

EDF Energy Response to

DECC/Ofgem Smart Metering Implementation Programme Prospectus Questions

October 2010

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1. Executive Summary

EDF Energy supports the coalition Government's renewed commitment to delivering Britain's low carbon future. As expressed by Ministers, we also believe a range of solutions must be pursued, not just in delivering these targets, but in achieving a low carbon economy where the consumer receives tangible benefit. So while our commitment to decarbonising Britain's generation fleet through substantial new nuclear investment is well known, we also recognise the critical importance of engaging the consumer in managing their energy use and associated carbon emissions, and the vital role that Smart Metering will play in delivering this objective. Smart Metering will bring with it a paradigm shift in our Industry, empowering the consumer and providing the foundations for full end-to-end management of the Energy Infrastructure.

EDF Energy is fully committed to supporting DECC/Ofgem in planning and delivering the GB Smart Metering programme and we are passionate about ensuring its success. In our response to the questions due on 28 September, we set out four fundamental principles which we believe are critical in underpinning success:

1. Placing a strong emphasis on health and safety
2. Minimising the cost to the consumer
3. Reducing risk through robust governance, effective planning and thorough testing
4. Delivering an optimal and enduring solution for the consumer and industry participants

We consider that these principles are also central to responding to the questions due on 28 October, as we set out below. We remain convinced that the ultimate success of this ambitious programme depends critically on the incorporation of the principles outlined above.

EDF Energy would like to make some clear recommendations with regard to the aspects of the programme where responses have been requested by 28 October where we believe that the principles above must be considered.

Project governance

As we indicated in our September response to the Prospectus, EDF Energy would recommend that a properly orchestrated and sponsored project is launched urgently, utilising formal project methodology, with clear definition of roles and responsibilities, resource planning, detailed project plan, and supported by a full Project Initiation Document (PID) and budget. EDF Energy believes that a programme of this magnitude must be built upon an optimal design, based upon the principles established by the Prospectus, and against a realistic timetable that accommodates the high level of quality needed to address the substantial risk exposure. EDF Energy is concerned that the significant risks associated with successful delivery of this project are not being fully recognised and that an appropriate risk management strategy is not yet being implemented. We observe that, to date, there has been no comparable rollout of this size into a competitive market. In countries where rollouts have occurred, there have been considerable issues and a substantial number of programme failures to meet the original objectives. This leads us to conclude that a business assurance framework is

essential as part of the governance arrangements, together with the appointment of an independent auditor.

Timing

As we indicated in our September response, EDF Energy would strongly counsel against the creation of a non-strategic solution which would divert effort and focus from delivering an optimal long-term outcome. Rather, any interim arrangements should form part of the overall delivery plan for the DCC and associated industry changes, and be implemented only if the plan can incorporate them as a logical deliverable. EDF Energy would seek to accelerate the delivery of the DCC, and enduring industry systems, in order to negate the need for interim arrangements while still supporting the early delivery of benefits to the consumer.

It is clear from the current debate on 'Interim Interoperability' that this is a highly controversial and sensitive issue where reaching agreement may prove challenging. We are fully engaged in this dialogue and have made a substantial contribution to the ongoing discussions in this area.

The Prospectus confirmed that 'early movers shall do so at their own risk'. EDF Energy would expect this intention to be reflected in the mandate, in the form of all non-compliant Smart Meters being replaced with compliant systems as soon as practical or at the latest, within the rollout period for smart. Failure to act on this basis would leave a residual volume of non-compliant meters in circulation which would go against the intention of the mandate/impact assessment, disadvantage consumers and potentially interfere with competition. EDF Energy would also expect any non-compliant Smart Meter to be able to revert to existing operational legacy processes at no commercial disadvantage to other industry participants. EDF Energy recommends that non-compliant Smart Metering systems should not be accommodated in either the interim or enduring solution, unless they could be supported without impacting the optimal provision of those services and the Supplier concerned was prepared to fund any system changes required.

Rollout strategy

EDF Energy continues to firmly believe that the rollout of Smart Meters must be carefully coordinated by Suppliers and the regulator in order to avoid the risk of major programme failure. As we indicated in our September response, the rollout should include a pilot phase where industry participants, consumers, Suppliers and the regulator can gain confidence that the GB rollout will be successful. This should be followed by a period of controlled market start-up where volumes are constrained and key stakeholders can share lessons learned whilst systems, processes, security, and the supply chain are tested at increasing scale. Failure to manage the opening of the market will result in a 'free-for-all' which may damage consumer confidence and result in high profile and costly failures with large volumes of meters installed.

The Prospectus confirmed that 'early movers shall do so at their own risk', and EDF Energy would expect this intention to be reflected in the mandate, in the form of all non-compliant Smart Meters being replaced with compliant systems as soon as practical or at the latest, within the roll-out period for smart. Failure to act on this

basis would leave a residual volume of non-compliant meters in circulation which would go against the intention of the mandate and impact assessment, disadvantage consumers and potentially interfere with competition. EDF Energy would also expect any non-compliant Smart Meter to be able to revert to existing operational legacy processes at no commercial disadvantage to other industry participants. In respect of PPM/PAYG metering, EDF Energy is concerned that any 'early solutions' may prove difficult to replicate by a new Supplier, and this may distort market competition through restricting the opportunity for Customers to switch.

Accelerating the volume roll-out in 2012/13 means that Suppliers will be required to ramp up to almost full installation capacity in a very short space of time (6-12 months) which brings a number of significant risks

EDF Energy believes that any interim arrangement places an unacceptable burden on industry and the consumer for the sake of accelerating roll-out potentially by a period of 12 – 15 months and estimates total industry costs could be between £100 - £500m in excess of deployment costs, depending on the option chosen, and uncertain benefits.

Impact Assessment

We consider that it is critical that DECC and Ofgem continue to scrutinise the assumptions made within the Impact Assessment (IA) to ensure that policy decisions, in particular those relating to rollout phasing, are made on the basis of current and valid understanding of the costs, risks and benefits of the Smart Metering programme.

From our discussions with DECC and Ofgem, it appears that some aspects of the IA employ different assumptions than those made by EDF Energy for our own business planning purposes. Potentially, if the IA were to be revised to reflect some of EDF Energy's assumptions, the conclusions of the IA might be different. In particular, we note the following apparent differences between the IA and our current planning assumptions:

- **Meter life:** The IA employs a 15 year meter asset life whereas our current understanding is that there is currently little confidence from the Meter Asset Provider (MAP) market that meters of this life will be available in the early stages of the rollout.
- **Electricity meter installation cost:** The IA assumes an installation cost that appears to be significantly lower than our current estimate.
- **IT costs:** The IA appears to have a significantly lower estimate for Supplier IT costs than our current assumptions.
- **Benefits:** The IA appears to include higher expected benefits than we currently assume in areas such as carbon reduction, energy savings, remote disconnection, Pre Payment Meter (PPM), Change of Supplier (CoS) premium, switching and theft. The process for achieving these benefits remains largely unclear at this stage.
- **Risk:** The IA appears to lack an adequate quantification of risk, with only a relatively small optimism bias included to model all risks associated with this massive programme.

Consumer protection

EDF Energy firmly believes that it is imperative that consumer's experience of Smart Meters must remain central to the consideration of all elements of the programme. We strongly support the need for robust consumer protection in the smart market. Industry participants need to agree what constitutes acceptable conduct during installation visits and set this out in a voluntary industry-wide Installation Code of Practice, which we will support by our own Consumer Charter. We also consider that sales and marketing activities during the installation visit and Health & Safety concerns need to be included within the Installation Code.

Data privacy and security

It is critical that consumer data is secure at all times. However, we recognise that many benefits associated with the introduction of Smart Meters are based on access to consumption data. EDF Energy believes that there is an urgent need for clear privacy and security requirements to be set out in a Privacy & Security Charter to ensure that consumer's data is only available to authorised parties. The charter should be introduced in good time to apply to any interim arrangements imposed as a result of Staged Implementation.

EDF Energy believes that industry participants must work together to ensure that all our obligations concerning consumer data (i.e. the Data Protection Act) are met for the data processed within the Smart Metering system. Suppliers need unrestricted access to the data necessary to perform their statutory duties, and the industry needs to examine the practicalities of obtaining and recording consumer consent to use the data for all other purposes.

Regulatory and commercial framework

EDF Energy remains concerned that the regulatory and governance framework is not sufficiently developed to support the interim arrangements required for Staged Implementation or an accelerated deployment of Smart Meters. We welcome the proposal to create a single Smart Energy Code (SEC) covering both gas and electricity, and believe that it should span both interim and enduring arrangements to minimise risks and costs of transition between the two 'stages' if interim were to proceed. We have made some recommendations for additional SEC provisions. We consider that the SEC should be governed by an elected panel with an elected chair and elections should take account of market share in the voting arrangements.

Any regulatory framework applied must allow us to recover our 'reasonable costs', in undertaking this substantial investment, and to secure finance in advance of our commitment to comply with any change in our licence obligations.

In Home Display

We believe that Suppliers should offer In Home Displays (IHDs) to consumers with a 12-month warranty period, such that the consumer becomes responsible for ongoing care and maintenance after 12 months. This maintenance may revert to the Supplier where the IHD is integral to the successful operation of two-way communications such as

required for pre-payment and PAYG services. However, EDF Energy would prefer that customer dependency on the IHD is minimised, other than entering a code for top-up where the WAN is temporarily not working, or reconnecting Supply, if no other option is available.

In respect of the use of the IHD for the provision of 'Account Balance', if mandated, EDF Energy would propose that this is only provided on an agreed time interval and as an approximation of the full bill amount to avoid the need for dynamic re-calculation of the bill adjustments on each and every request.

We also consider that the display of CO₂ should be included in the information mandated for the IHD to further incentivise energy savings.

Non-domestic sector

We believe that the market design chosen for the non-domestic sector should be the same as for the smart domestic sector (mandating the use of the DCC), except where the consumer chooses the large business advanced metering option. We believe any rollout targets should also apply to the non-domestic market.

2. Background

The DECC/Ofgem Prospectus was issued on 27 July 2010. This sought two different deadlines for responses. Questions on rollout strategy, implementation approach and functional requirements required responses in September to facilitate earlier decisions. This letter provides the remaining responses due on 28 October 2010.

These responses cover the following areas:

- Data privacy and security;
- Consumer protection;
- Energy displays and information provision;
- The approach to smaller non-domestic consumers;
- Responsibilities for customer premises equipment;
- Your proposal for a new Smart Energy Code; and
- The establishment and scope of the central data and communications function

We responded to 39 questions in September. This document responds to the remaining 76 questions:

- 12 in the Prospectus
- 17 in Customer Protection
- 5 in Data Privacy & Security
- 15 in Regulatory and Commercial Framework
- 8 in Communications Business Model
- 8 about In Home Displays
- 11 about the Non-Domestic Sector

EDF Energy's responses reflect our view on individual questions based upon the Prospectus. However, we would advise DECC/Ofgem that if changes were made to the overall programme in reaction to our or other's recommendations, then our specific responses would need to be reconsidered in the light of the resultant overall proposal.

3. Prospectus

Prospectus - Question 1

Do you have any comments on the proposed minimum functional requirements and arrangements for provision of the in-home display device?

