

BT response to the Smart Metering for Electricity and Gas consultation

1. BT welcomes the opportunity to comment on the smart metering for electricity and gas consultation of 11th May 2009 and we look forward to further opportunities to participate in the continuing consultation process.

2. The low carbon economy and innovation

2.1. BT consumes 0.7% of the UK's entire electricity and we have taken ambitious steps to reduce our carbon footprint. Pledges to reduce the amount of carbon we emit as a business, and encouraging our suppliers, customers and employees to take action, have helped BT to become one of the first companies in the UK to receive certification from the Carbon Trust Standard as well as continuing to hold the "number one" position in the Dow Jones Sustainability Index's ranking of telecommunication companies for eight consecutive years. We believe that communications technology can be harnessed to help address climate change and that smart metering provides an opportunity to help reduce the UK's carbon footprint.

2.2. BT believes the Government's proposal to roll-out smart meters can make an important contribution to the UK's transition to a low-carbon economy and could help meet some of the long-term challenges to ensure the UK has an affordable, secure and sustainable energy supply. We also note the role smart meters could have in encouraging a significant change of culture through enabling consumers to manage more effectively their energy use and carbon emissions. New opportunities could be created for energy retail services, infrastructure management and renewable energy generation. Accordingly we support the principles of the government's plans on smart metering and its rollout by 2020, and have a number of comments on them which are set out in the rest of this paper.

3. The Central Communications model and changing infrastructure requirements

3.1. Critical to the success of the roll-out and operation of smart meters will be the implementation and management of a robust and future-proof communications platform to enable connectivity and secure data transport. Our experience and leadership in delivering large national critical infrastructure projects suggests that the optimal smart metering solution for the UK is likely to be one that is future-proof, robust, upgradeable and delivered through an open access wholesale communications platform. It is highly likely that a carefully co-ordinated blend of multiple technologies will be required to achieve the appropriate levels of coverage.

3.2. The communication provider, therefore, will need to manage the complexity of technology and solutions across the UK on a large scale. BT's recent experiences in rolling out new Broadband and Ethernet infrastructures across the UK, our investment in Super Fast Broadband and next-generation networks programme (21CN), have given us invaluable insight into the challenges of delivering large-scale, long-term critical infrastructure programmes whilst minimising risks and disruption for our customers.

3.3. The Government has rightly identified that technology and requirements are very likely to evolve continuously over the next decade. The options available in 2020 may be quite different from those available earlier in the implementation phase. The communication provider must adopt a flexible approach to reflect these changing requirements in order to deliver a communications infrastructure that ensures consumers and key stakeholders do not end up with an obsolete solution by 2020. The following principles seem to be appropriate:

3.3.1. use a blended mix of technologies, as appropriate, to deliver the smart metering service.
The central communications model should ensure that one party has the contractual

- commitment to deliver, recognising that delivery is likely to incorporate many technical solutions across geography and over time;
- 3.3.2. allow for seamlessly managing the evolution over time of each technical solution with regular reviews;
- 3.3.3. apply flexibility in geographical rollout and in deploying the most appropriate technology;
- 3.3.4. extend the capability of the network infrastructure over time to support emerging requirements for higher bandwidth and more highly available services, which will be needed as the solution evolves to support Smart Grid in the future.

4. Regulatory framework

- 4.1. BT agrees that balancing effectiveness of delivery through a central provider, whilst enabling competition to ensure a high quality of customer service is a key element of any communication provider model. Ideally, the Central Communication Provider (CCP) should operate within a defined regulatory framework to provide a clear structure under which the CCP will deliver smart metering services nationally.
- 4.2. The telecommunications industry demonstrates that regulatory and policy frameworks will have a significant role in determining the overall economics of a business case for national projects such as this. The public value of positive externalities, for example, will enable the value smart metering brings to be articulated to customers more effectively. BT believes it is, therefore, essential that the procurement body should help to clarify and coordinate the regulatory impact across all stakeholders.
- 4.3. The structural separation of Openreach within BT Group demonstrates that large national infrastructure projects can be delivered whilst ensuring competition is not distorted and is actually encouraged. We believe that the CCP should operate within a similar framework that supports and fosters innovation and competition for all the stakeholders in the energy sector and adjacent markets.

