STATEMENT IN SUPPORT
OF
APPLICATION FOR PRIOR APPROVAL

June 2017

Arqiva
Crawley Court, Winchester, Hampshire, SO21 2QA

Ref: S026 Royston Lane

EXECUTIVE SUMMARY

The Proposed Development

This application is for the installation of electronic communications apparatus that forms part of Arqiva's planned Smart Metering network. It proposes to relocate an approved development (App. Ref. 2016/1530), namely the installation of telecommunication equipment at High Street, Royston, due to the presence of underground services which means that the equipment cannot be installed at this location as originally planned.

Arqiva is a designated Electronic Communications Code Network Operator and has been appointed by the Department of Energy & Climate Change to develop the Smart Meter infrastructure network in the north of England and Scotland.

The Benefits of the Smart Metering Network

Smart metering is a Government programme to roll out, between 2014 and 2020, smart electricity and gas meters to homes and small businesses across Great Britain. The smart meter initiative is a key part of the Government's programme to cut greenhouse gas emissions, decarbonise the economy and support the creation of new green jobs and technologies.

Smart Meters are the next generation of gas and electricity meters. They will offer a range of intelligent functions and provide consumers with more accurate information, bringing an end to estimated billing. Consumers will have near-real time information on their energy consumption to help them control and manage their energy use, save money and reduce emissions.

By providing these benefits it's argued that the development assists in achieving the goals of sustainable development. This is in accordance with the statutory duty placed upon local planning authorities and accentuated by the presumption in favour of sustainable development within the National Planning Policy Framework (NPPF).

Technical and Operational Constraints

The Smart Meter programme, like all electronic communications networks, will need to be supported by an infrastructure of operational sites with the required antennas and other apparatus needed to provide radio coverage to the local area.

As the Smart Meter network must be able to communicate with meters that are typically found in the heart of a property, for example, in an under stairs cupboard, then the sites must be developed in locations that can provide the required level of coverage.

Site Selection

In accordance with best practice site sharing, utilisation of existing buildings and structures has been explored in a sequential approach to best meet the operational need whilst minimising environmental impact. In this case, it has not been possible to share an existing electronic communications site or install antennas on a tall building or structure. Hence, there is a requirement to develop a new ground based mast.

Pre-Application Consultation

Information on Arqiva's planned Smart Meter network was provided to the Council on 18 December 2013.

Pre-application consultation on the proposal was undertaken with Barnsley Council's planning department, and with the Ward Members – Councillor T. Cheetham, Councillor M. Clements and Councillor C. Makinson. Councillor Clements responded to the consultation and subsequently there was an exchange of emails relating to pedestrian access. Lines of communication will remain open throughout the application process should local stakeholders wish to engage further.

Compliance with Planning Policy and other Material Planning Considerations

Policy at national level is set out in the NPPF. The NPPF views high quality communications infrastructure and systems, such as the coverage provided by the Smart Meter network, as essential for achieving sustainable development objectives.

The relevant Development Plan includes the *Barnsley Unitary Development Plan* (adopted December 2000). In review of its policies, the application demonstrates that the proposal is in accordance with the Development Plan and in particular *Policy UTL5 Telecommunications.* The site does not fall within any particular land allocation or statutory designation.

All reasonable steps have been taken to minimise any perceived visual and environmental impact whilst having regard to the need to provide the required level of radio coverage for the network.

With regards to design, layout and scale, this has been guided by the special technical and operational requirements that are associated with electronic communications development. Good practice guidance requires careful consideration of the siting and design to minimise appearance and to ameliorate potential visual impact.

In addition, consideration has been given to the need for the development being in the wider public interest and an appropriate balance has been struck between the objectives of developing new high quality communications infrastructure and environmental considerations. It is considered that on balance the proposal offers greater benefit than harm and therefore should be acceptable in principle.

ICNIRP Compliance

The proposed antennas comply with all relevant health and safety requirements in accordance with ICNIRP guidelines. A certificate of compliance has been provided with this application.

Servicing and Maintenance

The site will require periodic access for maintenance and servicing visits. This will be restricted to authorised personnel only, and therefore the proposal does not give rise to any issues associated with public access.

In conclusion, the proposed development has been sited and designed with reference to pre-application consultation in order to locate the development as sensitively as

practicable. Specific consideration has been given to technical requirements and national and local planning policy. The proposal is supported by both local and national planning policy, and as such it is considered that the application should be looked upon favourably.

INTRODUCTION

1.1 This statement is submitted in support of the application made in respect of a development proposed at *Royston Lane, Royston, Barnsley, South Yorkshire, S71 4PJ* as part of Arqiva's planned Smart Metering communications network.

1.2 As shown in detail in the drawings submitted, the development proposes the installation of an innovatively designed radio mast, 12 metres high, which has been designed to blend into the existing street scene. The mast is therefore similar in appearance to a typical street light. One small cabinet is also proposed at street level and again, will not be dissimilar to similar apparatus already found on highway land, such as the control boxes for traffic lights.

1.3 Arqiva is an Electronic Communications Code Operator and so benefits from the right set out in Paragraph 9 of the Electronic Communications Code to carry out street works. The Electronic Communications Code is found at Schedule 2 of the Telecommunications Act 1984, as amended. Arqiva also benefits from the permitted development rights set out under Part 16 of Schedule 2 to the Town and Country Planning (General Permitted Development) Order 2015 (as amended). Hence in this case, the application is made under the Prior Approval procedures set out under Conditions A.2 and A.3 of Part 16.

1.4 In this statement, which incorporates the design and access statement, we go on to highlight the purposes and benefits of the development proposed, to explain the particular need in this case and to demonstrate compliance with planning policy. We also provide information on health and safety and related issues by way of further reassurance.

1. THE PURPOSE AND BENEFITS OF THE SMART METER NETWORK

2.1 The proposed development forms part of Arqiva's planned Smart Metering Network. Smart Metering is a Government programme to roll out, between 2014 and 2020, smart electricity and gas meters to homes and small businesses across Great Britain. The smart meter initiative is a key part of the Government's programme to cut greenhouse gas emissions, decarbonise the economy and support the creation of new green jobs and technologies.