EDF Energy believes that the provision of information to customers is crucial if we are to realise the benefits of Smart Metering, especially in the early years. Providing customer with clear digestible data about their consumption, spending on energy and associated emissions may have a beneficial impact on the consumer's energy consumption behaviour. However, this is an area where technology is still relatively immature and the latest devices are mostly unproven. It is important that we are able to retain flexibility in this area so that Suppliers (and other parties) can develop and provide more innovative and effective technology that delivers the required information to the consumer.

EDF Energy believes, based on feedback from our EDRP trials, that customers react better to consumption expressed in monetary terms than they do to consumption expressed in energy terms (£s are better than KWh). We would support requirements to provide KWh and indicative spend to the customer.

It is not possible for IHDs to replicate the true billing algorithms and display true billing levels. Therefore, any requirement to provide monetary levels should be for indicative rather than true levels. We will also need to approximate calorific levels to convert gas volumes into energy and then monetary levels.

In order for Customers to appreciate the significance of their impact on the environment, and to understand the consequence of how they use energy, CO₂ should be included in the minimum requirements for the IHD.

Prospectus - Question 2

Do you have any comments on our overall approach to data privacy?

EDF Energy believes that data privacy is a key consideration for Smart Metering. All customers should have absolute confidence that we use data about their energy consumption appropriately and that we will respect their privacy. Privacy is a fundamental requirement of the system and process design and we support the "privacy by design" principle.

Privacy failures and customer concern over privacy, real or perceived, have the potential to undermine the benefits of Smart Metering. It is important that Ofgem and the industry collates and builds robust privacy requirements into the enduring design for Smart Metering. Many interested parties are likely to have privacy concerns and it is important that the industry design assess them all. We believe that an industry design authority that would oversee the entire end to end solution for Smart Meters would ensure best practice is applied and maintained as needs change.

We advocate that the privacy standards should be included in a performance assurance framework within the SEC to ensure that all Smart Metering components and parties adhere to them. This should cover what data we need to treat as private, where it is stored and for how long, how customer consent is given and recorded and how the SEC will assure and police privacy provisions.

If we are all to follow the “privacy by design” principle throughout the entire design process, then it is essential that Ofgem establish the basic privacy requirements quickly. This will allow all designers to make consistent solution decisions that maintain a consistent level of privacy throughout end to end Smart Metering solution. Overall privacy protection will only be as good as the least private part of the process without consistent privacy requirements there is potential for costly privacy measures to be rendered ineffective.

It is important that Ofgem apply the same privacy principles to any deployment ahead of a full SEC and DCC.

We believe that it is important that we align UK privacy provisions with equivalent EU provisions and standards.

We would welcome Ofgem’s view on the customer’s obligations around data privacy and how it relates to other members of the household whose privacy might be invaded should the data be misused.

Our industry needs to be at least as trusted as other industries regarding sensitive data e.g. phone records, text message content, ISP records, credit and store cards. As 30% of the DECC IA benefits cover the value of CO2 reduction, we should be able to use the data to engage the customer regarding energy advice.

Please refer to our answers in the section titled “Security & Privacy”.

Prospectus - Question 4

Have we identified the full range of consumer protection issues related to remote disconnection and switching to prepayment?

EDF Energy are concerned that insufficient work to identify all the customer protection issues has taken place. We strongly believe that an industry design authority should consider these issues and provide confidence that they have identified the full range of customer protection issues.

The ability for Suppliers to disconnect customers remotely requires customer protection but we believe that the protections in existing legislation for disconnection are sufficient to protect Smart Metering customers. We fully expect to increase the protection to all customers through improved functionality and better information provision afforded by Smart Meters.

EDF Energy does not believe that Ofgem needs to mandate that we maintain existing “Top Up” arrangements for customers without bank accounts. We would hope to give customers a choice of “Top Up” options that work for them. We can envisage many other payment methods that would remove the need for vending outlets while

facilitating a PAYG customer without a bank account or credit card. E.g., scratch card sales, money transfer services, supermarket or filling station point of sale equipment.

We anticipate some minor problems around re-enablement where gas and electricity are both disconnected and IHD or alternative device interaction is necessary to re-connect the energy supplies. This may require the customer to re-connect the electricity supply before the gas supply unless IHDs have a battery option.

Please also refer to our answers in the section titled "Customer Protection".

Prospectus - Question 5

Do you have any comments on the proposed approach to smaller non-domestic consumers (in particular on exceptions and access to data)?

EDF Energy believes that wherever possible the same rules should apply for smart non domestic as do for smart domestic. There are some situations where this is not possible or appropriate and we should manage these by exception rather than creating a separate set of rules for non-domestic premises. Access to data, security and privacy arrangements should be the same as for domestic premises.

It is important that we respect the choices that our customers have made and continue to support the existing AMR arrangements.

Please refer to our answers in the section titled "Non-Domestic Sector".

Prospectus - Question 8

Do you have any comments on the proposals that energy Suppliers should be responsible for purchasing, installing and, where appropriate, maintaining all customer premises equipment?

EDF Energy believes that it would be preferable if the network operators owned the Smart Meter assets installed at a customer premises. Funding of assets is proving to be a significant challenge, driven by uncertainty over requirements and timing of standards, asset life, lack of technical and commercial interoperability, obsolescence and other factors. As a result, commercial funding partners are currently unable to provide Suppliers with off balance sheet, non-recourse funding. This means that Energy Suppliers and hence Customers, will be forced to absorb an increased element of risk/cost in relation to software and the technology components in the meter where sufficient confidence has yet to be established.

EDF Energy would suggest that many of these factors could be mitigated if the assets and associated rollout costs were governed and delivered via a regulated arrangement, using the existing Network Operators. This would normalise prices, potentially increase asset life, deliver interoperability through asset standardisation, provide structured change control, and secure the lowest cost of capital.

EDF Energy maintains its support for DECC's requirement for a Supplier led rollout and this approach would simply secure regulated and lowest cost provision of assets to the

energy Supplier. In addition, it would engage the Network Operator in the procurement of 'Smart Grid' related functionality and funding. At this time, EDF Energy regards this as the best option for ensuring lowest cost to the Consumer for the delivery of Smart Metering.

EDF Energy believes that the DCC should be responsible for all communication including the WAN communication unit and the HAN as well. In terms of hardware EDF Energy would prefer a Smart Meter with provision for a WAN module, owned by the DCC. However, it is accepted that some Suppliers might prefer a separate WAN unit hub which would have provision for a removable WAN module owned by DCC. The latter would most likely be installed where the lead Supplier is solely installing a gas meter. In both cases modularity is essential to minimise the cost of a WAN module replacement in the event that advances in technology renders the communications solution redundant. In instances where a separate WAN unit is installed it must be identifiable by means of a unique identifier both physically and electronically. This is particularly important for situations where the WAN unit (due to space limitations) is located some distance away from the meter position. The HAN technology could also be incorporated in the same module as the WAN communications, but this would imply the HAN being the responsibility of the DCC. This would be acceptable so long as sufficient safeguards are in place to ensure Suppliers freedom to innovate in the home energy services market is not curtailed by the DCC. The DCC would also be responsible for ensuring interoperability for the HAN. Where customers introduce devices to the HAN an auditable joining process to ensure the continued security and integrity of the HAN (and WAN) will be required.

We also believe that there should only be a single visit to each site. We would install all the necessary equipment, including the DCC's WAN module, during this visit. We would like Ofgem to endorse the concept of bilateral courtesy installation agreements to ensure that single visits can operate where a customer contracts with two Suppliers.

We agree the Supplier should be responsible for installing the IHD, when installing the Smart Meter. We believe that when possible IHDs should be a customer owned device. We envisage a situation where customers will purchase IHDs that suit their style and home life. We also envisage technology providers incorporating IHDs within other household devices like intelligent thermostats, telephones and home automation systems. Therefore, we should provide IHDs in the initial rollout where the customer wants it and that we should bestow these upon the customers with a suitable warranty, thereafter they become the customers' responsibility.

The IHD should be owned by the consumer post installation, such that they are responsible for ongoing care and maintenance after 12 months. This maintenance may revert to the Supplier where the IHD is integral to the successful operation of two-way communications such as prepayment and PAYG services introduced in the longer term. However, EDF Energy would prefer that the IHD has no role in the prepayment architecture (other than entering a code for top-up where the WAN is down). We would welcome more analysis to decide who would be responsible for the IHD where the customer takes PAYG energy from two different Suppliers at the same time (e.g. Gas and Electricity).

Where a customer has two energy Suppliers at the same time and one Supplier corrupts the IHD, for example by downloading untested software, this Supplier should take responsibility for the problem. We not believe that the “Lead Supplier” concept will be workable or equitable.

Everyone will need to comply with WEEE and Waste Battery & Accumulator Regulations for disposal etc.

Please refer to our answers in the section titled “In Home Display”.

Prospectus - Question 9

Do you have any comments on the proposal that the scope of activities of the central data and communications function should be limited initially to those functions that are essential for the effective transfer of Smart Metering data, such as data access and scheduled data retrieval?

Yes, we agree that the initial functional scope of the DCC should consist of those elements positively identified as in scope in the prospectus (i.e. communications between industry parties and the Smart Metering system, translation services, scheduled data retrieval, access control and monitoring & assurance). The impact of including any non-essential elements within the scope of the DCC will be to extend the timescales and add extra costs.

Where other activities can potentially be brought within the DCC’s scope (such as registrations and data collection and aggregation) this should not take place until the core services are established and working well. This should only take place if a positive cost benefit case can be proved. EDF Energy believes that an industry design authority should establish a complete set of requirements for DCC. We believe that this will reduce risk to the industry and significantly increase the probability of a successful Smart Metering implementation.

Based on our current assessment of requirements EDF Energy supports the following functions for DCC:

Communications	Between Supplier and Smart Meter
Translation Service	To ensure common Supplier messages
Scheduled Retrieval	To retrieve regular cyclical readings (only)
Access control	To ensure security and privacy
Monitoring & Assurance	To report Smart Metering performance

EDF Energy believes that DCC will also need a performance assurance function in addition to its procurement function to cover:

Entry Testing and trialling	To ensure all participant's systems and processes work as intended and together
Certification	To ensure that all technology components work together
Accreditation	To ensure that all parties perform adequately
Performance	To monitor parties ongoing performance
Audit	To ensure all processes are operated as intended
Scrutiny	To ensure correct operation of DCC

We assume that Translation Services will fulfil all the services that Ofgem programme's design requirements have indentified.

Note: We are unsure if a requirement to access the meter without intervening translation services exists. Such a capability may serve to support unidentified communication types or to support contingency processes. This is a clear example of why we advocate an industry design authority to address these types of questions now and going forward.

EDF Energy would also support the addition of other centralised services where a clear benefit can be demonstrated for the Suppliers and Customers through reduced costs of delivering the service through a single provider. It is however critical that any inclusion of such services are planned by a design authority' so as not to interfere with initial Smart Meter rollout or other significant change programmes.

Prospectus - Question 10

Do you have any comments on the proposal to establish DCC as procurement and contract management entity that will procure communications and data services competitively?