5. Smart meters as an enabler to Smart Grids

- 5.1. BT recognises and fully shares the government's views that "*smart meters will [...] provide an essential stepping stone to Smart Grids in the future*". Smart Grids are likely to be more demanding of communication infrastructure than smart meters in the medium to longer-term. Requirements such as readings to be made at intervals measured in minutes, not months (perhaps even dynamic demand-side management) or multiple data flows for micro-generation facilities are all likely to significantly increase bandwidth demand and availability. In addition, for Smart Grids to operate correctly, availability requirements will tend to be much higher.
- 5.2. Initially, it is likely that any solution will focus more on meeting smart metering requirements specifically, rather than true Smart Grid enablement. Whereas smart meter requirements (e.g. regular meter reading at specified times) might require an on-demand bandwidth usage, Smart Grid requirements will be dependent on an always-on connection with higher bandwidth usage.
- 5.3. It is therefore critical that any smart metering solution becomes capable of providing for an always-on, higher bandwidth capability to ensure the solution is future-proof and public investment is maximised. BT believes the optimal solution will be based on a fixed-line infrastructure based on fixed copper lines or next generation networks. Utilising existing and planned communications infrastructure (copper or optical fibre) allows for smart metering services to be enabled to the home early on whilst also allowing for future expansion of bandwidth and robustness requirements.

6. BT contribution

6.1. BT is looking forward to supporting the Government, stakeholders and consumers in fulfilling this key initiative for the UK. We understand a partnership approach and a longer-term perspective with any potential communications provider are critical to make smart metering a success. We believe our experience in delivering challenging large-scale infrastructure projects within a complex environment could make a major contribution to achieving the Government's goals. BT has the proven capability to:

- Propose a solution incorporating numerous and complementary technologies to ensure maximum coverage for the UK consumer;
- Remove the complexity of technical and commercial interoperability issues;
- Minimise the risks and potential disruption to the consumer;
- Maximise use of existing infrastructure investments, thereby minimising costs;
- Ensure flexibility of technology changes over time;
- Provide the scale and capabilities to deliver nationally ;

6.2. Overcoming security challenges will be a critical element of success not only for smart meters but increasingly for Smart Grids as well. Security considerations are likely to be at the forefront of the Central Communications Provider (CCP) plans to move to a national, unified, real time grid structure with the ability to manage more effectively supply and demand of energy. BT is looking forward to providing insights into the security challenges surrounding smart metering. BT's track record of delivering network-based security services for some of the most complex communications networks in the world (including networks for the UK Government and Ministry of Defence), our dedicated security practice (a security community of 1800+ full time client facing consultants / architects / designers), our monitoring capabilities (more than 335,000 devices monitored for nearly 1,000 managed security services customers worldwide) have given us invaluable insight into potential smart metering security challenges.

In the following section we provide more on these points by answering each of the questions asked in the consultation document.

The Consultation Questions

1. Do you have any comments on the Government's preference for the Central Communications model?

- 1.1. BT fully agrees with the Government's view that a Central Communication model is the optimal means for the delivery of smart metering in the UK and notes the overall benefits to be gained from such an approach both from a "UK Plc" and consumer perspective.
- 1.2. In particular, BT's view is that the model is beneficial as it will drive lower communication and installation costs than other comparative models. Notably, a single provider is likely to reduce overall costs through the avoiding duplicate deployment activities (in the case of multiple providers) as well as creating a unified underlying physical infrastructure for the central management of key data. BT also agrees with the Government view that the model is likely to simplify technical and commercial interoperability issues because each supplier interacting with the CCP is likely to use a standard agreement.
- 1.3. BT is aware that a national rollout of smart meters over ten years will be a complex endeavour and that previous experience of implementing communications infrastructure nationally will be critical. The needs of communications infrastructures and facilities will vary across different geographies, varying in rural areas and high-rise apartments, for example. Alignment of the communication infrastructure and installation meters will require co-ordination and carries significant implementation risk. Our experience in rolling out a national ubiquitous network demonstrates our capabilities in delivering a national infrastructure cost-effectively whilst

mitigating the complexities and risks to customers across varying geographies and consumer groups.

1.4. A wide ecosystem of energy management services should be encouraged in order to maximise the attractiveness to all consumer groups and demographics. Furthermore as the overall solution is likely to evolve towards the use of higher bandwidth requirements (driven in part by Smart Grids) it is critical the CCP maintains flexibility throughout the duration of the project.