2.2 The Department of Energy & Climate Change has awarded the contract to deliver the radio communications network for Smart Metering to Arqiva and Telefonica. Arqiva will deploy and manage the radio communications network in Scotland and northern England whilst Telefonica will provide the network to the remainder of Great Britain.

2.3 This new national smart metering 'Wide Area Network' is a key project in the UK's National Infrastructure Plan and will form part of the UK's Critical National Infrastructure. Its deployment and timely delivery is particularly important to achieving a sustainable economy and meeting key Government priorities enshrined in the Climate Change Act 2008, and thereby support the transformation to a low carbon economy.

2.4 In due course, the network will also be available to water utilities and in similar fashion, consumers will be better able to understand and make informed choices about their use of this natural resource.

2.5 The proposed development and the wider Smart Metering network will, therefore, make a significant contribution towards sustainable development objectives which will help the UK Government to meet its target of reducing emissions by at least 80% on 1990 levels by 2050 and now set down within the UK Carbon Plan. This is relevant to the statutory duty already placed upon local planning authorities under Section 39 of the Planning and Compulsory Purchase Act 2004 and now accentuated by the presumption in favour of sustainable development

within the National Planning Policy Framework (NPPF). More specifically, it will help to deliver the aspirations set out in Sections 5 and 10 of the NPPF.

2.6 Having regard to the Government's three key dimensions for sustainable development within the NPPF, smart metering will in particular assist in the following ways:

- **An economic role** – smart metering communications will help businesses to be energy conscious, smarter and invest in more energy efficient infrastructure to reduce longer term running costs. Consequential spin offs will, among many, be the creation of new green jobs and technologies, modern and cleaner industries and help stimulate retail sales in more efficient appliances.

- **A social role** - modern smart metering communications will allow consumers to benefit from real time information on their energy consumption, to help them control energy use, save money and reduce emissions. With greater visibility and understanding of their energy consumption, consumers will be able to make more informed choices about which appliances to use and when. For example, a consumer seeing the power consumption of a tumble dryer might be encouraged to use a washing line instead or perhaps to avoid operating it during peak periods of demand when pricing is higher.

- **An environmental role** – smart metering communications will help to reduce energy consumption at homes and premises and allow smarter working practices such as better energy management within larger businesses and incorporation of new efficient infrastructure into new developments. In this way modern smart metering communications will help ensure the prudent use of natural resources, alleviate energy waste, reduce carbon footprints and help the UK Government meet its energy emissions set within the UK Carbon Plan.

2.7 However, in order to make this important contribution to sustainable development objectives, the network has to be developed first and like all electronic communications networks, will need to be supported by an infrastructure of operational sites. This is no different than railway services, for example, being reliant on the associated infrastructure of lines and stations. In the next section, the particular network requirement from which this application stems is explained.

3. THE REQUIREMENT

3.1 Arqiva owns and operates the terrestrial radio and television broadcast networks. The company also owns most of the tower portfolio originally developed by T-Mobile (now part of Everything Everywhere) and have rights and manage other masts, towers and rooftops, developed or otherwise suitable for use for electronic communications. In total, Arqiva has access to over 16,000 sites around the UK, which is considerably in excess of the numbers available to any other electronic communications operator in the UK. Arqiva is also licensed to use the 412-414MHz spectrum that will be used as part of the Smart Meter network.

3.2 Basing the Smart Metering network on this portfolio of existing sites will be a critical element in minimising the potential visual impact associated with the deployment of a new network. This is obviously consistent with longstanding statutory and government policy requirements to use existing sites or other high structures so as to minimise visual impact.

3.3 As the network must be able to communicate with meters that are typically found within the heart of a property, for example, in an under stairs cupboard, then the sites must be located so that they can provide an acceptable degree of coverage to the properties that they serve.

3.4 New installations will be required in some areas for a variety of reasons, for example, the nearest existing sites are too far from certain properties; the signal from the nearest site may be adversely attenuated or affected by topography or natural or man made features such as trees or high buildings; or the fabric of the properties is such that the signals will be unable to penetrate them, for example, because they are old thick walled buildings. Without some new installations a number of homes and businesses would not therefore be able to benefit from smart meters.

Site Selection Process

Radio constraints on site selection

3.5 This proposed new installation has to fit in with the overall plan for the network based around Arqiva's existing sites. To help illustrate the context of this application, a computer generated coverage plot is submitted. Its estimate tends to exaggerate true levels of coverage on the ground because the modelling only takes broad account of general topography and manmade features. However, it is a useful tool for explaining how the new installation will fit into the network in the wider area.