EDF Energy support DCC as a procurement and contract entity for communications and data services companies. This should cover all communications required by Smart Metering. It is important that the DCC considers longer term requirements when procuring communication services; it may be that the best solutions for the industry and consumers longer term will require some commitment to develop and establish infrastructure before the full benefits are realised. It is also essential that all safety concerns are addressed associate with the technologies.

In addition, DCC must be established in a manner which ensures full ongoing operation of the Competitive Supply market, albeit subject to a 'pilot phase' and 'controlled market start'. The DCC must procure services that enable 'National Coverage' to be delivered quickly and efficiently, and not distort market competition.

It is important that the DCC licence and the associated Smart Energy Code includes suitable governance arrangements that allows all parties appropriate involvement in the ongoing operations and development of the service. Parties should have a say commensurate with their contribution to the costs of the service.

Please also refer to our answers in the section titled "Communications Business Model".

Prospectus - Question 11

Do you have any comments on the proposed approach for establishing DCC (through a licence awarded through a competitive licence application process with DCC then subject also to the new Smart Energy Code)?

EDF Energy believes that Ofgem should consider all options for forming the DCC. We support a competitive licence award, governed by the SEC, to allow commercial forces to promote efficiency and innovations. For example, one option is for a Transmission Operator Licence condition to form DCC, like that used to form the BSCCo, which may result in simpler contractual arrangements and a familiar governance model. We are aware that there are many organisations and consortia with an interest in taking on the licence and its substantial obligations. Ofgem should publish its full acceptance criteria for awarding the licence.

We need an appropriate charging mechanism for DCC to ensure equitable and reasonable charges are applied, recognise usage by all participants, and the addition of new services and all clients sharing the infrastructure. It will be important for Ofgem to balance quality and costs when making its decision to appoint the DCC. If Ofgem awards DCC as a competitive licence then we will need strong income controls to ensure value for money without undermining incentives for innovation, efficiency and flexibility. We are concerned that DCC as a monopoly provider of services could exploit that position and increase costs for customers. It will be appropriate to have some tight controls over charges, cost recovery and contract performance. Suppliers as key users of the DCC should have a significant say in DCC performance management.

As the provider of central communications, the DCC has the advantage if it were to provide services in competition with its primary users. We welcome Ofgem's intention to restrict the services that DCC can provide such as energy management and efficiency service. We would want this prohibition extended to any service in competition with our services. If a larger organisation provides the DCC service, we would welcome requirements for solid 'Chinese Walls' with audit controls between DCC and other activities within that concern.

Please refer to our answers in the section titled "Communications Business Model".

Prospectus - Question 12

Does the proposal that Suppliers of smaller non-domestic customers should not be obliged to use DCC services but may elect to use them cause any substantive problems?

EDF Energy believes that wherever possible the same rules should apply for small smart SME sites as for smart domestic premises. Keeping the arrangements consistent with domestic will result in simpler processes and reduced costs to customers. There are some situations where consistency is not possible or appropriate and we should manage these by exception rather than creating a separate set of rules for non-domestic premises. We do not believe that it is necessary to mandate gas valves or IHDs for Non-domestic customers. We do believe that an exception for AMR type meters is appropriate.

Please also refer to our answers in the section titled "Non-Domestic Sector".

Prospectus - Question 13

Do you agree with the proposal for a Smart Energy Code to govern the operation of Smart Metering?

EDF Energy supports the creation of single Smart Energy Code and governance body to govern all aspects of Smart Metering, and possibly elements of legacy metering as appropriate e.g. registration. We believe that this can provide a simpler solution than the current dispersed governance arrangements and increase clarity and reduce costs to the customer. Where Smart Metering requirements overlap with other industry codes the Smart Energy Code should take primacy.

Any regulatory framework applied must allow us to recover our 'reasonable costs', in undertaking this substantial investment, and to secure finance in advance of our commitment to comply with any change in our licence obligations.

All parties that are involved in the Smart Metering systems should be directly subject to the code and therefore be required to accede to the Smart Energy Code. This will require a suitable accession process that could include appropriate accreditation and entry testing requirements.

The Smart Energy Code should include suitable governance arrangements that allow all concerned parties to participate in the governance process. We would like to see an elected panel and chair to oversee DCC operations and code modifications. We believe elections to the panel should give those that pay the most the largest say.

EDF Energy does not support Smart Energy Code compliance through a contractual mechanism; we believe that code accession should suffice. There are numerous examples in gas where Suppliers have been unable to enforce arrangements with their agents to comply with industry processes through contracts alone.

We urge Ofgem to consider what mechanisms we need in order to avoid conflict with existing industry codes. We anticipate the need for a blanket process to govern these changes effectively and consistently to remove elements of conflict and duplication. This governance process will need to maintain legacy arrangements for existing dumb meters avoiding escalating costs to consumers. Ultimately, we will need to ensure an orderly shutdown of the legacy arrangements without unduly increasing costs. We therefore support a freeze on legacy industry change and Ofgem introducing emergency smart change proposals at the appropriate time.

Please also refer to our answers in the section titled "Regulatory & Commercial Framework".

Prospectus - Question 14

Have we identified all the wider impacts of Smart Metering on the energy sector?

Suppliers will need to make significant changes to their back office systems to support Smart Metering, far in excess of the financial estimate included in the DECC Impact Assessment. This will require substantial investment in existing and new computer systems and processes. It is important that these changes are managed, planned and implemented to minimise costs. In addition, a large number of market participants are involved and a variety of different technical components sourced and owned by different parties, all of these parts and their interaction will require meticulous testing.

It is important that we develop a robust and achievable plan which covers all aspects of the Smart Metering programme. The plan should contain sufficient detail to ensure that industry participants can work together. This plan should allow sufficient time for adequate testing and trialling so that we can deliver an optimum and enduring foundation for Smart Metering.

In addition, we believe that wherever possible, optional processes and data items should be avoided, these usually hide a layer of detailed design that has not been properly analysed and defined. We believe that an industry design authority could address this problem.

There are two other areas impacted by Smart Metering in our business. There will be significant changes made in our field force organisation to cover logistic systems driven by volumes and timing, training and resourcing. There will be significant changes to our supply businesses which now become asset owning and managing organisations. Additionally in due course there will be other fundamental changes in our energy balancing system and customer relations as added value services are introduced.

Prospectus - Question 15

Is there anything further we need to be doing in terms of our ensuring the security of the Smart Metering system?

We need to ensure these Privacy and Security by Design principles are embedded in the DCG and SMDG work plans. The programme must engage with respected experts in

the successful delivery of secure systems and infrastructure, and ensure that continuous improvement is recognised and supported by all participants in the delivery and maintenance of the E2E Smart Metering solution.

Security must be designed into the solution, it cannot be retrofitted. The E2E system must be fully "penetration tested" as part of the pilot and should be signed-off by CPNI prior to go-live as part of their cyber-security responsibilities. In addition the solution should be subject to regular penetration testing and have continuous security monitoring and auditing.

Please also refer to our answers in the section titled "Data Privacy & Security".

4. Customer Protection

Customer Protection - Question 1

Do you have any views on our proposed approach for addressing potential tariff confusion? What specific steps can be taken to safeguard the consumer from tariff confusion while maintaining the benefit of tariff choices?

EDF Energy recognises the potential for customer confusion about the range of tariffs that Smart Metering can support. It is inevitable that tariffs that reward reduced and changed usage will be more complex than the single and two rate tariffs of today. However, we believe that it is in our interest to make these appealing to the customer and ease of understanding will be an important part of that process. We therefore agree with your proposal not to introduce any additional standards on top of those that already exist.

The full range of tariffs and integrated services linked to the tariff is potentially very large. These could include ToU, peak reduction rebates, dynamic pricing, variable peak rates, wind indexation, low carbon, etc. Any arrangements would need to be applicable to them all.

Prior to the full market operation, during 'pilot phase' and 'controlled market start', we would strongly support arrangements where Ofgem prevented Suppliers from offering overly complex tariffs, as this could lead to market confusion and significantly complicate E2E testing. However, we observe that Government is introducing new policies and innovation which would require new tariff mechanisms to be introduced. Creating a set of methods for simply telling customers about tariff performance is an important requirement going forward. It is important that these inform the customer while not reducing the Supplier's ability to offer innovative arrangements that bring about the benefits that we hope to gain from Smart Meters.

We would suggest that information about basic ToU tariffs be included in Ofgem's Smart Metering customer awareness programme.

Customer Protection - Question 2

Do you agree with our proposed approach for addressing unwelcome sales activities during visits for meter installation?

EDF Energy always avoids unwelcome sales activity at all times. We therefore agree that Suppliers and their agents should not be conducting unwelcome sales activities during a Smart Meter installation.

However, it is important that we can respond to a customer's request for information about our products and services, together with energy and cost saving advice, at an appropriate time and place. For some scenarios, this might be during or immediately after a Smart Meter installation. Suppliers are considering ways of doing this particularly during contact prior to any installation visit. We support the need for a

voluntary industry Code of Practice covering Smart Meter installation and the need for controls on sales activity during the Smart Meter installation visit, including all early roll-out activity and bogus caller protections. This should not preclude sales activity rather make sure that it is always welcome.

We welcome Ofgem's proposal for a workgroup on sales and marketing, including branding arrangements.

Customer Protection - Question 3

What do you consider as acceptable and unacceptable uses of the installation visit and why?

EDF Energy considers that generally it will be unacceptable to use a Smart Meter installation for purposes not related to the Smart Meter. However, it may be acceptable to utilise visits arranged for other purposes to install a Smart Meter as this could reduce costs to customers, or help the customer manage their carbon footprint. For example, a customer who is having a service alteration may get a new Smart Meter as part of the process through arrangements agreed with the Network Operator.

Some future site visits may install Smart Meters by default, for example new connections, meter exchanges and switching to prepay arrangements, or the provision of sustainability solutions, such as microGen, electric vehicles and other energy saving technologies. EDF Energy is fully aware of the implications of the 'Green Deal' and the need for Smart Metering to assist in the measurement of savings.

We believe that where a customer seeks information about other services that EDF Energy offers, it is appropriate for us to provide contact details for that information during or immediately after the installation. EDF Energy and our agents will adhere to strict rules to ensure that we do not subject our customers to unwelcome or unwarranted sales activities.

Customer Protection - Question 4

Do you agree with our proposed approach to ensuring that the IHD is not used to transmit unwelcome marketing messages?

EDF Energy supports the proposal that consumers should always consent to additional content delivered to their IHDs including information related to sales activities. We anticipate that IHD technology will improve and more innovative interactions with the consumer will be possible in the future. The use of these innovations may be conditional on receiving advertising content, and in those situations, customer may need to consent before and for as long as they take the service. We believe that customers should always have the option to opt out of receiving advertising content.

Customer Protection - Question 5

Do you agree that consumers should be able to obtain consumption information free of charge at a useful level of detail and format? How could this be achieved in practice?

EDF Energy agrees that consumers should have unfettered access to their consumption data. An industry design authority should consider how the customer will access the data and what type and level of data will be made available as part of the tariff contracted by the Customer.