1.5. BT also notes that communication to engagement with home-owners will be critical especially during the implementation phase. The capability to communicate to various user types and communities nationally will be critical in determining the success of the endeavour. BT would be delighted to provide assistance in this matter and share learning from its successful community-based initiatives across the UK.

2. Do you have any comments on the analysis and conclusions on the delivery model contained in this consultation document, the reports prepared by Baringa or the Consultation Impact Assessment?

2.1. BT welcomes the conclusions of the Baringa report and notes that the overall approach is to achieve full national coverage by 2020. We believe any solution will require partnerships on a national scale across key stakeholders to deliver a viable end-to-end smart metering solution. It is likely that a blended mix of technologies will cover a large majority of the population but BT agrees with the observation that there is likely to be a proportion of the population that will be more challenging to cover.

2.2. We also note that the costs outlined in the report will be impacted by the coverage level of any solution. Overall, costs are likely to rise as coverage increases and there will be a residual proportion of the country where costs are likely to be significantly higher. Enabling efficient partnerships by effective co-ordination will be key to delivering a smart metering service nationally. Understanding the performance and scalability of potential communications infrastructure solutions is essential for successful deployment. To this end BT is a key partner in a TSB-supported project (CLEVER) in which simulation models are being developed to evaluate a variety of options. Our suggestion is that the sensitivity to coverage of the overall goals should also be tested by further financial modelling.

2.3. BT looks forward to further discussion on the cost modelling and assumptions to better understand how anticipated key cost drivers such as early life failures, repeat visits, extra drilling, special cases, missed appointments, future technology changes, etc. will be factored into the overall commercial model. BT believes that as a greater understanding develops, the model will be reviewed further in light of feedback. Furthermore, BT believes that the cost model assumption will be effective to reach a significant proportion of the end-users. However it will not be effective to reach all.

2.4. Providing a secure solution, with the necessary interfaces between meter providers, CCP, energy retailers, Distribution Network Operators and energy wholesalers is likely to incur additional costs.

2.5. While the Baringa report acknowledges that “*potentially a number of different technology solutions could be used*”, the use of a single solution (GSM GPRS in this case) “*for the purposes of this analysis*” with unique cost points may underestimate the various challenges and complexity of the roll out. It is very likely that any particular solution will have specific difficulties in implementation depending on the coverage areas (for example low signal in-home and in remote areas for GSM GPRS) and that standard costs assumptions may rise significantly as a result (for the extra work needed to overcome these difficulties). An optimal approach would seek to minimise costs and maximise the use of investment by leveraging the best

possible solutions for specific coverage areas, leading to a more efficient solution mix for the roll out approach.

3. *Do you agree the Central Communications model effectively facilitates 'end to end' management of the electricity networks system needed for Smart Grids?*

3.1. BT fully agrees with Government views that smart metering is an enabler to Smart Grids, for the need for end-to-end management, and the "on demand" nature of the communications to be provided by the CCP. Furthermore, the move to a true Smart Grid operation is likely to require an "always on" bandwidth connection and the role of the CCP should include a responsibility to ensure that smart meters will evolve and form part of a Smart Grid.

3.2. Higher bandwidth technology is likely to be required to enable Smart Grid due to the higher volume of data which will be needed in Smart Grid operation. BT has plans to deploy Next Generation Access (NGA) infrastructures which could be well placed to provide both a high level of tamper-proofing and resilience as well as providing the necessary bandwidth. BT is considering solutions linked to NGA which in the future will be directly applicable for Smart Grid WAN (Wide Area Networking) connectivity from the home/business premises.

3.3. A Central Communications model is the only one which can bridge between the geographic focus of Distribution Network Operators (DNOs) - who will primarily drive the need for and derive the benefit from Smart Grids - and the more scattered profile in the energy supplier community. Fragmenting the communications infrastructure either by geography or by supplier will give rise to additional and unnecessary interoperability requirements, and associated risk, costs and governance uncertainty.