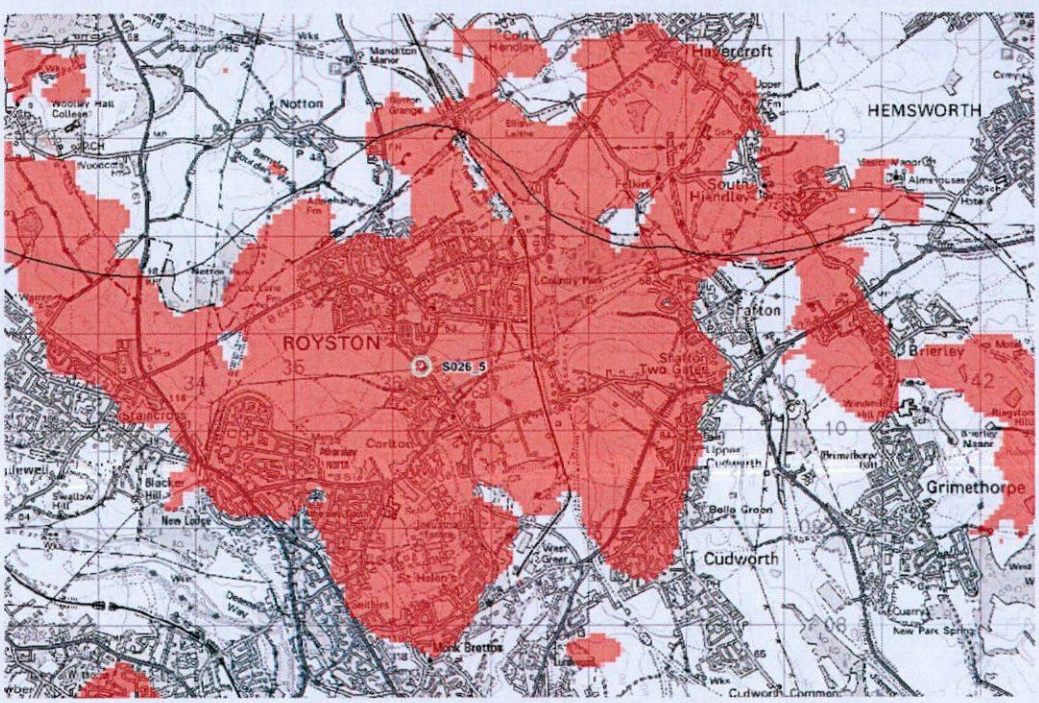


Figure 1. Extract from radio propagation charts showing indicative coverage from proposed cell S026.

3.6 The area within which a base station can be located must be carefully selected to ensure that base stations compliment and not interfere with each other. The proposed cell needs to be close enough to neighbouring cells to provide them

with supplementary coverage, while at the same time it needs to be sited at a location that will allow it fill identified gaps in coverage.

3.7 The search area represents the weighted mid points of population density that need to be served. Any sites located too far away from the application site are likely to be rejected by our client for radio planning reasons, specifically because the site would be too close to neighbouring cells and would not provide coverage to all of the targeted area.

3.8 Furthermore, a site too far away from the areas which the base-station is to provide coverage to, may require a mast that is higher and of greater scale than the 12m high pole proposed at the application site. This would result in greater potential for adverse landscape and visual impact.

Topographical and land use constraints on site selection

3.9 Local topography, land uses and other features can often mean that parts of a search area have constraints which make them unsuitable to accommodate a mast.

3.10 When establishing a new ground-based telecommunication mast, there is a set of criteria that a site may be assessed against to ensure effective operation, these include:

- Highway verge/pavement being sufficiently wide to prevent pedestrian obstruction;
- Easy access to a BT hard-wire for data transmission;
- Installation of apparatus not presenting issues with highway visibility splays;
- Presence of underground services restricting which parts of the highway can be excavated;
- Potential for nearby trees and high-buildings to corrupt radio signal.

3.11 Furthermore, sites that are in full and near view of residential properties were treated as less favourable because of potential impact on the amenity of residents. Large parts of the local area has dense patterns of residential development which severely limited the number of potentially suitable sites.

3.12 Land elevation was also a factor that informed site selection. Siting the proposed mast on land that has a lower elevation than that achieved at the application site may require a compensatory increase in mast height to ensure effective radio operation. In particular, ground elevation at the application is approximately 60m high, whereas to the north of the site it decreases to as low as 50m.

3.13 When the application site is assessed against the constraints and criteria discussed in this section, it is found to be acceptable.

Exploring the use of an existing mast, building or other structure

3.14 A search of the Sitefinder database, maintained by Ofcom and the most comprehensive of all electronic communications sites, found existing telecommunication sites in local area. However on assessment all were found to be unsuitable for the following reasons:

Site 1. Mast next at High Fields Farm, Notton, E 434075 N 412988
Site 2. Mast at Mill Farm, Athersley North, E 434184 N 413155

3.15 Sharing one of these existing mast could have been an option, however the masts are sited too far away from the areas which require coverage so are therefore unsuitable in radio planning terms. Siting the apparatus at either of these locations would not result in all of the targeted geographical area receiving Smart Metering coverage, therefore the development would not meet requirements.

Site 3. Mast at New Image Gym, Royston, E 436160 N 411360

3.16 A proposal to share this mast was originally pursued, however the results of an industry standard 'General Design Check (GDC)' found that the structure could

not feasibly accommodate the additional equipment required. The assessment accounts for issues such as structural loading. The site-share proposal could not be advanced further.

Site 4. Mast on highway at Jct High St/ Oakwood Rd, E 435812 N 411474

3.17 This mast is sited on the highway and is therefore a slim-line structure with shrouded antennas. The mast was not designed to facilitate the installation of additional apparatus, largely because the structure does not have the physical capacity. Masts sited along the highway can therefore not be shared.

3.18 A search was also carried out to establish whether any other high structures/buildings might be used. Potentially suitable sites were identified, however on assessment all were found to be unsuitable or unavailable:

Site 5. Co-op rooftop, Royston, E 435919 N 40367
Site 6. Telephone exchange roof-top, Royston, E 436280 N 411510

3.19 Siting the Smart Metering apparatus on the roof-top of one of these buildings was considered, however it was concluded that the buildings would provide insufficient height to enable effective radio operation. In particular, the radio signal would become corrupted by surrounding trees and buildings.

Site 7. New Image Gym, Royston, E 436160 N 411360

3.20 The roof-top of this building may have provided a feasible host site (subject to detailed assessment), however despite contacting the building owner there has been no indication that they would consider entering into a lease agreement. The site has no legal footing to progress any further.

3.21 Potential alternative locations at which to site a ground-based mast were also identified, including:

Site 8. Royston Working Mens Club, E 436246 N 411325

3.22 Siting a mast within the car park of the club may be technically feasible if a structure of considerably larger scale than the one proposed at the application site was to be installed. A high level structure, such as lattice tower, would be needed to clear the surrounding trees and buildings. The lower land elevation here is also a significant factor which would necessitate a compensatory increase in structure height. It was considered that such a structure may result in greater impact than the slim-line structure proposed at the application site.