We believe that the customer should be able to access their data via the IHD, or other interfaces including web services. If the Customer contracts with third parties to provide additional services, then the third party must make its own arrangements with the DCC to access the customer's data and present in an appropriate manner to their client. The DCC will need to make appropriate security arrangements for customers and their agents to access the meter without any ability to compromise the meter or meter data. With regard to the requirements to store 12 months of half-hourly data (DS.2) it is felt that such data should be retained on the customer's Smart Metering system. Clearly a suitably secure system needs to be devised which will allow the customer to authorise the release such data to a third party. At the time of writing it is understood that SMDG1 are considering the scope of such data storage since other quantities such as micro-generation and export values might also require inclusion.

Customer Protection - Question 6

Do you consider that existing protections in the licence are sufficient to ensure that consumers are not remotely switched to prepayment mode inappropriately?

EDF Energy believes that the existing protections in the Supply Licence are sufficient to protect customers from being inappropriately switched to prepayment mode. EDF Energy will operate internal controls to ensure that it does not breach these rules. However, it is conceivable that other parties may do this inadvertently. EDF Energy will operate a process to return customers quickly to credit mode where we have discovered this has happened.

EDF Energy believes that an industry design authority should consider what controls are necessary to avoid this in the enduring industry design.

EDF Energy will only switch a customer to prepay mode where it is safe and practical to do so. Switching will occur only after notice is given and permission is gained from the customer.

The position of the meter is especially relevant for Smart Meter PAYG arrangements. In the longer term, customers interactions within the process may not be with the meter but with the IHD or subject to suitable safeguards via other means e.g. mobiles phones or home automations systems.

EDF Energy agrees that we need a CoP to protect vulnerable customers who get into debt. These protections should include communication with the customer to verify their situation as well as to provide high quality information so the customer understands what the processes are and where they can get help. This may require a site visit where other communications have repeatedly failed.

Customer Protection - Question 7

Could provision of an appropriate IHD help overcome meter accessibility issues to facilitate prepayment usage?

EDF Energy believes that a suitable IHD could overcome accessibility issues for PAYG customers, but such arrangements would not be introduced until robust products, infrastructure and systems are fully tested. For customers on PAYG arrangements it may be appropriate for the IHD to include a battery so that it can still function without an enabled electricity supply (See also answers to IHD question 5). It may also be possible to use a mobile phone or similar device to provide the equivalent IHD functionality where appropriate. The use of an IHD for taking customer payments would be expensive. We wish to retain the option to use tried and tested channels for PAYG e.g. Internet, mobile phones, telephones etc. EDF Energy is also exploring other options to facilitate ease of PP/PAYG operation, with its Group Companies, where experience is already being established. We must not restrict the ability for innovation or new energy services by limiting the functionality on the IHD and mirroring that on the meter.

As the market develops we envisage other ways that we could use Smart Meters and PAYG arrangements to assist customers with accessibility issues to manage their energy supplies. This could include high accessibility IHDs, integration with automated medical alert systems or links to carers and relatives who we can keep informed of the vulnerable consumer's energy situation. In the event a PAYG customer with an inaccessible meter rejects an IHD, then the customer should be responsible for any required repositioning of the meter. It is accepted however that this is not always going to be possible and so consideration clearly needs to be given to other ways of dealing with this situation.

Customer Protection - Question 8

What notification should Suppliers be required to provide before switching a customer to prepayment mode?

EDF Energy believes that existing process and notice requirements are sufficient to protect customers that we might switch to prepayment.

We believe that the industry needs a common guide for switching customers between credit and prepayment mode. The guide needs to cover customers who request PAYG arrangements but more importantly customers that a Supplier wants to switch to PAYG for debt management purposes. Customers in that latter category are often in a stressful situation and the guide must recognise the difficulty that the Supplier has in communicating effectively with them.

Customer Protection - Question 9

Do you believe that Suppliers should be required to provide emergency credit and 'friendly credit' periods to prepayment customers or whether, as now, this can be left to Suppliers?

EDF Energy wants to ensure that our customers can benefit from the flexible and high functionality prepayment arrangements that Smart Meters enable. This is likely to include a number of convenience features such as friendly credit. It is important that Suppliers do not encourage debt issues by offering emergency credit.

We also believe that it will be appropriate to set disablement exclusion periods where we will not disable customers' supplies. We will decide these periods taking into account the PAYG product and any relevant circumstances of the customer of which we are aware. These periods are likely to include bank holidays, night time and other periods where Top Up accessibility is lower than normal.

We, therefore, do not believe that Ofgem should mandate emergency credit or times of friendly credit or disable exclusion times that Suppliers must incorporate within their PAYG arrangements other than simple minimum levels that would be applicable to all customers.

Customer Protection - Question 10

Do you consider that an obligation similar to Prepayment Meter Infrastructure Provision (PPMIP) may be required?

EDF Energy does not believe that Ofgem needs to mandate that we maintain existing "Top Up" key type infrastructure arrangements for customers. We would hope to give customers a choice of "Top Up" options so they can choose the one that works for them. We can envisage many other payment methods that would remove the need for vending outlets while facilitating a PAYG customer without a bank account or credit card. E.g. Scratch card sales, money transfer services, supermarket Point of Sale equipment.

EDF Energy anticipates providing cash payment facilities for customers in local shops or other suitable outlets. This is likely to be one of the options we offer our customers and would be especially important to cater for customers who do not have access to a bank account. We also believe that this is likely to be a cost effective option therefore reducing costs to our customers. However, we do not believe that it is necessary for Ofgem to mandate any payment method or provision.

We believe that the existing vending machine network is not appropriate for Smart Metering PAYG arrangements.

EDF Energy would support the analysis, by a central design authority, of processes to ensure that PAYG customers are not inconvenienced or left without power when communications with the meter fail. This may take the form of a use once emergency

code that Suppliers can give the customer to override the PAYG feature and enable the supply manually. It may also include regular monitoring or hand-shaking of disabled Smart Meters to verify that communications are functioning correctly and raising alerts for off-line meters.

Customer Protection - Question 11

Is the obligation which Ofgem is proposing to introduce on Suppliers to take all reasonable steps to check whether the customer is vulnerable ahead of disconnection sufficient? If not, what else is needed?

EDF Energy believes that the existing industry safeguards and controls within the current processes are adequate to protect vulnerable customers. We support these same protections being included within the Smart Metering processes. We agree that it is necessary for Suppliers to continue to take all reasonable steps to check whether a customer is vulnerable ahead of instructing a disablement.

Customer Protection - Question 12

What notification should Suppliers be required to provide before disconnecting a customer?

EDF Energy broadly agrees with Ofgem's remote disconnection guidance issued on 21 October 2010.

We would only remotely disconnect in exceptional circumstances, although we will have procedures in place to re-connect where a customer self-disconnects. Remote disconnection would only be suitable after attempts to contact the customer. When unable to contact the customer a site visit would still be required. The legal implications of remote disconnection need to be fully examined and understood.

Customer Protection - Question 13

Do you have any views on the acceptability of new approaches to partial disconnection and how they might be used as an incentive to pay bills?

EDF Energy believes there may be potential in load threshold or limited arrangements for electricity customers, but can see little benefit for gas supplies. We need to be clear in what situations we might be able to use such arrangements, as the considerations are different. As a variation of a load-management (or DSM) product, this could provide a guarantee of response to the Supplier and reward the customer accordingly without the necessity of a forced disablement. As a tool for managing debt within a prepayment arrangement, this might provide a variation on the friendly credit theme but may create situations where customers are willing to live with the load limited supply and never pay their bill. It is not at all clear how customers would react to this type of arrangements and more work is required to understand customer attitudes to load limited supplies.

We can see other scenarios where load limited supplies might be appropriate such as high turnover rented accommodation (e.g. holiday lets), long term no access sites or where network capacity would not support a full capacity connection. In the later case the capacity could be relatively high e.g. 5kW but not as high as a standard service. Further options exist if the premises were wired to have separated 'always on' circuits, e.g. for lighting and disconnect-able circuits e.g. ring mains and high energy devices, potentially controlled by a HAN enabled controller.

EDF Energy believes that the industry needs more work to understand the technical and customer issues associated with these arrangements.

Customer Protection - Question 14

Do you agree with our approach for addressing issues related to remote disconnection and switching to prepayment?

Generally, EDF Energy supports the approach that Ofgem is taking to protect customers when they switch between credit and PPM/PAYG arrangements and we believe that an industry design authority should consider the design of these processes. It is important that we implement a set of processes that are safe, do not increase costs to customers and are properly trialled and tested before deployment.

Importantly, we must mitigate the safety concerns associated with PPM/PAYG arrangements, especially around enablement before connection.

We want to make sure that the functionality is available in the meter even if it is not available in the IHD.

Please also see our responses to Questions 6 to 13 above.

Customer Protection - Question 15

Have we identified the full range of consumer protection issues associated with the capability to conduct remote disconnection or switching from credit to prepayment terms? If not, please identify any additional such issues.

At this stage EDF Energy believes Ofgem have identified all the necessary issues associated with remote disconnection and switching from credit to prepayment.

Customer Protection - Question 16

What information, advice and support might be provided for vulnerable consumers (e.g. a dedicated help scheme)? Who should it be provided to?

EDF Energy believes that it is important that vulnerable customers can benefit from Smart Meters and the improved services that they will allow Suppliers to offer. We will provide all customers with adequate lucid information to keep them informed, including where they can obtain advice and support. We will work with Consumer

bodies to develop and maintain this information. We believe that Ofgem should produce a core information pack that Suppliers can provide to vulnerable customers along with other information, thus creating a suitable minimum standard for support.

These arrangements should be included in the Installation Code.

We envisage providing additional support to vulnerable customers (for example prolonged high demand warnings) that should improve the protection given.

Customer Protection - Question 17

Do you have any comments on our proposals to prevent upfront charging for the basic model of Smart Meters and IHDs?

EDF Energy agrees with Ofgem that it may be appropriate to spread costs associated with Smart Metering and IHDs meeting the minimum requirements and therefore recover these costs from customers as appropriate to asset life and take-up. However, Suppliers first need to understand the wider cost-recovery arrangements.

5. Data Privacy & Security

Data Privacy & Security - Question 1

Do you have any comments on our overall approach to data privacy?

EDF Energy believes that data privacy is a key consideration for Smart Metering, and that all customers should have absolute confidence that we use data about their energy consumption appropriately and that we will respect their privacy. Privacy needs to be a fundamental requirement of the system and process design and we support the so called “privacy by design” principle.

Privacy failures and customer concern over privacy, real or perceived, have the potential to undermine the benefits of Smart Metering. It is important that Ofgem and the industry collates and builds robust privacy requirements into the enduring design for Smart Metering, based upon the a comprehensive ‘Privacy Assessment’ undertaken in accordance with the rules established by the ICO. Many interested parties are likely to have privacy concerns and it is important that the industry design assess them all. We believe that an industry design authority that would oversee the entire end to end solution for Smart Meters would do this best.

Ofgem should apply the same security and privacy principles in any mandated rollout ahead of a full DCC, as they will in the enduring solution. To avoid confusion, Ofgem must clearly set out who is responsible for security and privacy at each stage in the operation and deployment of the Smart Metering E2E systems.

