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Dear Margaret Coaster

Thank you for the opportunity to provide a further response to the latest round of the Ofgem/DECC consultation regarding smart metering and climate change. As commented within the two previous consultation rounds, Telefónica O2 and its partners are committed to support the government aspirations in realizing a Smart Metered UK territory which benefits all stakeholders. We believe that by focusing our expertise on four key areas; Architecture<sup>1</sup>; Customer Engagement; Innovation; and Investment, we can offer the greatest support to this initiative going forward.

#### **Architecture**

We acknowledge from the numerous discussion forums there is a requirement to further finalize an architecture that expedites smart metering implementation whilst affording flexibility, security, scalability and most importantly choice.

To this end, we are pleased to announce the formalization of a communication infrastructure partnership between Telefónica O2 and Silver Spring Networks. This venture will enable much greater opportunity for us to realize the emerging and existing governmental expectations related to this program.

#### **Customer Engagement**

By working with Silver Spring Networks, Telefónica O2 believes that this greater connectivity choice will drive more innovation and benefits for the consumer as such a partnership will further increase communication competition and lower total cost to serve. Such benefits could be characterized as enabling energy efficiency products and services through the communication environment, with which to assist the fuel poor and energy inefficient consumer.

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<sup>1</sup> A Smart Metering Infrastructure is essentially three communication environments; Carrier/WAN for carrier level data backhaul and integrity; NAN (Neighbourhood Area Network)/LAN to enable local meter connectivity; HAN (Home Area Network) for home and consumer interaction. Each area requires distinct communication capabilities & outcomes.

*A **Telefónica** company*



### **Innovation**

We believe that smart metering is a catalyst to a smarter society and further innovation within the UK driven by Machine to Machine (M2M) connectivity.

Some initiatives that Telefónica O2 and Silver Spring Networks have practical demonstrability in facilitating and driving include: Smart Grid, Smart Cities, Smart Home and Smart Networks.

Many of these smart initiatives require a consumer centric approach to realize much of the longer term sustainable benefits. We feel strongly that the partnership of Telefónica O2 and Silver Spring Networks we not only promote such a consumer focus, but also enable us to build upon our joint successes of Smart Grid as a platform now totaling over 30m global endpoints.

### **Investment**

Telefónica O2 recognizes that this innovative initiative - whilst driving efficiency; choice; and competition, does also require significant large scale investment. Investment is expected to be made by an industry that has very long churn cycles, which also operates in an environment that maximizes its assets.

We believe that through our experience and partnerships, we can realize innovation; choice and emergent requirements of both the industry and other stakeholders, whilst offering better return on investment and total cost to serve models as illustrated by our present global successes.

Please find in our appendixes our responses to your September 28<sup>th</sup> 2010 due date questions.

We recognize that a number of the areas covered in this response will need further dialog and we would be only too pleased to meet with you to do so.

Yours sincerely

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## Appendix A

Response to questions listed in latest Ofgem/DECC consultation due date September 28<sup>th</sup> 2010 (questions 3, 6, 7, 16, 17, 18, 19, 20)

<http://www.ofgem.gov.uk/e-serve/sm/Documentation/Documents1/Smart%20metering%20-%20Prospectus.pdf>

A3: Our experience has afforded us a comprehensive understanding of how to deploy a customer centric smart metering implementation program. For example Oklahoma Gas & Electric (OG&E) initiated a customer engagement program prior to and during their smart metering deployment. This produced a two-fold positive outcome; firstly customers were more engaged with the applications such as demand response which resulted in an unprecedented 18% reduction in peak load requirements compared to a typical 3% benefit, and secondly OG&E brand credibility and customer satisfaction improved despite an increase in rate based costs. This was only achievable because of brand credibility and customer centricity defining the core of the program. Engagement; interpretation; and fandom, were at the heart of the program resulting in positive customer interaction; all these values generate trust through a self-governing code of conduct, something both our brands uphold.