Site 9. Vacant land at 50 High St, E 435893 N 411390

3.23 An enquiry was made as to whether the owner of this plot of land could incorporate the Smart Metering apparatus into their future developments plans. A response has not been received and the option had to be discounted.

Site 10. White Bros Garage, Royston, E 436367 N 411712

3.24 Contact with the land owner was had in relation to potentially installing a mast on land at the rear of the garage. The owner advised that he is already in talks with another developer to allow the land to be used for an alternative use which would not be compatible with telecoms development. The option was could not be taken and further.

Site 11. Grass verge at Meadstead Drive, Royston, E 435769 N 411449

3.25 The site was originally progressed into the design stage but a ground investigation survey found that the presence of underground services would prevent the installation of a mast, particularly in respect to the mast's foundations. The whole grass verge was too constrained by services to be progressed.

Site 12. Pavement at Oakwood Road, Royston, E 435909 N 411596

Site 13. Pavement at Station Road, Royston, E 435962 N 411942

Site 14. Pavement at The Lane (near Asda), Royston, E 436406 N 411754

Site 15. Pavement at Buckingham Way/ Petworth Road, Royston, E 435688 N 411762

Site 16. Pavement at Lee Lane/Westfields, Royston, E 435303 N 411501

Site 17. Pavement at Manor Occupation Rd/ Buckingham Way, Royston, E 435669 N 411585

Site 18. Grass verge at The Green, Royston, E 436087 N 411367

3.26 Sites 12-18 are alternative highway locations where siting the proposed installation was considered. The opinion was taken that all are less favourable than the application site, principally because of causing higher impact visually and on residential amenity. The installation would be more visible to more people and cause greater impact on the outlook from residential dwellings.

Site 19. Pavement at High St, Royston, E 435443 N 411473

3.27 This location was the subject of a development proposal which was given approval by the Council in February 2016 (App. Ref. 2016/1530). It proposed to install the same equipment which is now proposed at Royston Lane but which could not be built at the approved location due to the presence of underground services.

3.28 Our conclusion is that the best balance between environmental and operational considerations in this case is provided by using a specially designed structure on highway land, set amongst the properties that need to be served. This is the reason for the application before you.

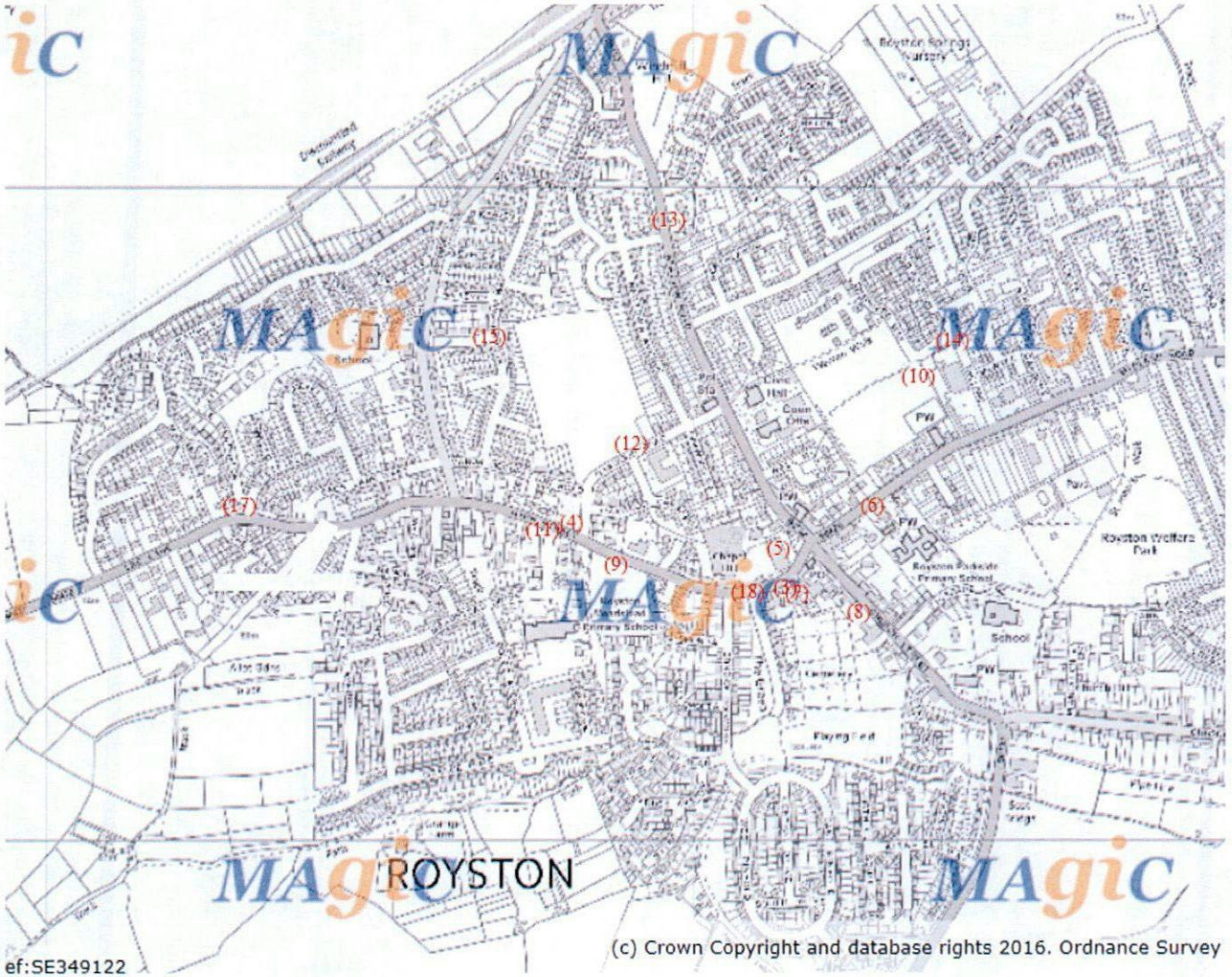


Figure 2. Alternative sites considered.