We advocate that the privacy standards should be included in a performance assurance framework to ensure that all Smart Metering components and parties adhere to them.

If we are all to follow the “privacy by design” principle throughout the entire design process, then it is essential that Ofgem establish the basic privacy requirements quickly. This will allow all designers to make consistent solution decisions that maintain a consistent level of privacy throughout end to end Smart Metering solution. Overall privacy protection will only be as good as the least private part of the process without consistent privacy requirements there is potential for costly privacy measures to be rendered ineffective.

On a technical level, we believe that Ofgem should consider the security framework within Internet Protocol version 6 (IPv6) for all Smart Meters.

Data Privacy & Security - Question 2

We seek views from stakeholders on what level of data aggregation and frequency of access to Smart Metering data is necessary in order for industry to fulfil regulated duties.

Smart Meters can provide a number of measurements; we assume that this question is about the premises consumption (KWh). We would not view other measurements as necessarily having privacy issues e.g. voltage, sags and swells, interruptions, power

factor, maximum demand, etc. We appreciate that some customers would view access to their consumption data as an invasion of their privacy that we would want to avoid. The degree to which privacy is invaded is a function of the resolution (or integration period) of the consumption data, who can access it and the delay between it being recorded and being accessed.

EDF Energy uses data from meters for a number of functions, the way we carry out these duties is consistent with the data available from the meter. These duties include:

Billing	We produce bills for Gas and Electricity usage for customers, including PPM statements. The bills are typically quarterly with additional bills around tenancy changes or billing disputes.
Settlement	Gas and Electricity settlement require periodic readings. We used the same meter data that we have used in billing for settlement.
Forecasting	We need to forecast energy consumption for a number of purposes including energy purchasing. This requires data on customer consumption patterns and usage. It also results in a number of interim data like load creep statistics and average consumptions. Forecasting uses data from billing and other supplemental data collected as part of our load research programme.
Theft Detection	We analyse consumption data to identify potential theft.

With Smart Metering, we expect that we can improve some of these functions as the availability of high quality timely data improves. For example, we might offer our customers monthly billing in place of the current quarterly billing. Our ability to forecast our energy purchasing requirements will change as customers react to IHDs and behaviour modifying arrangements. We will need to analyse load creep and response to pricing stimuli through access to a larger population of interval data. We may want to offer “threshold alert” services (high/low consumption). This would require half hourly reads but we would not need to retain the reads. We fully expect that DECC and Ofgem will be interested in this type of information.

The data that we need to perform our statutory duties will change as the roll-out of Smart Meters progresses. Customers will demand more frequent billing and understanding aggregate demand will require a more detailed knowledge of customer behaviour. Monthly readings retrieved each month and half hourly data retrieved at least a month after the consumption was measured would currently seem adequate for our purposes. However, we do not yet know what we might need in the future and these modest requirements might need revision. For example, we can imagine using meter data to verify occupancy before disconnecting long term no access premises or programming meters to provide alerts of prolonged high consumption that may indicate a problem without needing to gain customer consent.

EDF Energy believes that the customer should consent to the way metering data is used and by whom, with the exception of metering data required to fulfil our regulated duties. The principle should be that the party requesting Smart Meter data should state what information they need, the frequency they need it and will then obtain customer's consent for this. We imagine that we could obtain customer's consent via the IHD. See also response to customer protection Question 5.

It will be important that we strike the right balance between private (and secure) and making the processes usable. One of the key benefits that Smart Meters promise is a more flexible environment where innovations and cost savings are possible, we must not make the system too costly or unusable by implementing unnecessarily demanding privacy measures.

Data Privacy & Security - Question 3

Do you support the proposal to develop a privacy charter?

EDF Energy supports the need for a Privacy Charter. We would expect any party receiving data from the meter to act in accordance with the Privacy Charter. We would expect the DCC to arrange a suitable audit process to provide assurance that all parties are compliant with the Privacy Charter.

It is vital to emphasise the need for all parties who have access to the Smart Metering functionality, comply with the 'Privacy Charter', including third Party users, and that they are subject to the same assessment and auditing that primary users must undertake.

Data Privacy & Security - Question 4

What issues should be covered in a privacy charter?

EDF Energy believes that an industry design authority should consider the full range of security concerns but our initial analysis suggests that a privacy charter should cover the following topics:

- How data is secured including physical security of the meter
- How access to the secured data is controlled
- Who has rights to control access to the data
- Data ownership
- Interaction with the DPA and Information Commissioner
- How data users are authenticated
- Process for seeking customer consent to use consumption data
- Requirements to transmit the data securely

- Requirements to store the data securely
- Duration that participants will retain data
- Use and security of backup copies
- Availability of data (to authorised parties and the customer)
- Requirements to maintain data integrity - No modification, insertion, deletion or replay
- Data encryption requirements
- Disputes and grievance procedures
- Requirements to safely dispose of the data (including data on removed devices)
- Use of data in aggregations and the necessity (or not) for continued protection
- Deterrents against unauthorised access and misuse of customer's data
- How unauthorised access and misuse is detected
- Response to exposed security vulnerabilities
- Security on the HAN, including Machine to Machine controls
- Security risk analysis (audits) and monitoring
- Privacy risk assessment

Data Privacy & Security - Question 5

Do you agree with our approach for ensuring the end-to-end Smart Metering system is appropriately secure?

EDF Energy believes that it is important to have a single security and privacy framework that covers the entire Smart Metering system so that gaps in the security are less likely. We support the further work of Ofgem and the relevant expert groups to ensure that all parts of the Smart Metering systems are appropriately secure.

Security design principles and requirements need to be completed by the relevant 'Expert Group' and approved by the 'Privacy and Security Advisory Group' and the Smart Metering Implementation Programme. Associated standards must be defined before the interim rollout begins or the interim solution could be incompatible with the enduring market and require replacement e.g. if a Smart Meter cannot support agreed encryption standards.

- We must be able to implement security measures in all available products and processes. Products that are purchased must conform to the design and be accredited to all required security standards.

- We must not roll-out interim Smart meters systems until they have security that is acceptable to all parties.
- We must have a process to accredit all Parties communicating with Smart Meters (such as Data Retrievers, Suppliers etc., during any Interim Arrangements, plus DCC and any new participants for enduring), to ensure they do not compromise security and privacy.

Please also see our response to Prospectus Question 15 above.

6. Regulatory and Commercial Framework

Regulatory and Commercial Framework - Question 1

Have we identified all of the key elements that you would expect to see as part of the Smart Metering Regulatory Regime?

EDF Energy is concerned that the significant risks associated with successful delivery of this project are not being fully recognised and that an appropriate risk management strategy is not yet being implemented. We recognise that, to date, there has been no comparable rollout worldwide which has ended in success. This leads us to conclude that a business assurance framework is essential as part of the governance arrangements, together with the appointment of an independent auditor.

EDF Energy believes that the regulatory regime is complete except the inadequate provisions to govern early and interim deployment of Smart Meters and the establishment of an industry design authority. We believe that it is critical to properly plan and manage the roll-out of meters from the very start. The proposed interim arrangements are contrary to this position. The duplicated costs and the risks far outweigh any benefits that we might achieve with a sub-optimal accelerated early rollout. It would be better and more beneficial in the longer run, to plan and carefully roll-out Smart Meters to achieve an enduring orderly market that includes a controlled market start up.

Any regulatory framework applied must allow us to recover our 'reasonable costs', in undertaking this substantial investment, and to secure finance in advance of our commitment to comply with any change in our licence obligations.

Accelerating the volume roll-out in 2012/13 means that Suppliers will be required to ramp up to almost full installation capacity in a very short space of time (6-12 months) which brings a number of significant risks. The compressed timeline will reduce the time available to recruit, train and test the installation engineers – this may inhibit their capabilities leading to potential health and safety implications.

EDF Energy has previously commented that any increases in health and safety risks would not be acceptable and we would subsequently have to review whether a ramp-up of volume to these levels was achievable given the health and safety considerations.

The compressed timeline also reduces the time available to test and refine the installation processes, the single biggest driver of minimising the customer impact and roll-out costs (which together with the meter acquisition are the single biggest cost driver).

Additionally, we would welcome more clarity on the instruments for maintaining consistent modifications to all associated codes and regulations that overlap with a Smart energy market. It is important that we have clarity over which codes take precedence when they conflict.

Regulatory and Commercial Framework - Question 2

Do you agree with the proposal to establish a Smart Energy Code?

EDF Energy supports the creation of single Smart Energy Code and governance body to govern all aspects of Smart Metering; including any 'Interim Arrangements' imposed or agreed. We believe that this can provide a simpler solution than the current dispersed governance arrangements and increase clarity and reduce costs to the customer. Where Smart Metering requirements overlap with other industry codes the Smart Energy Code should take primacy.

Ideally, all parties that are involved in the Smart Metering systems should be directly subject to the code and therefore be required to accede to the Smart Energy Code. This will require a suitable accession process that could include appropriate accreditation and entry testing requirements.

The Smart Energy Code should include suitable governance arrangements that allow all concerned parties to participate in the governance process. We would like to see an elected panel and chair to oversee DCC operations and code modifications. Elections to the panel should be proportionate to market share (meters registered).

EDF Energy does not support Smart Energy Code compliance through a contractual mechanism; we believe that code accession should be imposed. We therefore think that the DCC framework contract is necessary, but not sufficient to address the obligations being created. There are numerous examples in gas where Suppliers have been unable to enforce arrangements with their agents to comply with industry processes through contracts alone.

We urge Ofgem to consider what mechanisms we need to avoid conflict with existing industry codes. We anticipate the need for a blanket process to govern these changes effectively and consistently to remove elements of conflict and duplication. This governance process will need to maintain legacy arrangements for existing dumb meters avoiding escalating costs to the customers. Ultimately, we will need to orderly shutdown the legacy arrangements without unduly increasing costs, address transition to any 'Interim Arrangements' introduced, and transition to enduring DCC arrangements.

Regulatory and Commercial Framework - Question 3

Do you have any comments on the indicative table of contents for the Smart Energy Code as set out in Appendix 3?

We have set out our comments on the individual section of the proposed Smart Energy Code in the table below.