4. *Do you consider that Government should adopt measures to promote co-ordination of roll-out at local level? If so, what measures would you support?*

4.1. Early and positive consumer awareness and experience will be critical to the successful take up of smart meters and the overall programme. Lack of local coordination of communications and energy suppliers may lead to issues around customer experience and disruption;

4.2. BT has a strong track record in successfully engaging with consumers and businesses via regional and local community activities - encouraging and accelerating take-up of new technology and services. Our Broadband Britain campaigns in the early part of this decade involved a wide range of activities, ranging from dynamic and effective marketing campaigns, jointly managed with other Internet Service Providers and community groups - to a very successful and innovative community-based "pre-registration of interest" scheme. This collection of co-ordinated demand stimulation led to highly active community groups emerging - stimulating and organising demand for installation of new technology facilities, which we were able to use as an effective driving force into the installation and investment programmes. We have carried forward this approach into our new superfast broadband initiative - where we are working actively with regional development agencies and other local community groups to ensure emerging demand can be optimally linked to the infrastructure build programme. Coordination does not preclude competition – indeed, all of the examples relating to our activities were conducted in, and supported, a fully competitive market.

5. *Should any particular policy considerations be taken into account in considering whether there should be priority target groups for early deployment of smart meters?*

5.1. Initial successes with consumers will be important to the overall success of the roll out. The Government may therefore consider seeking early successes for example by – i.e. targeting those who would welcome smart metering either because it offers the prospect of lower energy bills or because a group is more inclined to adopt and embrace the new possibilities. Alternative

options would be to target a geography for wide and early deployment, or choose to target a social segment.

5.2. Different communications solutions may be better than others in serving different target groups. When planning and considering the mix of solutions to use over the time of the roll out, it will be important to assess which solution serves best different target groups, especially in the view of seeking early successes. BT has a strong track record of working with specific user groups, including social economic groups and looks forward to bringing this experience to bear.

6. *Do you have any comments on the merits of alternative approaches under which electricity and gas network businesses take on responsibility for aspects of smart metering?*

6.1. BT recognises that because the UK has a wholesaler/access reseller model for the energy supply chain, smart metering may favour some changes to an infrastructure model where DNOs manage more of the smart metering infrastructure (e.g. a data hub which has access to data on both the supply and demand side, in near real time).

6.2. As Smart Grids come on stream, the network operators will have a bigger role and will need access to highly granular data and direct access to customers. For some operators, realising the benefits of Smart Grids will depend upon them having near real time access to their Network Connectivity Module (NCM) or access to an alternative style of Communications infrastructure such as Power line communications (PLC). In either event the implications on the communications physical infrastructure are potentially profound and in BT's view need to be better understood early on given the potential for substantial redesign and associated costs. Closer involvement of the DNOs is crucial for this.

Questions from Section 3: Proposals for the Domestic Sector: Functionality

7. *Do you agree with the functionality proposed for electricity meters? Please explain your reasons and if possible give evidence for your comments.*

7.1. BT agrees with the high-level principles from the proposed functionality. However, there are a number of issues which arise when considering the detail. In particular:

7.1.1.A – The accuracy of readings will depend on the overall ecosystem. For example, if a tariff change is implemented centrally but not downloaded to the meter and RTD in good time, the householder could be misled. It is critical that ownership & management of the tariff data is managed by the energy retailer, since only they will have the information to provide accurate pricing.

7.1.2.B – Two way communications is achievable relatively easily at the functional level, however, achieving this in a secure manner and with predictability requires significant engineering effort. There is a danger that the complexity of this task is underestimated. Capacity management and network assurance for such a large scale undertaking is a highly complex engineering task that will evolve over time, as volumes of data transfer will increase.

7.1.3.C – The aspiration for a Home Area Network built on “open standards and protocols” will be challenging to achieve given the large number of technical standards vying for dominance. The selection of the specific standard will take some time, and will require the agreement of all parties (meter suppliers, CCP, RTD supplier and consumers). This is a significant task whose scale should not be underestimated.

7.1.4.E-H – These are statements about the control system beyond the CCP, however, they do imply a degree of security and availability on the underlying network. The requirements for this need to be developed in more detail and agreed within the wider industry.

7.2. The practicality of embedding communications in meters raises other issues (such as radio-coverage in buildings which may be difficult to achieve).

7.3. The architecture and standardisation activity raised against item C above needs to consider gas as well as electricity meters, and identify common standards which can be applied to both, to prevent unnecessary complexity of the home network solution. This standardisation must extend to the display mechanism, which must be pre-loaded with date tariff information for the user's selected tariff. The standardisation needs to cover both the physical layer (i.e. selection of the specific radio protocols used and the frequencies in which they operate) and the data layer (common methods of data exchange and control instructions for the electricity isolation switch or gas isolation valve, if fitted).