A6: We endorse many of the statements in the prospectus with respect to the functional design requirements. We would like to further reinforce that there are three essential areas of functional focus which need to be embedded throughout all aspects of the Smart Metering Program; security; flexibility; and open standards to drive greater inter-operability. By ensuring that these considerations are fully realized, we believe through our experience, that not only an improved fit for purpose solution will emerge, but also competition and best in class services and solutions will arise. Such an environment will also enable future applications to be considered during roll-out thus preventing stranded assets and duplication of architectures to facilitate this emerging environment(s) of smart M2M capability.

We understand that there are many differing ways to deliver a world class program that can realize societal requirements today and in the future. Security for example, can be achieved in many ways through the partitioning of data and ownership of data sub-sets so no one system has the complete data file per individual. We believe that our combined experiences; footprints; solution suites and skills will enable that much greater choice and flexibility to tailor a solution for the requirements of all the principal stakeholders; government; consumers; regulators; retailers; and network operators.

Ultimately by employing these areas of concern within the functional design requirements, total cost of ownership should reduce due to the 'internet effect' whereby innovation will reduce operating costs, and expedite cost effective change, as requirements for smart metering develop through market maturity.

A7: Whilst the approach communicated to generate the functional requirements for the smart metering system is inclusive, we believe that it could also be 'over influenced' by many 'boutique' businesses that have little or no pedigree within this emerging market. Our present observations are that, some key stakeholders within the industry are being 'muted' because of the sheer scale of attendees to the design groups. Whilst we recognize the need to enable inclusivity to help proffer potential innovation, revised deadlines and implementation timescales will ultimately impact this approach dramatically. We need to rapidly formalize steering committees of those principle stakeholders and allow sufficient share of voice where appropriate.

If we are to deploy quicker than originally intended, then an industry self-governing and implementation approach may afford advantages. This approach could be regulated through a comprehensive set of SLA (Service Level Agreement) targets via either the DCC or Ofgem/DECC directly – these targets need to be focused but not cumbersome. Our experience has shown that self-governance, ensures rapidity and innovation, whereas over regulation will not only reduce innovation but also choice.

A16: As previously commented self-regulation through SLA targets, might provide an opportunity to enable suppliers to easier manage their internal processes and timescales. Local coordination will not only help optimize cost of implementation, but also help avoid duplication of asset services.

By allowing suppliers to choose and deploy the technology as appropriate within their industry should not only foster innovation and differentiation through services, but also realization of a true Smart Grid platform. This environment will enable greater choice of services and competition, whilst facilitating better customer interaction.



A17: If a comprehensive understanding of solution requirements is communicated prior to the formalization of the DCC, then pre-DCC roll out should not pose any complications. Failure to clearly communicate DCC scope and industry requirements will ultimately cause hidden costs, stranded assets and complications that will have to be absorbed by the consumer.

If the DCC scope is one of governance (SLA management), and data settlement (asset number and consumption), without the complication of MDMS tariff and personal consumer information, then pre-roll out becomes easier and less controversial. By segmenting data responsibility so that the DCC becomes a reservoir of DNO and Retail basic information (asset information and consumptive) only, we not only maintain existing customer ownership, but it also circumvents potential data provisioning arguments whilst increasing data security.

Such an approach of minimizing DCC impact will enable greater innovation and adaptability of program design/implementation to satisfy the emerging requirements of this process. Ultimately this type of approach will also drive competition in products and services as well as more aggressive pricing and choice to consumers.

A18: There are many differing implementation programs that could expedite roll-out. Whilst we recognize that choice, cost, flexibility, and security are fundamental design requirements; customer ownership is potentially the most relevant to market rollout. If we can ensure retention of customer relationships, previously controversial roll out methodologies can once again be considered.

One deployment approach is to enable DNO (Distribution Network Operator) implementation and roll-out programs. As DNOs connect renewables and electric vehicles to their LV networks, they will be required to deploy communications infrastructure; this communications infrastructure should be leveraged for Smart Metering. Decoupled from the deployment of the communications network, the deployment of the meters will still be Supplier led. This form of implementation program would emulate other territories where roll out has been successful (such as the USA), as there is direct geographic responsibility for meeting targets and SLA terms. You would not only be able to optimize the deployment routes, but also increase the number of daily installs (in the USA they install under 3 minutes due to proximity of install routes and meter design). This approach would also ensure communication infrastructure cohesiveness for Smart Grid and Metering applications, thus reducing the potential of stranded or non-conforming assets. It would also allow for a different data provisioning model that better suits the requirements of a responsive and timely Smart Grid environment.