Proposed SEC Section	EDF Energy Comments
1. Definitions and interpretation This would set out the defined terms used in the Code and say how the Code should be interpreted.	This should include a glossary
2. Parties This would define the parties to the Code. These would include the licensed energy Suppliers, licensed electricity distribution companies, licensed gas transporters (DNs and iGTs) and DCC.	We believe that all parties involved in the Smart Metering process should be parties to the Smart Energy Code.
3. Accession process There would be an accession process for new parties in the above categories and provisions relating to accession by unlicensed parties, such as energy service companies or aggregators, to the extent that these parties need to be bound by the Code.	We believe that the accession process should include testing and trialling of participants to ensure orderly operation of the market. The same accession process should apply for the interim arrangements.
4. Smart Energy Code Panel A panel would be responsible for governance of the Code. The composition would achieve appropriate representation of all stakeholders while providing for efficient decision making. The Chairman would likely be appointed by the Authority.	We believe that the Panel should be composed of elected representatives, including the chair. The electoral process should ensure that votes are proportionate to market share.
5. Modification procedure This procedure would follow code governance good practice as set out in Ofgem's final proposals from the Code Governance Review.	Agreed

Proposed SEC Section	EDF Energy Comments
<p>6. Technical interoperability requirements and procedures</p> <p>The Code would define requirements in a number of areas to ensure technical interoperability - the ability of all Suppliers to supply any customers with Smart Meters without regard to the make of Smart Meter installed or provider of the HAN and without the need to visit the premises.</p>	<p>Agreed.</p> <p>'Interim arrangements' need to be considered.</p> <p>The technical specifications should be clear, complete and published by Ofgem/DECC and be approved by EU standards for all necessary equipment and interfaces for interim arrangements (e.g. meter, IHD, HAN and WAN interface specifications). We expect this to include consideration of open standards and protocols.</p> <p>Compliant Smart Meters and associated equipment have been developed, manufactured, accredited/certified and purchased by Suppliers. Interim arrangements only apply for compliant Smart Meters and associated equipment.</p> <p>A HAN standard should be mandated. This must be tested and approved for security, public health and must not interfere with any other communication system. (We expect customer concerns over Wi-Fi or radio "smog" in the home).</p>
<p>7. Commercial interoperability requirements and procedure</p> <p>This section would contain any provisions that are agreed to enable new Suppliers to take over Smart Meters (and related equipment in consumer premises) from the old Supplier on commercial terms.</p>	<p>This should include provision for providers of value added services. 'Interim arrangements' need to be considered.</p> <p>Consideration is needed on the full industry impact on processes and systems, including CoS, change of meter and related processes.</p> <p>The complexity of the transfer of commercial arrangements for communications is a process that does not currently "exist" in the industry design, but will need to be a part of interim arrangements. There is also a key requirement for continuity of communications services and this has been considered in the implementation considerations</p>

Proposed SEC Section	EDF Energy Comments
<p>8. Meter registration (to be confirmed)</p> <p>This section would set out DCCs responsibilities in relation to Smart Meter registration, either under its own licence or as an agent of those parties who currently have this obligation. The long-term implications for the MRA and SPAA will require assessment. It will also address DCCs role in any reformed change of Supplier process.</p>	<p>Agreed</p>
<p>9. Meter installation, removal and exchange obligations and procedures – implementation of rollout obligations</p> <p>This section would set out practical arrangements between the parties to enable roll-out of Smart Meters and their subsequent maintenance and replacement.</p>	<p>We support the creation of a voluntary CoP to govern the installation and commissioning process; it is important that this section include suitable commissioning tests before meters are accepted into the system.</p> <p>For any interim central solution, Interim requirements should be considered and incorporated.</p>
<p>10. Meter access control and access authentication</p> <p>DCC would be responsible for management of access control to all Smart Meters using DCC communications and therefore act as access controller. This would be the primary mechanism to secure access to information held on, and functionality of, Smart Meters.</p>	<p>Agreed. However, for any interim central solution, Interim requirements should be considered and incorporated.</p>
<p>11. Gateways, data exchange formats and commands</p> <p>DCC would provide one or more gateways through which authorised parties could communicate with DCC and/or with Smart Meters.</p>	<p>Agreed. However, for any interim central solution, Interim requirements should be considered and incorporated.</p>
<p>12. Transfer of data and commands to and from Smart Meters initiated by authorised parties</p> <p>This section would deal with the communication services to be offered by DCC. Authorised parties would be able to communicate directly with Smart Meters, subject to their level of access control, in order to obtain a special reading, to reconfigure the meter for use with a new TOU tariff and so on.</p>	<p>Agreed. However, for any interim central solution, Interim requirements should be considered and incorporated.</p>

Proposed SEC Section	EDF Energy Comments
<p>13. Data services provided by DCC</p> <p>There would be a number of core data services available to Suppliers and network companies. These would include arrangements for provision of consumption data.</p>	<p>Agreed. However, for any interim central solution, Interim requirements should be considered and incorporated.</p>
<p>14. Responsibilities of Suppliers with respect to meter system operation</p> <p>Suppliers would be responsible for meter system maintenance and meter configuration. It is also proposed they would have responsibility for the WAN communications module.</p>	<p>We believe that the DCC should be responsible for the WAN communications module and the HAN. 'Interim arrangements' need to be considered.</p>
<p>15. Responsibilities of networks with respect to meter system operation</p> <p>DNOs and GTs would carry responsibilities under the Code as well as having rights to receive consumption and other data subject to any privacy restrictions, in return for payment for DCC services.</p>	<p>This section should also state the fees that Network operators pay for the incorporation of their requirements and provision of data and services for Smart Grids.</p> <p>The above also applies to arrangements for third parties using DCC for value added services</p> <p>'Interim arrangements' need to be considered.</p>
<p>16. Implementation of measures concerning data privacy and consumer protection</p> <p>This would set out measures in relation to data privacy and consumer protection. It would also deal with the circumstances under which consumers could authorise their own service providers, such as energy service companies, to access their data.</p>	<p>Agreed.</p> <p>Interim arrangements should be subject to the same data privacy / security requirements as the enduring</p>
<p>17. Security and business continuity</p> <p>This would cover the arrangements relating to the security of the communications network and for business continuity.</p>	<p>This section should also cover data recovery after loss of data, business and disaster recovery.</p> <p>It should also link to the Performance Assurance framework for agents.</p> <p>Interim arrangements should be subject to the same data privacy / security requirements as the enduring.</p>

Proposed SEC Section	EDF Energy Comments
<p>18. Performance levels, performance monitoring and incentivisation</p> <p>This would set out service levels in relation to communication and data services, how these service levels would be monitored and, in broad terms, the basis for incentivisation. Details of the incentivisation would be set out in contracts between DCC and its service providers.</p>	<p>We believe that the code should have a Performance Assurance Framework to assure operations of the Smart market. This should include requirements for testing and trialling along with entry processes.</p> <p>'Interim arrangements' need to be considered.</p>
<p>19. Business processes</p> <p>There would be a number of business processes under the Code which would need to be documented.</p>	<p>We believe that an industry design authority should be established to design these processes.</p> <p>'Interim arrangements' need to be considered with any interim business processes to be fully agreed and documented.</p>
<p>20. System and process assurance</p> <p>There would be a need to include assurance provisions under the Code, including the preparation of some form of risk identification and management plan.</p>	<p>This should be included under the Performance Assurance Framework. The same assurance should also apply to the interim arrangements.</p>
<p>21. Billing and payment processes</p> <p>This would define the arrangements for billing and payment based on the charging statement to be prepared in accordance with DCC's licence and consistent with the licence conditions relating to permitted revenues.</p>	<p>This should include payments from all parties that use the DCC including third parties and network operators. Should specify billing and payment processes for the interim arrangements.</p>
<p>22. Reporting</p> <p>There would be a requirement to produce an annual report on the operation of the Code with suggestions for improvement, as well as to produce more frequent operational reports.</p>	<p>Agreed</p>
<p>23. Interfaces with other industry agreements</p> <p>There would need to be interfaces established with other industry codes so that industry systems and procedures could be synchronised to enable change control to operate where there are interdependencies.</p>	<p>Agreed however also applies to the interim.</p>

Proposed SEC Section	EDF Energy Comments
24. Dispute resolution This would set out procedures for resolution of disputes.	This section should include an escalation process. Interim arrangements should be considered.
25. Limitation of liability and other provisions This would define any limitations of liability of the various parties under different circumstances and deal with other provisions of a general nature.	The DCC should operate under English law. This also applied to the interim arrangements.

In addition, EDF Energy believes that there is need for the following provisions in the Smart Energy Code:

- Aims and Objectives of the DCC
- Industry Design Authority
- Health and Safety
- DCC support and help-desk services
- Member expulsion process
- Meter Operator Accreditation service
- DCC Agents - Communication Service providers
- DCC Agents - Data services providers
- DCC Agents - Others
- Technical meter and communication equipment approval/accreditation
- IST & Re-certifications/Policy Exchange
- IHD Management
- Metering dispensation process
- Transition from interim arrangements
- Interim arrangements run off provisions
- Fall back and emergency procedures
- Communications Service Provider withdrawal (failure)

- Communications provider of last resort (during interim arrangements)
- Non-Domestic customers and AMR meters
- In the longer term – provision for legacy meters & migration
- Reference to other codes e.g. Installation Code, consumer protections

Regulatory and Commercial Framework - Question 4

Do you have any comments on the most appropriate governance arrangements for the Smart Energy Code?

We agree with the Prospectus that there should be a multi party framework agreement which binds licence holders and unlicensed parties to accede to the SEC.

The Smart Energy Code should include suitable governance arrangements that allow all concerned parties to participate in the governance process. We would like to see an elected panel and chair to oversee DCC operations and code modifications. Elections to the panel should give parties voting rights proportionate with their market share and should ensure that all interested parties have some representation.

EDF Energy would support the inclusion of customer representation on the SEC Panel. This would help assure the public that the panel is listening to customer concerns.

EDF Energy believes that BSC and MRA governance are good models for the SEC governance.

EDF Energy does not support Smart Energy Code compliance through a contractual mechanism; we believe that code accession should suffice.

The Smart Energy Code should include a performance assurance framework that includes provision to ensure, that governance is operating correctly, possibly via a suitable risk based audit of the panel, its secretariat function and the modification process.

We continue to be concerned about the lack of proper governance arrangement before full DCC establishment. We would urge Ofgem to consider earlier development of enduring governance arrangements to govern properly the deployment and operation of all Smart Meters, and any supporting systems and processes. We believe the SEC should span both Interim and Enduring (DCC) to minimise risks and costs of transition between the two 'stages' if interim were to proceed.

The Smart Energy Code should cover all aspects of the Smart Metering system including the functioning of the DCC.

Regulatory and Commercial Framework - Question 5

Do you agree with the proposals concerning the roles and obligations of Suppliers in relation to the WAN communications module?

EDF Energy believes that the WAN communications, including the WAN module in the home should be the responsibility of the DCC and its service providers. We believe that Supplier should install the devices and provide an ongoing maintenance service, but that DCC should pay for this service. DCC should be obligated to use Suppliers for this maintenance service to avoid customer confusion that might result from multiple parties entering their premises.

Regulatory and Commercial Framework - Question 6

We welcome views as to which other additional data items should be included in the mandated HAN data set beyond the list for the IHD.

EDF Energy believes that an Industry Design Authority should consider the full ranges of services and associated data required from the HAN. The HAN and integration with other smart machines in the home can provide a wide range of innovative services. It is unlikely that this will ever become stable with Suppliers and other service providers offering ever more services into the HAN. An enduring industry design authority can monitor these developments and ensure that utility functionality remain operative.

The Prospectus only requires an IHD to receive and display data. This will not be sufficient to satisfy prepayment requirements (in the case of inaccessible meters and possibly other future innovations). It is understood that at the time of writing SMDG1 is giving consideration to the need for two-way communications. It is suggested that the scope of this study be extended to incorporate standard commands and controls to the DCC. The HAN must support automation capability for demand side management. In particular, the framework needs to consider PPM/PAYG and remote disconnect/re-connect functionality, interactive messaging on energy and carbon saving, tariff, data and bill update selection, and integration of IHDs into Energy Services, such as microGen, EVs and 'Green Deal'.