4. COMPLIANCE WITH PLANNING POLICY

4.1 The relevant planning policy framework that has been taken into account and in part already alluded to is found principally within:

- The Development Plan
- National Planning Policy Framework (NPPF)
- The Code of Best Practice on Mobile Network Development in England

4.2 These documents provide the overall policy background for electronic communications development, site specific policies and the key considerations relevant to the siting and design of appropriate electronic communications development.

The National Planning Policy Context

4.3 The general policy context can be summarised as follows:

- Government policy within the NPPF is to support high quality communications infrastructure and systems – this is especially relevant to smart metering, which is a Government initiative
- Government policy is to keep the inevitable environmental impact associated with electronic communications development to the minimum
- The best way to minimise environmental impact is to avoid the unnecessary proliferation of new radio masts and sites
- The starting point for planning new networks or the expansion of existing networks is therefore to use existing electronic communications sites

- Where new installations are required, as in this case, operators should look to develop innovatively designed structures, such as those designed to blend in with the street scene

4.4 The NPPF as a whole is aimed at encouraging a more positive approach to town planning. While the NPPF builds environmental protection into the definition of sustainable development, there is also a very clear emphasis that local planning authorities should be looking for ways to help development come forward and not reject applications simply on environmental grounds. The NPPF recognises that this is especially relevant where a development might have other significantly important benefits such as being essential to meet, for example, new nationally important infrastructure such as the Smart Meter communications network.

4.5 The importance of the proposed development as part of the Smart Meter network is clearly an important material planning consideration as it is precisely the type of new digital infrastructure that the NPPF is seeking to support. Hence, it is important to reflect on some key points within the NPPF which are relevant to the very important development at this site and the general planning principles that should apply when determining the merits of the application:

a. Paragraph 14 advises that authorities should:

- positively seek opportunities to meet the development needs of their area [as part of plan making];

- meet objectively assessed needs unless the adverse effects would *"significantly and demonstrably outweigh the benefits"*;

b. Paragraph 17 advises that planning should *"proactively drive and support sustainable development to deliver the homes, businesses and industrial units,* ***infrastructure*** *and thriving local places that the country needs";*

c. Paragraph 187, on "decision-taking" states that authorities should *"look for solutions rather than problems, and decision-takers at every level*

should seek to approve applications for sustainable development where possible".

4.6 Paragraph 14 of the NPPF further states that the presumption in favour of sustainable development lies at the heart of the planning system and, in respect of decision-taking, this means that where development proposals that accord with the provisions of the Development Plan should be approved without delay. In respect of this guidance, the following sections of this statement demonstrate that the proposed development accords fully will all relevant Development Plan and NPPF policies and, therefore, permission should be granted for the development.

Section 5 - Supporting Advanced Communications Infrastructure of the NPPF

4.7 The proposal is supported by, and accords with, the guidance in Section 5 of the NPPF, which provides further guidance on the Government's objective of providing high quality communications networks in England.

4.8 The NPPF clearly acknowledges the benefits of modern electronic communications and seeks to encourage such development as being essential due to their role in supporting a modern economy, contributing to sustainable objectives, and enhancing local community access to a range of goods and services. Local planning authorities are advised to respond positively to proposals for electronic communications development and this has to include an understanding of the associated special problems and technical needs of developing communications networks such as the Smart Meter network.

Section 7 – Requiring Good Design of the NPPF

4.9 Government places great importance on the design of the built environment and paragraph 56 of the NPPF states that this is an integral objective of achieving sustainable development. The careful approach taken to the design and siting of the proposed development complies fully with this general policy objective.

4.10 More specifically, the proposal is supported by the guidance in paragraph 65 of the NPPF, which states that:

'Local Planning Authorities should not refuse planning permission for buildings or infrastructure which promote high levels of sustainability because of concerns about incompatibility with an existing townscape, if those concerns have been mitigated by good design (unless the concern relates to a designated heritage asset and the impact would cause material harm to the asset or its setting which is not outweighed by the proposal's economic, social and environmental benefits).'

4.11 In respect of this guidance, all reasonable steps have been taken through careful siting and design to minimise the visual impact of the development, so far as the technical and operational constraints allow. The proposal is an acceptable design solution that will not have any impact on a designated heritage asset.

Site specific policy

4.12 The site is not within any specific land allocation or designated area. The following policy from the *Barnsley Unitary Development Plan* (adopted December 2000) is, however, relevant to the proposed development:

Telecommunications

Policy UTL5

HAVING REGARD TO THE SPECIAL OPERATIONAL NEEDS OF LICENSED OPERATORS PROPOSALS FOR TELE-COMMUNICATIONS DEVELOPMENT INCLUDING THE ERECTION OF RADIO, TELEVISION, CELLULAR AND PERSONAL COMMUNICATIONS NETWORK MASTS AND ANTENNAE WILL BE ASSESSED WITH REGARD TO THE FOLLOWING FACTORS :

A) THE APPROPRIATENESS OF THE SPECIFIC LOCATION HAVING REGARD TO THE EFFECT ON THE LANDSCAPE/TOWNSCAPE, THE VISUAL AMENITY OF THE IMMEDIATE AREA AND THE WIDER AREA FROM WHICH THE PROPOSAL WOULD BE VISIBLE, AND OPERATIONAL EFFICIENCY

B) THE POSSIBILITY OF ERECTING ANTENNAE OR OTHER APPARATUS ON AN EXISTING BUILDING, MAST OR OTHER STRUCTURE AS A POSSIBLE ALTERNATIVE TO THE ERECTION OF A LARGE MAST

C) THE PRESENCE OF OTHER TELECOMMUNICATIONS FACILITIES WITHIN AND AROUND THE SITE

D) THE NEED TO INCLUDE ADDITIONAL STRUCTURAL CAPACITY TO TAKE ACCOUNT OF THE GROWING DEMANDS FOR THE NETWORK DEVELOPMENT INCLUDING THAT OF OTHER OPERATORS.