8. *Are there any additional requirements that will be needed to facilitate smarter network management, efficient energy management and the development of "Smart Grids"?*

8.1. The move to Smart Grid operation requires a significant piece of architecture work to be carried out to analyse the emerging requirements and determine the best solution. This must consider the overall end to end solution, in terms of communications within the home, between the home and the CCP, and in terms of the information management layer which will enable "smart" decisions to be made. In addition, there will be significant changes required within the home – for example appliance controls, which will need to either be embedded in the CCP from day 1, or provided later as an overlay.

8.2. BT's view is that the CCP should provide the basic, highly secure connection required to enable the core operation, but that the move to include Smart Grid from day one is likely to increase complexity and may delay initial benefits. Providing additional "smart" services over existing high bandwidth infrastructure has significant benefits, including consumer engagement, no need to swap-out the basic energy supply components, and the flexibility provided by a much higher bandwidth solution (whether provided by a fixed or mobile infrastructure).

8.3. There are some key elements of the solution which need to be future-proofed initially:

8.3.1. Standards for meter functionality and openness (e.g. WAN connection, LAN connection) need to be defined, agreed and implemented.

8.3.2. Security standards need to be defined in such a way that the necessary level of control is provided within meters .

8.3.3. Management standards need to be defined which allow an installer to carry out installation and initial configuration in a consistent manner. This needs to include initial configuration of the Home Area Network – i.e. the parameters which are needed to ensure that the wireless communications between the meters and the communications device are in place, operational and secure. Co-ordination will be needed between the energy companies installing meters and the CCP providing Communications Infrastructure, as that infrastructure is likely to require configuration within the network to ensure the correct associations are made between the premises and the central data management facility associated with the energy company. This must be extendable to enable further devices to be added (for example local micro-generators), without the need to reconfigure the existing Home Area Network. Agreement of the industry's vision for the end state of the communications network (e.g. whether it is fibre based active line infrastructure, mobile

based or Powerline etc) will be required.

8.3.4. Automated and Dynamic Demand Side Management potentially requires a communications capability that is not only higher bandwidth, but also “always on” to enable real time status and load readings, to support micro generated energy import billing etc. In contrast, the core needs of smart metering can be accommodated by a communications infrastructure that is available “on demand”.

8.4. The initial design and construct of the CCP solution needs to demonstrate how it will evolve over time to deliver these additional requirements.

9. *Do you agree with the functionality proposed for gas meters? Please explain your reasons and if possible give evidence for your comments.*

9.1. There is no logical reason why the functional requirements for gas meters should be significantly different from those of electricity meters (remote read, display and connection management). Indeed the provision of similar functionality on both devices will simplify the overall data management and control systems which will need to be deployed within the energy industry, and hence reduce costs overall.

9.2. The differences which have to be considered lie in the practical implementation of a solution. For example battery powering, the rollout sequence, and in-home communications environment.

9.3. It is assumed that gas meters will need to be battery powered and any other solution will introduce significant concerns over safety and risk management. Battery life will be a key issue which needs to be considered. The functions within the meter which need to be powered include taking readings, transmitting these via a wireless link to devices in the home area network, including displays and a communications gateway, and potentially controlling the valve. If a valve is mandated, this will inevitably shorten the battery life as the power needed to open and close a mechanical device will be significantly more than that needed to simply monitor and transmit data. This impact needs to be considered, as will the economic cost of the energy company needing to replace batteries more frequently where a valve is deployed and actuated.

9.4. We question the Baringa report’s assumption that there are no costs associated with the communications gateway installation for a gas meter, since the electricity meter and communications infrastructure will be deployed first and are likely to incur additional planning and scheduling installations costs.

9.5. It is assumed that a gas meter will always be wirelessly connected to the communications gateway, as a wired connection of any sort (even low voltage) will raise safety concerns.

9.6. The in home communications network clearly needs to be compatible between all meter types, gas and electricity, and with all variants of in home displays. The architecture and standardisation exercise identified in the answer to Questions 7 and 8 therefore needs to fully consider gas as well as electricity meters from the outset.