Regulatory and Commercial Framework - Question 7

Do you agree with the proposal that the WAN and the HAN in customer premises should be shared infrastructure, with the installing Supplier retaining responsibility for ongoing maintenance? If not, would you prefer to have an arrangement by which if the gas Supplier is the first to install, responsibilities for the common equipment is transferred to the electricity Supplier when the electricity Smart Meter is installed?

Please see our response to Prospectus Q8 above in relation to the HAN.

EDF Energy would like to see more work carried to consider ways to avoid multiple visits to customer premises to install meters and communications. This will help to reduce cost to customers. We suggest that an industry design authority could consider this. We would welcome Ofgem's support for bilateral courtesy installation agreements where Suppliers can install meters on the other's behalf where they are first to site.

It is important to clarify and understand the scope of the HAN for which we need to define responsibility. The HAN is likely to extend into many areas of the customer's home as appliances and other equipment start communicating (using M2M capabilities) over the HAN. It is unreasonable for anyone to take on such a broad responsibility without any control over the equipment that the customer might install.

We would suggest that analysis is required to define what we might call the utility HAN, the part of the HAN where we need to define responsibility to ensure that Smart Metering works. The industry should be responsible for only the communications between the various components of utility equipment and not other M2M capable devices in the home. This should only include the meters, communications and IHDs where fitted and other devices like DG controllers or EV chargers.

We are not convinced that making the installing Supplier responsible for the HAN is the best option. We can foresee a number of problems with this model around ongoing responsibility after a change of Supplier, further complication of the Supplier hub and issue resolution deadlocks. The electricity Supplier cannot be expected to bear the costs for the gas Supplier (and vice versa) and would need to charge the gas Supplier for their share of the support of HAN, WAN and IHD.

We would like to see more work to understand the ramification of different parties taking responsibility for the utility HAN. In the absence of this analysis, we are inclined to believe that the DCC should take responsibility for all communications activities including the HAN.

Whoever is responsible for the HAN, EDF Energy believes that the DCC should take responsibility for the WAN communications module and pay for any maintenance and replacements required.

EDF Energy believes that where possible IHDs should be a customer owned device. We envisage a situation where customers will purchase IHDs that suit their style and home life. We also envisage technology providers incorporating IHDs within other household devices like intelligent thermostats, telephones and home automation systems. Therefore, we only believe that we should provide IHDs in the initial rollout where the customer wants it and that we should bestow these upon the customers with a suitable warranty, thereafter they become the customers' responsibility.

We anticipate that we will give customers taking some of our future products a more sophisticated IHD as part of the product and we will make suitable arrangements for their maintenance.

Regulatory and Commercial Framework - Question 8

Are there additional measures that should be put in place to reduce the risks to the programme generated by early movers?

EDF Energy believes that the installation of Smart Meters prior to the establishment of technical and commercial interoperability should be at the Suppliers' own risk. Any non-compliant meters installed prior to any 'interim arrangements' or DCC should be excluded from the SEC, and should be replaced as quickly as possible within the rollout period for smart. Failure to act on this basis would leave a residual volume of non-compliant meters in circulation which would go against the intention of the mandate/impact assessment, disadvantage consumers and potentially interfere with competition. EDF Energy recommends that non-compliant Smart Metering systems should not be accommodated in either the interim or enduring solution, unless they could be supported without impacting the optimal provision of those services and the Supplier concerned was prepared to fund the system changes.

In respect of PPM/PAYG metering, EDF Energy is concerned that any 'early solutions' may prove difficult to replicate by a new Supplier, and this may distort market competition through restricting the opportunity for Customers to switch.

Regulatory and Commercial Framework - Question 9

What is needed to help ensure commercial interoperability?

EDF Energy believes that commercial interoperability is essential for an orderly market. Commencing a mandated Smart Meter rollout without this in place will increase costs for customers; not least because Suppliers will need to use sub-optimal funding arrangements until they can reassure financiers that effective commercial interoperability is in place.

We believe that whilst the industry has done much work in this area, we still need more work to define fully a workable set of commercial interoperability arrangements for inclusion in the Smart Energy Code.

In order for commercial interoperability to work, a number of factors need to be considered as follows:

- Supplier A may install a meter with greater functionality and cost, than the minimum specification. Therefore at the point of Change of Supplier (CoS) the new supplier may only be interested in the minimum functionality and hence only be prepared to pay a meter rental commensurate with that functionality. Therefore arrangements will need to put in place to cater for this.
- We recommend a normalised approach to recovering asset cost.
- The arrangements for Commercial interoperability and the obligations for a new Supplier to assume responsibility and for the costs associated with the existing Smart Assets must be enshrined in the SEC.

- On change of Supply, the new Supplier must be obliged to adopt the existing smart metering system and not replace except under certain defined exceptional conditions.
- Commercial interoperability must follow technical interoperability and therefore any arrangements must only apply once all of the technical metering system specifications e.g. meters, WAN, HAN, IHD etc have been agreed. Should any Supplier install Smart Metering ahead of these specifications being agreed then the same safeguards of commercial interoperability cannot be afforded. Hence these meters and components must be removed and transitioned into the DCC when formed.
- Prices would need to be regulated if Suppliers are prevented under commercial interoperability arrangements from replacing meters, since effectively a monopoly would be created for that customer.
- However, if assets were regulated this could result in removing the uncertainty around meter rental costs for incoming Suppliers, as the price would be controlled. It would also lessen the risk of meters being removed early for commercial reasons.
- Prices would need to be regulated if Suppliers are prevented from replacing meters since effectively a monopoly would be created – however there arrangements could fall away after a pre-determined time.

Regulatory and Commercial Framework - Question 10

Can current arrangements for delivering technical assurance be developed to gain cost effective technical assurance for the Smart Metering system? If so, how would these procedures be developed and governed?

The SMDG has been reviewing this area. The current arrangements for Technical Assurance involve manufacturers using standards and quality controls, our own procurement process ensuring quality acceptance, compliance with EU directives and standards, requirements of the National Measurements Office and Elexon's assurance requirements. Similar arrangements are in place for gas for example MAMCOP and Gas Safe audits are akin to MOCOPA arrangements.

For Smart Metering we would expect to see requirements in the SEC for metering, communications and IHD testing, revisions to MAMCOP and MOCOPA, a section in the Installation CoP (covering TA, quality testing, standards, auditing), and requirements for field staff operations to be audited for safety, training accreditations and installation quality as they will be installing greater volumes of metering equipment.

EDF Energy agrees that Technical Assurance of both Gas and Electricity Smart Meters is necessary to ensure their correct installation and operation. We also believe that the scope of this assurance should cover the communication and other peripheral equipment too so that we get assurance that the entire metering system is correct. We would welcome more work to design a suitable TA process for the SEC.

The need for ongoing safety inspection and/or the appropriate inspection period should be considered by Ofgem's SMDG expert group.

The core requirement for TA is to ensure that the Smart Metering system specification and standards are baselined by Ofgem, managed for accreditation and technical interoperability through the SEC, owned together with change control by the NMO.

We included a list of TA requirements in our meter specification for our recent trials. We can make this available on request.

It has been suggested that over the course of time technical assurance could be a means by which the risks associated with unvisited Smart Meters could be mitigated. If a TA authority was to implement a regime of randomly visiting Smart Metering installations (in a similar fashion to the current regime for half-hourly metering) then it might be possible to establish a risk incidence register and dependent upon results consider relaxations to SLC17 for certain classes of meter installation.

Regulatory and Commercial Framework - Question 11

Are there any other regulatory and commercial issues that the programme should be addressing?

We believe that there is a need for a Performance Assurance Framework in the SEC. This should include independent scrutiny that will assure parties that the DCC has carried out all management processes in accordance with the rules and provisions of the SEC.

Ofgem needs to define the responsibility for the HAN.

Ofgem needs to clarify the arrangements for including other types of meters (water & heat) within the SEC.

Ofgem needs to clarify how other schemes will make use of the HAN e.g. The Green Deal.

Regulatory and Commercial Framework - Question 12

What evolution do you expect in the development of innovative time-of-use tariffs? Are there any barriers to their introduction that need to be addressed?

EDF Energy believes that Smart Metering will support a wide range of innovative products and tariffs that we might want to offer to our customers. We believe that this wider choice of competitively driven products is good for our customers and will help realise the benefits on which Smart Meters are premised such as maximising the potential of low carbon generation and reducing the need for investment in upgrading infrastructure to deal with a few peaks a year. We do not think that Time of Use pricing is appropriate or necessary for gas supplies.

The development of some advanced tariff types and some other products will depend significantly on the settlement processes. The current profiling techniques serve to

homogenise customers undermining some of the more obvious pricing reflectivity opportunities of some tariffs. EDF Energy believes that Elexon and the industry should consider further how settlement treats Smart Meters especially if a move to half hourly settlement is appropriate. This needs to consider the wider impacts of domestic customers not being homogeneous in settlement; there will be customers on both sides of the average and a change may significantly advantage or disadvantage some outlying customers.

We also have similar concerns with DUoS pricing, which traditionally shadows the Supplier tariffs and do not reflect any time of use cost variations in distribution costs. We suggest that Ofgem needs to work with the ENA and network companies to clarify how DUoS charges will work in the future.

We can conceive of Time of Use products that include time of day, week and year. With the growth of wind generation, electric vehicles and other components of the low carbon economy we also expect evolution of tariffs types that we might include dynamic periods and prices that we do not defined upfront but which we can vary according to other conditions prevailing at the time. Ultimately, competition and infrastructure will drive product development and result in the best spread of products for our customers. It is important that any protection designed to protect customers from perceived complexity in tariffs does not stifle innovation.

Regulatory and Commercial Framework - Question 13

Are there changes to settlement arrangements in the electricity or gas sectors that are needed to realise the benefits of Smart Metering?

We believe that an industry design authority and relevant expert groups should work with Elexon and Xoserve to determine how settlement should treat Smart Meters. This should also consider the options for including some settlement activity within the scope of the DCC. We would support DCC performing data processing, data aggregation and settlements activities if a cost benefit analysis supported this.

Such an analysis should review the data granularity requirements and CBA impacts on related areas from Smart Grids to generation/energy balancing.

Specifically, we can see a benefit from adjusting the settlement timetables to recognise the quicker and potentially more frequent collection of consumption data. In time, we would support the move to half hourly settlement for all electricity meters to support the large scale introduction of low carbon generation and elements of Smart Grid development.

Today we are not convinced about gas settlements becoming HH in nature unless a new CBA proves it, but would welcome a review of gas settlements to see if improvements can be made to make them more accurate to individual customer usage maybe on a daily basis.

Regulatory and Commercial Framework - Question 14

What arrangements would need to be put in place to ensure that customers located on independent networks have access to the same benefits of Smart Metering as all other customers?

EDF Energy believes that all network operators should be subject to the SEC and that customers on independent networks should be treated the same as all other customers. This would mean that independent network operators would need to comply with the SEC and DCC arrangements (including communications and processes); we can see benefit in having a single set of processes that apply universally. We would like to ensure that all gas and electricity network operators are subject to the SEC's performance assurance framework.