ANY DEVELOPMENT SHOULD BE SITED AND DESIGNED SO AS TO MINIMISE ITS VISUAL IMPACT SUBJECT TO TECHNICAL AND OPERATIONAL CONSIDERATIONS.

4.13 In reference to *Policy UTL5,* the proposal is for infrastructure that is essential for delivery of the Government's Smart Metering initiative (see Chapter 2). A sequential site selection process has demonstrated that on this occasion it is not possible to share an existing installation and still meet technical requirements. The site does not sit within or near to any designated area.

4.14 The application has sought to demonstrate that the site presents the least environmentally damaging and technically feasible location within the local area. The process has also been informed by radio, topographical, and land use constraints (see p10).

4.15 The design of the apparatus aims to reduce visual impact and encourage assimilation into the local street scene. The pole would be of similar height and form to other column structures sited nearby on the highway, including streetlight columns. The design is much more discreet than a typical mobile phone mast. It is considered that the amenity of residents would not be unduly impacted.

4.16 In summary, the sensitive way the development proposed has been brought forward accords with best practice and forms part of a national important infrastructure project to provide smart metering services to the local area. This includes demonstration of a sequential site selection process. It accords with the key policy objectives at national level, which are reflected in the relevant policies at local level. The development proposed is therefore acceptable in principle and also accords with the more detailed guidance expressed in local policy.

5. DESIGN AND ACCESS STATEMENT

5.1 The development proposed essentially involves engineering operations and so is arguably exempt from the requirement to provide a design and access statement under Article 8 (1) (b) of The Town and Country Planning (Development Management Procedure) (England) Order 2010. However to assist your determination, this section provides a description of the process adopted in the design of the proposals and explains the access considerations. The significant contribution such development makes towards sustainable development objectives has already been outlined earlier.

Physical Context

5.2 The application site is a grass verge that forms part of the adopted highway of Royston Lane. The site is bound by the carriageway and an agricultural field, beyond which is housing. The local streetscape has existing street-furniture including lampposts and signage. The wider landscape features large-scale pylons.

Figure 3. Photograph of the application site.

Amount, Design, Layout and Scale of the Development

5.3 The scale, layout and design of the development has been guided by the special technical and operational factors affecting the need to provide an acceptable level of coverage to the local area, having regard to the need to minimise visual impact, which have been explained in the previous sections of this statement.

5.4 For example, the height of the mast, the numbers of antennas and its size, is the minimum amount of development required to provide coverage for the smart meter network. The mast design, a simple monopole, has been chosen as this is of similar size and form to other types of man-made vertical structures, such as streetlights, mobile network operators masts, CCTV poles, etc., that are a common feature of townscapes and landscapes across the UK. The pole is of the absolute minimum scale to meet radio coverage requirements and may have had to be higher if the application site was farther away from the targeted coverage area.

5.5 The same design considerations apply to the equipment cabinet, which is of similar size and design to other types of roadside cabinets commonly found in urban and rural areas. The location of the equipment cabinet, and the electronic communications equipment housed within it, reflects the technical and operational requirement to be in reasonable proximity to the antenna systems it supports.

Access Considerations

5.6 The installation is proposed on highway land and will be sited to prevent it causing an obstruction to the highway and pedestrian movement, or interfering with any existing access points or associated sight lines.

5.7 Once constructed, the development will be unmanned requiring only periodic visits about once every two to three months for routine maintenance and servicing. The site will be easy to access for this purpose and typical visits will be

by an engineer using a four-wheel drive light vehicle that will be parked lawfully nearby.

Landscaping

5.8 In view of the nature of the development and its location on highway land, a scheme of hard or soft landscaping is not considered necessary or appropriate in this case. The development is similar to other man-made utility and communication structures commonly found in roadside locations without dedicated landscaping.

5.9 Visual receptors would predominately be the users of the adjoining highway who would only experience transient and partial views of the installation from select locations. A position that is set-back from the edge of the highway has purposely been selected to reduce its visibility. The site also benefits from screening in the form of tree planting which will serve to filter views, particularly when commuting north of Royston Lane

5.10 The installation has been carefully sited to reduce the impact on residential amenity as much as possible. It is assessed that the installation may be visible from two nearby houses. However, the proposal would not result in a loss of outlook from these properties and given the site context which includes street lighting columns of similar scale and appearance to the pole proposed, and the presence of an electricity pylon which would continue to be the dominant feature in their view, the resulting magnitude of visual change would be low to moderate and outweighed by the benefits of the Smart Metering network.

5.11 It is considered that the local landscape is also of moderate sensitivity and could accommodate the development proposed. The proposed monopole would integrate well into the background setting which features street-lighting columns, road signage and large scale infrastructure in the form of pylons.

Appearance

5.12 Insofar as the mast and equipment cabinet may be visible, they should look straight forward in appearance to reflect their function. The proposed monopole would have a galvanised-steel finish and the equipment cabinet would be coloured dark green so that they integrate into their background setting. To that extent they should in time become accepted features of the local environment as with other forms of communications networks and essential public utility infrastructure. Alternative colours/finishes can be explored with the LPA.

6. ICNIRP COMPLIANCE

6.1 A certificate confirming compliance with the relevant ICNIRP guidelines on public exposure has been supplied with this application. Accordingly, as explained within the NPPF, it is not necessary to further consider aspects of health and other concerns. This includes the perception of risk.

7. SUMMARY AND CONCLUSIONS

7.1 The proposed development forms part of Arqiva's planned Smart Meter network, which is being created as part of the government's initiative to roll out smart electricity and gas meters to homes and small businesses across Great Britain between 2014 and 2020. The network forms part of the UK's National Infrastructure Plan and the information provided by smart meters will help consumers to better manage and reduce energy use and potentially save money. Smart meters will play an important role in the government's policies to achieve a transition to a sustainable and low-carbon economy.