10. *Are there any additional maintenance, administrative or management costs associated with having all gas smart meters with a valve?*

10.1 As noted in Question 9 above, including a valve will potentially shorten the battery life and increase operational costs. This should be fully considered in the next stages of development of the overall economic model.

11. *Do you agree with the Government's position that a standalone display should be provided with a smart meter?*

- 11.1 Consumers need data to be provided to them to enable and encourage them to take control of their own energy consumption. However, consumers will also expect to have some level of choice over both the information presented and the display. This means consumers should have some choice over the information presented and the location and ways in which they can view it.
- 11.2 BT's view is that there is a role for both a low-cost, mandated display, and a more sophisticated display providing a wider set of data to the user, for example historic consumption indicating the times of energy peaks, alarms for excessive or unusual usage etc. This sort of enhanced functionality could become a differentiator between energy retailers and could be a key enabler for increasing consumer awareness and changing their energy consumption behaviour. We believe that a mandated display should have minimal functionality, but with a range of additional display options available to consumers based on their choice and the specific offers from the energy companies.
- 11.3 Where a simple display is mandated it seems reasonable that this should be installed at the same time as the communications infrastructure and the electricity meter. This minimises the overall cost. However, where a user chooses to adopt a more sophisticated display option which may provide more data, the facility should be made to provide this separately, either by means of a separate physical device or by means of a presentation on an existing display, in order to enable maximal innovation in the information presentation and management.
- 11.4 The functionality and standards for the basic display should be agreed and mandated across the industry, and should not be a point of differentiation. The principles from the telecommunications world of basic services provided by the infrastructure provider, with differentiation provided on an open basis with equivalent access to all comers, should be adopted in this case. This has successfully provided a guaranteed level of service, but still enabled innovative models based on different retail value propositions.
- 11.5 The communication needs of the basic smart metering services are very different from those of the enhanced display. The basic services require a high level of utility robustness and availability, but at relatively low bandwidths, whereas more advanced services are likely to require a lot more bandwidth, and are not required to have the same level of utility robustness levels. This would tend towards the use of high-bandwidth infrastructures for delivery of value added data to the users.
- 11.6 This in turn leads to the conclusion that there should be a clearly separate market for value-added services (enhanced displays) since the requirements are very different from those of the underlying communications network. This needs to be developed further as the technical requirements and the business structure of the CCP proposals firm up.

12. Do you have any comments on what sort of data should be provided to consumers as a minimum to help them best act to save energy (e.g. information on energy use, money, CO2 etc)?

- 12.1 BT recognises that the needs of individuals will vary enormously and that it will be important to build flexibility into any solution, and allow the users to select the parameters which are important to them. BT believes there are significant opportunities to enable the consumer to improve energy consumptions, especially through the provision of data in a user-friendly format which may require some form of touch or keypad to enable selection of data.
- 12.2 Consumer requirements may also change over time. For example, a user might initially make use of an alarm to indicate that usage has increased above some notional average level, but later might start to take an interest in the actual usage per day. It is possible that more sophisticated users will want to download data and perform local analysis and display, e.g. to identify what is causing peaks in usage in the home. This final capability is likely to be provided as part of a

value-added package provided over a mechanism other than the CCP, e.g. a high bandwidth connection.

13. Do you have comments regarding the accessibility of meters/display units for particular consumers (e.g. vulnerable consumers such as the disabled, partially sighted/blind)?

13.1 It is important that the smart meters be accessible to all types of consumers. It is likely various segments of the population will require more tailored smart meter implementation. BT is therefore recommending the CCP ensure communities and various segments are engaged with prior and during implementation. As such BT is proposing to adopt a flexible approach to roll out so that smart metering installation be flexible to meet the needs of all users.

13.2 The in-house display, for example, should be fixable in a location visible to someone in a wheelchair. BT has a long experience and wide expertise in the area of inclusive design. We believe that, beyond legal obligations to serve all customers without discrimination, designing solutions which could be easily adopted by all customers or making reasonable adjustments and providing extra help where needed will be essential to the success of the roll out and to enable the change in consumer behaviour around energy consumption. Specific RTD (Real Time Display) units should also be available to meet the needs of partially sighted users etc. who may have very specific needs. This might require a larger font size, or higher contrast, for example.

Questions from Section 4: Proposals for the Non-Domestic Sector

14. Do you agree with the Government's proposal to extend to the small and medium non-domestic sector the minimum functionality that we will require for smart meters in the domestic sector, with certain exceptions to allow for individual consumer requirements?

