership with the Environment Agency and Thames Water is required to resolve issues relating to future infrastructure requirements for water supply and waste water treatment.

Broadband

OxOnline is a new project to get the whole county connected to fast, reliable Internet connections and mobile phone reception.

Fast Internet connections and good mobile phone coverage should be considered essential utilities. To many house buyers, broadband access and mobile reception are pre-requisites when choosing a place to live. Without these things it is difficult to set up a home office, stay connected to friends and family or take part in other online activities they may have previously enjoyed. Businesses rely on high-speed Internet connections. Hundreds of small businesses across the county are currently deprived of access to modern communication networks. This is a problem the OxOnline project is aimed at addressing. The government has set up Broadband Delivery UK to administer funding to county councils and local enterprise partnerships to help them and their partners to make sure the right infrastructure is developed to allow faster broadband. To access the funding, OCC is preparing a local broadband plan for the whole county, setting out our vision for the use of digital technology for the future in terms of:

- **Economic Development** – how digital technology can help businesses start up and grow and thus strengthening our local economy.
- **Transformation of public services** – how local authorities and other public sector agencies can deliver more services online, and so make those important efficiency savings.
- **Digital inclusion** – there are more than 92,400 people in Oxfordshire who have never accessed the Internet. We need to encourage them to get online so they can partake in this digital age.

Once funding is secured, the delivery model for Oxfordshire needs to be developed. The county council's Oxfordshire Community Network will play a role as it is infrastructure already in the ground – we need to make it so this infrastructure can be re-used for the benefit of our communities and faster broadband. Oxfordshire County Council is progressing a proposal to develop High speed broadband in the County using the Oxfordshire Community Network. A proposal is to be submitted to BIS in June 2011.

P3Eco and A2Dominion are in discussion with Metropolitan and BTOpenreach respectively to develop the provision of high speed broadband as part of the delivery of NW Bicester and the Exemplar proposals. All Oxfordshire Schools, libraries are currently connected to the OCN, a broadband network that provides access to intranet, email and conferencing.

Summary of key findings

Bicester is served by some of the largest and best performing utility companies in the UK. The issues experienced by some local businesses as reported through Bicester Vision relate primarily to power. As a result of the audit existing contacts with the relevant utility company have been updated and these can be taken forward as part of the preparation of the Infrastructure Plan to deliver the Cherwell LDF.

Electricity

The reported issues appear to have been caused by individual customers putting excess load on the network without the agreement of the electricity company. Some power failures were outside the control of the power company as they were caused by the actions of third parties, for example where a cable was hit. The issues have been resolved and the utility company has expressed a willingness to work with the

Eco Bicester Strategic Delivery Board and individual business to ensure similar issues are avoided in future.

Although some existing business reported issues with power affecting their business the power company confirmed that current supply is meeting the demands of the town. Moreover the utility company has a dedicated team working to maintain the network and resolve power failures when they occur. Many of the issues could have been resolved with the early involvement of the utility (power) company. Moreover there were other reasons for the relocation of the business referred to above, including the need for increased floorspace.

Gas

There are no significant issues with the existing gas supply and distribution network in Bicester. The network is being reinforced as part of the SW Bicester Kingsmere development and similar reinforcement work will be required for future development of the town. The audit has not identified any complaints from local businesses and Bicester Vision did not raise concern about gas issues in Bicester. The gas company are willing to engage in further discussions to progress proposals for the future growth of Bicester including renewable energy.

Water

The water company has responded positively to the audit although some of its comments are in need of further discussion with the Environment Agency and relevant Eco Bicester Project Team lead as part of the delivery of the Eco Bicester proposals. Generally the existing water supply and sewerage treatment facilities meet the needs of the existing town and performance of the network is not a significant issue. Thames Water has invested in a new main to complete the ring around the existing town.

Broadband

From work being carried out by Oxfordshire County Council as part of its OxOnline Broadband project it appears that Bicester has higher than average broadband coverage and competition results in relatively good connection speeds. However in order to meet the aspirations of the Eco Bicester One Shared Vision and standards for eco towns further work will be required to provide next generation access to broadband.

Conclusion

The audit of utilities in Bicester provides a useful baseline for the delivery of Eco Bicester. It has highlighted the complexity of the water, gas and electricity industry when delivering services to its customers. The utility companies are well aware of the issues facing Bicester in the short, medium and long term and are planning the infrastructure requirements in order to accommodate future growth. Some of the major employers have, and to some extent continue to experience constraints, with existing infrastructure and utilities servicing the town. In most cases these can be resolved through discussion with the relevant utility company to agree the individual requirements and provide reinforcement/enhancement as necessary. In delivering the proposals for Eco Bicester, the Core Project Team will continue to work with its partners to ensure the aspirations of the Eco Bicester One Shared Vision are shared with the various utility providers.