7.2 The use of highway land seeks to provide the best balance between operational and environmental considerations. The site is located so that it can provide the required level of coverage to the properties it needs to serve, and the use of an innovatively designed structure will ensure that it blends in with other street furniture commonly found alongside the highway. The design and appearance of the structure should, therefore, be acceptable.

7.3 The proposed antennas will comply with all relevant health and safety requirements and will be compliant with the ICNIRP guidelines. There are no exceptional circumstances in this case and therefore no need to consider health effects and related concerns such as the perception of risk further.

7.4 This statement has demonstrated that the proposal is in accordance with local Development Plan policy and national policy set out in the NPPF. In particular, it is a form of development that is specifically encouraged as a matter of principle and in its detail complies with the policy objective of minimising potential environmental impact.

7.5 In conclusion, the application merits support and there are no material considerations that indicate otherwise.

Arqiva's Smart Meter Network

Supporting Technical Justification for Site Reference S026 Royston Lane

1. Introduction

1.1. This document has been prepared to support the planning application to develop a base station as part of Arqiva's planned Smart Meter communications network. Smart Metering is a Government programme to roll out, between 2014 and 2020, smart electricity and gas meters to homes and small businesses across Great Britain.

1.2. The Smart Meter initiative is a key part of the Government's programme to cut greenhouse gas emissions, decarbonise the economy and support the creation of new green jobs and technologies. Arqiva has been appointed to build the Smart Meter communications network in the north of England and Scotland.

1.3. The document provides supporting technical information and justification on the following matters:

- The operation of the base station
- The extent of coverage provided from the base station
- Health and Safety information, including compliance with the guidelines of the International Commission on Non-Ionizing Radiation Protection (commonly referred to as the ICNIRP guidelines)

2. How the Base Station Operates

2.1. Smart Meters are the next generation of gas and electricity meters. They will offer a range of intelligent functions and provide consumers with more accurate information, bringing an end to estimated billing. Consumers will have near real-time information on their energy consumption to help them control and manage their energy use, save money and reduce emissions. The UK Government's aim is for all homes and small businesses to have smart meters by 2020.

2.2. In order to deliver these benefits, a network of radio base stations needs to be built to connect customers' Smart Meters with their energy supplier.

2.3. A base station consists of a cabinet or cabinets containing radio transmitting and receiving equipment and an electrical power system, coupled to a set of antennas. The base station communicates with Smart Meters in the local area. It requires a power supply and also needs to be connected into the wider Smart Meter network. This will normally be achieved by connection to underground ADSL cables. In the rare occasions where this is not feasible, then the transmission link will be provided by a small VSAT dish, similar in size to a domestic satellite dish.

2.4. The main function of the mast, or alternatively the host building or other structure, is to elevate the antennas above obstacles such as tall trees, buildings, or valley sides that would otherwise block radio signals and prevent coverage from being provided.

3. Technical Information

3.1. Arqiva is licensed by Ofcom, the independent regulator and competition authority for the UK's communication industries, to provide electronic communications services in the public interest.

3.2. Smart gas and electric meters within premises will connect to Arqiva's network by means of the Communications Hub, which will be installed separately from the Smart Meter unit. The system uses Long Range Radio in the UHF band at 412-414 MHz for the uplink and 422-424 MHz for the downlink, using licensed spectrum. The network equipment is provided by a US company, Sensus and operates over a proprietary radio protocol, which has been customised for utilities messaging services. This solution is ideal for covering the varied terrain and building types of the UK, and is in wide deployment in the US.

3.3. The typical operation of the Smart Metering system consists of meters sending readings to their Communications Hub by a pre-set schedule e.g. every hour or every four hours, etc. (Communications between the meter and the Communication Hub are typically in the 2.4 GHz or 870 MHz bands). Also on a pre-arranged schedule, the base station sends a message to each Communications Hub (at 424MHz) to request readings. The Communications Hub then responds (at 414MHz) with its stored readings. Each message is typically of the order of several hundred bytes sent for durations of less than half a second.

3.4. Arqiva is under a legal obligation to comply with the conditions of its licence granted by Ofcom. These conditions ensure avoidance of interference with other radio systems, other electrical equipment, instrumentation or air traffic systems. The conditions of the licence are mandated by Ofcom who are responsible for the regulation of the civilian radio spectrum. Ofcom also has powers to investigate and remedy any reported significant interference.

4. Technical and Operational Requirements

4.1. The location of the base station has been selected following a comprehensive search of a number of alternative locations, which is summarised in the Planning Statement provided with the planning application. From the technical and operational perspectives, the location of the base station is determined by the following factors:

- The need to provide an acceptable level of coverage to the local area
- The terrain in which the base station will be located and the height of any potential blockages, such as trees or buildings, nearby
- Proximity to a power source
- An accessible route for construction and future maintenance access
- Feasibility of providing the Ground Based Transmission network

5. Predicted Coverage

5.1. The radio propagation plots in Appendix A show the geographical extent of the expected coverage from the site and its role within Arqiva's wider Smart Meter network.

5.2. The plot has been produced by computer modelling software in order to predict the extent of coverage and signal quality provided by the base station. The extent of coverage is dictated by many factors including the height of the antennas above ground level, the frequency and type of the antennas, the nature of the surrounding topography, and the presence of buildings and trees that can cause reflections or absorb the radio signals.

5.3. The following information is shown on the plots:

- The location of the base station, which is indicated by its site reference
- The orientations and type of the antennas, which are indicated by the various site symbols
- The extent of coverage is illustrated by the **Red** shading.

6. Compliance with Health and Safety Guidelines

6.1. The proposed base station has been designed, and will be constructed and operated, in accordance with all relevant health and safety requirements, including the guidelines of the International Commission for Non-Ionizing Radiation Protection (ICNIRP) as adopted in the EU Council Recommendation of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0Hz to 300GHz). The ICNIPR guidelines are accepted by the UK Government as the appropriate safeguard to public health.

6.2. ICNIRP is a non-governmental organisation formally recognised by the World Health Organization. The ICNIRP guidelines were developed following reviews of all the relevant peer-reviewed scientific literature. The ICNIRP Public Guidelines, which incorporate a precautionary safety factor of 50 times, are designed to protect all members of the public 24 hours a day.