An alternative to DNO implementation is to franchise MOP (Meter Operator) activities by geography – possibly similar to the DNO areas. This methodology would ensure the benefits of daily install optimization and route planning, but enable choice of deployment technology and infrastructure to remain with the suppliers.

If customer data and ownership can be assured then we believe that either proposed methodology would enable realizable logical deployment benefits.

A19: If there is a need to expedite the agreement of technical requirements and specifications, then we can only reinforce previous commentary. If we rationalize the number of participants, to those with industry expertise and pedigree, and reinforce the messages of open-standards and inter-operability, we will be able to mitigate much risk within a truncated timeline.

Open standards such as IPv4/6 will enable the program to grow and 'graft' new products and services as the market matures and requirements grow. Only by focusing on a universal standard, and recognized standards either already existing, or about to exist in relevant standards bodies, can we expedite this process with a degree of surety.

In all of our previous communications our beliefs have never changed, by focusing on security; flexibility (incl. scalability); and open-standards, we will be able to deliver a solution that accommodates the immediate and emerging requirements of a smart metering. Failure to implement these beliefs within this process will generate risk and future requirement shortcomings as the market matures.

A20: We believe that as the program develops and grows, that so too will the management principles and the proposed governance. As timelines become truncated and design specifications more aggressive, more self-governing may be required to realize the overall implementation goals as will lines of ownership and demarcation. Naturally the communicated methodology and its' management are presently appropriate and suitable, we would however request that they also remain flexible, so that by working together they too can change if required.



## **Appendix B                      Telefónica O2 Company Overview**

Since the inception of mobile technologies O2 has been a leader in the delivery of mobile data in the UK. We remain at the very forefront of delivering mobile data solutions to help make our customers more effective and efficient in the operation of their own businesses. We have many years of experience with our network and data specialist sales teams providing the foundation on which our major customers, service providers and application developers build their own applications.

We have and continue to invest in our network, our range of devices, and our partner arrangements to ensure that our customers have the best end-to-end experience when it comes to deploying our wide range of mobile applications. Network coverage and capacity is vital when it comes to delivering the levels of performance our customers require.

Additionally, the ability to upload/download data, wherever and whenever you need to is paramount. Which is why it's reassuring to know that O2 was the first network to offer coverage for 99% of the UK population.

The O2 network covers 90% of the UK landmass. Every day it carries 93 million calls and 300,000 texts. Our service is always improving – and to achieve such consistent and reliable coverage O2 has invested over £2bn to date, and is currently investing £1m per day every day, – further improving quality, capacity, coverage and capability. That work and investment continues apace, with O2 engineers covering more than 500,000 miles a year to test and tend the network. We also apply Ofcom criteria and carry out ongoing analyses of where customers use the network most. It is important to add that because O2 is founded on the brand values of – among others – ‘openness and honesty’ our customers have access to our unique Network Manager Service, providing them with network performance information about their SIM cards.

O2 is committed to demonstrating clearly and powerfully what customers can do with new data services, devices and technology. O2's approach focuses around working in partnership both with customers and suppliers alike and it is this core strength that makes O2 an ideal supplier of network services for Smart Metering.

Telefónica O2 UK Limited is part of Telefónica Europe plc, a business division of Telefónica S.A. which uses O2 as its commercial brand in the UK, Ireland, Slovakia, Germany and the Czech Republic. Telefónica Europe also owns 50% of Tesco Mobile, which operates in the UK and Ireland, and 50% of Tchibo Mobilfunk in Germany. Being part of the Telefónica group allows us to leverage expertise, scale and capability from across our global footprint.

O2 is widely regarded as a market leader in the provision of secure mobile network technologies supporting a wide range of Machine to Machine (M2M), Telemetry and Telematics applications.