14.1 BT agrees with the Government's proposal as it is clear all stakeholders would benefit from this approach. Furthermore this approach would yield implementation benefits through the reduction of implementation risks, reducing interoperability issues between SME's and consumer requirements and minimising rollout costs.

15. Do you have any comments on the implications of the Government's proposed approach in this sector for the future development of Smart Grids?

15.1 The Government's proposed approach is likely to facilitate the move to a Smart Grid-enabled energy network. BT believes this is a positive development as the benefits Smart Grid is likely to bring to the non-domestic sector are significant both in terms of carbon reduction and more efficient use of energy from an aggregate perspective. As in previous comments, BT notes that this requirement is likely to require an always-on connection with higher bandwidth requirements in the future. The Government may wish to consider prioritising roll out and trials in this sector.

16. Do you have any comments on the implications for the non-domestic sector of the options identified for a domestic delivery model?

16.1 There will be some more sophisticated requirements from some non-domestic customers. Small and Medium Enterprises (SME) sector in particular is a very diverse sector covering a range of organisations which may put additional requirements around smart meters and Smart Grids to maximise the needs of many different entities. For example, sub-letting of premises in multi-tenant buildings and safety will be important considerations. BT would be keen to share our extensive experience in engaging with all types of non-domestic enterprises ranging from small offices to large manufacturing enterprises.

17. Do you agree with the Government's approach to promoting interoperability in the non-domestic market? Do you have particular views about the interaction between the Government's proposals for the non-domestic sector and the domestic smart meter roll-out?

17.1 To reduce overall network management costs the Government is right to include the non-domestic sector along with the domestic market. There is a requirement for standards, regulation, life of contracts and interoperability between business and consumers solutions to be considered.

17.2 Furthermore, BT agrees that interoperability should be one of the main aims of smart metering implementation across the UK and will help promote open standards across components to ensure end-to-end effectiveness and reduce complexity. A roadmap for the future, therefore, should ensure both consumers and the non-domestic market have a joint vision.

Question from Section 5: Other Issues and Next Steps

18. Has Government identified the right issues for the immediate next steps? Are there other activities or key issues which you think should be addressed at this stage of the preparations for roll out?

18.1 BT believes the government has identified the right issues for the immediate next steps and additionally would recommend further focus be placed on the following:

18.1.1 Commercial model: Further focus should be given to the overall commercial model to better understand cost recovery assumptions, end-to-end commercials and funding challenges;

18.1.2 Security: Resolving security challenges will be of paramount importance to the success of the smart meters initiative and further focus should be given to identifying and resolving key issues. Critical issues include the data protection across the various handoffs for the end-to-end smart metering process, the security required during installation visits from engineers and potential national security implications of the ability to remotely disconnect millions of meters are all issues which will require early project focus.

18.1.3 Data architecture: The way data is made available to a wide range of organisations will be important. The right data architecture will enable a wide ecosystem and new market to develop energy management services in the home. The Data Architecture for smart metering will need to consider the existing ecosystem supporting data exchange between energy retailers and wholesalers, and build on existing systems and processes where possible.

18.1.4 Programme co-ordination: Smart metering in many ways represents the convergence of the energy and telecommunications industries, and hence requires the involvement of DECC, DBIS, Ofgem and Ofcom, the longer term potential to embrace water in this project means that the Central programme must have the ability to determine at what point to also involve Ofwat and DEFRA. To ensure continuity and effective delivery across the UK, some form of central programme will be required to co-ordinate this at a national level.

18.1.5 BT would welcome further discussion on how the smart metering initiative links with other key national initiatives such as Smart Grid and Digital Britain. It is BT's view that early discussion on linkages will enable the Government to gain a co-ordinated approach.

- 18.1.6 Interoperability: The government has rightly identified potential interoperability issues as critical to the programme's success. BT would welcome further discussion on interoperability issues both from a technical and commercial perspective.
- 18.1.7 Early consumer engagement is crucial and needs to start in the very near future. In order to engage effectively on a national scale, it is BT's experience that the CCP will need to effectively understand segmentation of various groups and develop specific engagement plans with each of the constituencies early on. BT would welcome further discussion on this subject and better understand the government and industry views on how to approach this.