6.3. The certificate submitted with the planning application certifies that the base station, when operational, will meet the precautionary ICNIRP guidelines. For the avoidance of doubt, the certification relates to the radio coverage provided from the base station and any other electronic communications installations at the site.

7. ICNIRP Certification - National Planning Policy Guidance

7.1. Section 5 'Supporting high quality communications infrastructure' of the National Planning Policy Framework for England provides the following guidance to local planning authorities on health safeguards and base station development:

'46. Local Planning authorities must determine applications on planning grounds. They should not seek to prevent competition between different operators, question the need for the telecommunications system, or determine heath safeguards if the proposal meets International Commission guidelines for public exposure.'

7.2. Essentially the same guidance is provided paragraph 300 of Scottish Planning Policy, which states that where planning applications are supported by a declaration that the equipment and installation is designed to be in full compliance with the appropriate ICNIRP guidelines for public exposure to radiofrequency radiation (paragraph 296) then:

'*300. Planning authorities should not question the need for the service to be provided nor seek to prevent competition between operators. The planning system should not be used to secure objectives that are more properly achieved under other legislation. Emissions of radiofrequency radiation are controlled and regulated under other legislation and it is therefore not necessary for planning authorities to treat radiofrequency radiation as a material consideration'.*

8. Further Information

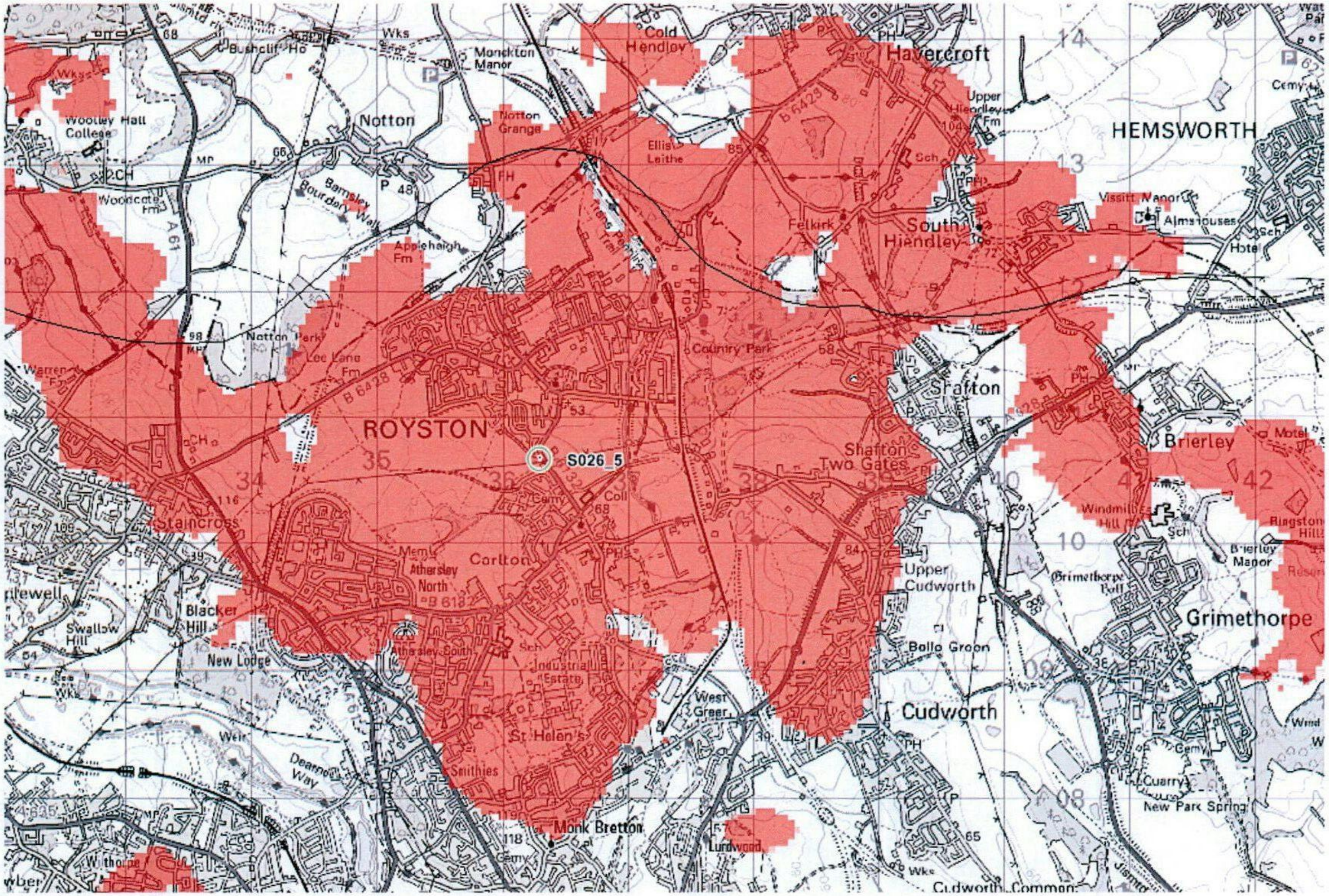
8.1. Further information on health and safety guidelines can be found from the following sources:

ICNIRP: http://www.icnirp.org/

World Health Organization: http://www.who.int/topics/electromagnetic_fields/en/

Public Health England: http://www.hpa.org.uk/HPAwebHome/

Appendix A



ROYSTON
S026_5
HEMSWORTH
Havercroft
Notton
Cold Hiendley
Monckton Manor
Notton Grange
Woolley Hall College
South Hiendley
Felkirk
Shafton
Shafton Two Gates
Brierley
Grimethorpe
Cudworth
Upper Cudworth
Carlton
Staincross
Monk Bretton
St Helen's
Smithies
Country Park
Blacker Hill
New Lodge
Cudworth Common
New Park Spring