These are deployed via a number of application developers and partnerships who recognise the value in utilising the UK's best performing network to provide the carrier layer for their applications. Our Partner Network operates across many market segments including:

- Utilities
- Journey Management/Navigation
- Fleet management
- Asset tracking
- Stolen Vehicle recovery
- Health and Education
- Mobile Payments
- Security
- Loan Worker
- CCTV

O2 has the industry's longest-established dedicated Machine to Machine (M2M) team that focuses on M2M applications, supporting infrastructures and market demands as well as providing dedicated and specialist support to our market leading partners in the areas of:

- Automatic Meter Reading – increasing requirement due to a need for energy monitoring and carbon reduction through SMART metering using a dedicated M2M SIM card rather than a meter reader.
- Parking Meters – GPRS enabled parking meters reporting status, received payments, maintenance requirements, etc.
- Vending Machines – providing stock replenishment requirements, payments and alarming over O2's GPRS network
- Fleet Management – from tracking of vehicles to route optimisation and load security. Refuse collections and information surrounding which routes have been 'gritted', when and to what distribution level.
- Asset Tracking – stolen vehicle recovery, high value goods or emergency assistance for lone or vulnerable workers.
- Intelligent buses and bus stops – providing continual location information revenue collection and route optimisation information to bus operators.
- Alarm Systems – providing dual path alarm systems (ADSL/PSTN/IP with GPRS back up)
- Mobile Payment Terminals – electronic POS systems that operate over GPRS to authenticate and authorise payments.
- Traffic control systems – utilising wireless technologies to control the flow of traffic around our towns and cities.
- Track-side data logging – collecting information on track temperature, etc.
- Train systems – providing information on position, speed, driver controls, etc.
- CCTV – developments in using wireless enabled CCTV cameras to broadcast images and instructions.

This provides us with experience and insight across a wide range of market segments which enables us to better understand the potential needs that the UK Smart Metering deployment will have.



## Appendix C

### Silver Spring Networks Company Overview

#### Overview

Silver Spring Networks (<http://www.silverspringnetworks.com>) is the leading Smart Grid platform, working with some of the world's largest utilities, including Pacific Gas & Electric, Pepco Holdings, Florida Power & Light and Oklahoma Gas & Electric.

The Smart Grid transforms our electrical system into a modern network that empowers utilities and consumers to revolutionize how we create and consume energy. Silver Spring Networks provides hardware, software and services that connect every device on the grid, creating a wireless communications network, enabling utilities to improve energy efficiency, empower customers and ensure reliable delivery of low-cost services.

Over this unified network, utilities can deploy any number of advanced applications, such as Smart Metering, Demand Response, Distribution Automation and Distributed Generation, and allow devices such as meters, load management controllers and plug-in vehicle applications to communicate with each other and the utility.

#### Company Information

Founded in 2002 and headquartered in Redwood City, California, Silver Spring Networks is a privately held company backed by venture capital funding from Northgate Capital, Foundation Capital and Kleiner Perkins Caufield & Byers. The company has over 200 employees and a global reach, with partnerships in Australia, the United Kingdom and Brazil. SSN has deployed hundreds of thousands of networked devices and endpoints and in 2009, SSN will continue roll out of more than 2 million endpoints.

In 2008, the World Economic Forum honored Silver Spring Networks as a Technology Pioneer.

#### Management Team

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*Energy Facts*

The Department of Energy estimates a 40% increase in U.S. demand for electricity by the year 2030.

By minimizing or eliminating interruptions, the self-healing grid could save industrial and residential consumers over \$100 billion per year.

The number of electronics products per household has doubled since 1997, and they consume 11 percent of residential electricity, according to the Consumer Electronics Association.

Smart grid will deliver energy savings of 5 to 15%. With 124 million households now paying an average of \$1200 per year (DOE EIA data), total residential electricity bills add up to \$148 billion. The 5 to 15% savings gets you \$7.5 to \$22 billion per year.

The Electric Power Research Institute (EPRI) has estimated that here in the United States, a Smart Grid would reduce carbon from electric power by 25% or roughly 10% of overall U.S. CO2 emissions. This savings is estimated to have the same impact as removing 140 million cars from the road.