Regulatory and Commercial Framework - Question 15

Are there any other industry processes that will be affected by Smart Metering and which the programme needs to take into account?

EDF Energy believes that Ofgem should establish an industry design authority to consider all industry processes and how they will operate with Smart Meters. We have identified the following list of processes that the design authority needs to assess and design into the Smart Metering market.

Notification of Failure to Obtain Reading

Obtain scheduled meter reading

Obtain ad-hoc meter reading

Validate reading for settlement

Remote Energisation of Supply

Remote De-Energisation of Supply

Local disconnect of Supply

Local reconnect of Supply

Switch Credit to Prepayment Electricity

Switch Prepayment to Credit Electricity

Exchange dumb to Smart Meter

Exchange AMR for Smart Meter

Exchange Smart Meter

Change of MOP

Change of MAM
Change of MAP
Change of DC
Change of DA
Change of MAP
Tariff Change
Perform 2-yearly safety visit
Send Data to (& from) IHD
Receive reading from Generation Meter
Top up Prepayment
Receive suspected tamper alarm
Supply Fault Alarm Triggered
Update Credit Balance
Consumer Meter Interaction
Obtain and process Maximum Demand Read
Obtain interval data from meter
Register new MPAN or MPR
Check Accuracy of Master Clock Data
Meter Fault Alarm Triggered
Firmware / Software Upgrade
Test Meter Communication Line
End of Calibration Life / Service Life Notification
Register additional device (e.g. micro-generation meter, electric vehicle, heat pump, other appliance or sensor)
IHD fault reported
Generation meter fault reported
Communications device fault reported
Messages to (& from) Appliances for Load Management
Feed in Tariff Update

Remote/local Meter maintenance

Manage meter access log

Provision of "In call" data to call centre staff

Energy forecasting

Statutory Energy reporting

DUoS charging (Currently aggregated in NHH settlement)

Comms provision of last resort.

7. Communications Business Model

Communications Business Model - Question 1

Do you agree that access control to secure centrally-coordinated communications, translation services and scheduled data retrieval are essential as part of the initial scope of DCC?

Yes this is a core DCC service. EDF Energy believes that the DCC should handle all communication between the meter and all authorised users of the data. This will include, Suppliers, Suppliers' agents, settlement bodies, network operators and other third parties such as customers' agents. The DCC will need secure authorisation processes to support this. The SEC should not require Suppliers to store and relay data to other parties.

The DCC should design communications with existing agents that can eventually accommodate supply point registration, data processing and aggregation.

We agree with the diagram showing the different responsibilities of the Supplier and DCC (Communications Business Model Figure 1, page 6) except that we feel the DCC should be responsible for all communication devices up to and including the communications module. This may include hardware devices to communicate with individual premises where communications need to be boosted e.g. in blocks of flats.

Communications Business Model - Question 2

Do you agree that meter registration should be included within DCC's scope and, if so, when?

EDF Energy support, in principle, the ambition to have a single central registration service as part of the DCC. We do not believe that the existing registration services are adequate without changes to hold Smart Metering specific data items. These changes would seem better delivered by a new central registration system designed specifically to provide an optimal solution for Smart. An orderly market needs accurate and timely registration data and a single master data reference point will help to keep down the cost to customers. EDF Energy would like to see more work to identify the additional data and the most appropriate place to perform registration before we decide which is best.

Communications Business Model - Question 3

Should data processing, aggregation and storage be included in DCC's scope and, if so, when?

EDF Energy supports the need for further analysis of electricity settlement processes before we decide to include DC/DA within the DCC role. On the surface, it would appear that central DC/DA would reduce costs to customers and be desirable, the industry need to verify this through analysis.

We believe that it may be desirable to link this to a review of how we carry out settlement, and in particular, whether settlement of Smart Meters should use half-hourly (or daily data). In this case, the role of the DC would be less for Smart Meters and it would seem logical to transfer the DC responsibility into the DCC and then make the necessary changes.

We can make similar arguments for the gas market too and would support a review of the equivalent gas settlement processes in the same way.

Storage of Smart Meter data is a separate issue and we feel more thorough analysis is required before we can reach a conclusion including subjects such as cost, data protection, rights of the DCC to use the data and industry governance requirements. We suggest that Ofgem establish an industry design authority to consider this.

We do not believe any of these activities should be included within DCC at the start. Development of the DCC is already challenging enough and adding these activities would severely affect delivery times leading to prolonging a sub-optimal initial situation.

Communications Business Model - Question 4

Do any measures need to be put in place to facilitate rollout in the period before DCC service availability and the transition to provision of services by DCC, for example requiring DCC to take on communications contracts meeting certain pre-defined criteria?

EDF Energy firmly believes the issues and costs created by an interim solution prior to establishment of the DCC far outweigh the early realisation of benefits that it could deliver. We set out our concerns in our September response and we are still of the view these concerns are valid. We estimate that accelerating the roll-out profile to a point where EDF Energy installs 1 million meters would increase our overall incremental implementation costs by £28-57million based on a combination of higher meter acquisition costs (due to the higher asset costs in the earlier years) and additional costs incurred to set up an interim industry solution providing interim technical interoperability prior to DCC.

In addition to the above cost we will have to be fund any meters installed in this accelerated period on balance sheet as we do not expect suitable external funding partners to be available while uncertainty remains in the market. We estimate this additional funding to be in the region of £80m

We believe that an ill defined interim market could lead to an ill disciplined market, undermine consumer confidence in Smart Meters and delay overall realisation of benefits. For this reason, there should be robust requirements (i.e. for technical standards, governance, data and process flows) to cover the interim period in order to guarantee the integrity of the data that will be migrated into the DCC. Where non-compliant meters have been installed, it may be difficult and costly to populate the Smart registration system whether this is provided by the DCC or existing providers.

Any interim solution should be a logical “pre-cursor” of the DCC, which would standardise processes and flows and potentially provide a pilot for the enduring, demonstrating that IP, services and solutions could be novated to the enduring arrangements. This would mitigate some of our concerns in terms of the timescales required to deliver the enduring DCC. We should have a robust method of testing the implementation of these requirements and include a clear set of go/no-go criteria. The interim rollout should not proceed if it can be demonstrated that it is likely to compromise the enduring solution.

We believe that prepayment arrangements during interim deployment should be excluded due to the complexity of establishing a PPMIP or alternative management mechanism within the required timescales. Where a prepayment customer churns to a new supplier then the Smart Meter should be left in credit mode. We also recommend that any interim solution clearly flags where a Smart prepayment meter is installed, to allow full consideration of the arrangements required to support the customer. Exclusions should also include areas of poor GPRS coverage and possibly “difficult to access” or “technically difficult” (flats) properties.

Any interim solution must provide robust privacy and security measures consistent with the enduring arrangements. Failure to do this could risk the success of the enduring solution (we note the significant issues with regard to failure to ensure privacy and security in rollouts in other countries).

Any interim solutions must be fully tested and accredited. A party should be appointed by Ofgem to be responsible for this testing and accreditation. Testing is vital since any errors in interim processing will affect the enduring solution.

We need agreed standards to cover meters, communications devices, HAN protocols, IHD protocols that we can all use with confidence that they will work with the enduring DCC. In the same way that legacy meters will be replaced, any non-compliant Smart Meters must be replaced at the earliest opportunity to minimise associated risk to the consumer and the SMIP, and any interim solution must not run beyond provision of the DCC due to the complexity and costs associated with running multiple solutions in parallel.

Interim governance arrangements need to be clear, particularly clarity on standards, how to resolve operational issues and settle disputes.

Transition from interim to enduring DCC will require careful planning from the start. Any delay to the DCC will result in interim arrangements becoming more ingrained and harder to transfer to the ensuring arrangements. We think that it would be essential to include interim and transition requirements within the SEC.

We believe that it is essential that Ofgem publish clear criteria and conditions that will apply to communications service providers that we may eventually novate to the DCC. Without these being agreed and published it will be difficult and ultimately more costly to secure interim service providers at sensible costs.

Communications Business Model - Question 5

Do you agree that the licensable activity for DCC should cover procurement and management of contracts for the provision of central services for the communication and management of Smart Metering data?

EDF Energy supports the DCC being a central agency procuring and managing contracts with service providers for communications and data management. We believe that this can simplify industry requirement reducing costs for customers.

Communications Business Model - Question 6

Do you consider that DCC should be an independent company from energy Suppliers and/or other users of its services and, if so, how should this be defined?

We do not believe that DCC should be an independent company from all companies that use its services. Some organisations, for example the transmission system operator, could carry out the role where they do not gain any competitive advantage over their competitors. Equally, a company jointly owned by all network operators or all Suppliers or both or a consortia might achieve that same objective. The DCC should be a regulated activity rather than an extension of regulation.

Whoever is the DCC, we believe that all Suppliers must be suitably involved in the governance of the DCC via the SEC, as primary users of (and payers for) the service provided. We believe that the most appropriate means of doing this is through elections for the SEC panel where voting is proportionate to market share (meters registered). We also believe that we should elect the SEC panel chair rather than Ofgem appointing the chair. SEC governance is a complicated and critical part of the industry design and we would welcome more debate on this subject.

The SEC will have a wider role than just monitoring DCC activities. So SEC management needs to be independent of DCC management. SEC will also be concerned with a variety of activities including monitoring Supplier Licence obligations for metering (which may evolve to include SPAA and MRA in due course). The SEC needs to ensure that the DCC functions to agreed industry standards in order to ensure proper oversight of commercial viability and market efficiency.

Communications Business Model - Question 7

Do you have any comments on the steps DCC would need to take to be in a position to provide its services and the likely timescales involved?

Please refer to our September response where we have commented this subject. EDF Energy has serious doubts that it is possible to implement a full DCC service in the published timescales. Six months for procurement, development and testing and let

alone trialling is extremely ambitious given the complexities involved. We would like to see more robust and detailed planning showing how the industry will implement the DCC and complete all the peripheral tasks necessary for an orderly market. We anticipate that this detailed plan will show that the current timescales will need extending.

We would encourage Ofgem to publish a detailed plan that clearly identifies the critical path tasks.

We believe that it is important that the SEC is in place before mandated rollout under interim arrangements commences.

We are concerned that full technical specifications will not be available sufficiently early to allow other tasks to be completed without undue risks. We cannot consider how to integrate DCC with our other processes and systems until these are available. Making too many assumptions within the plan will increase risk and consequently costs to the customers.

The DCC should only be finally adopted after a “controlled market start-up” with defined volumes and timescales for each stage. This would give the industry and consumers confidence and would avoid some of the pitfalls seen in other countries. End to end pilot testing should be run including security testing.

Communications Business Model - Question 8

Do you have any comments on the proposed approach to cost recovery and incentivisation for DCC?

EDF Energy supports a principle that all parties bear an appropriate portion of both foundation and operating costs depending on their requirements and usage of the DCC's services. DCC users should pay for both new and existing functionality development costs they use as well as associated running costs. For example, Network Operators' increasing use of DCC functionality for Smart Grids should provide a longer term payback to the initial funders of core DCC functionality.

We believe that the funding arrangement we have supported should apply to other service providers that could utilise the Smart Meter infrastructure and DCC, including energy services companies and new service providers to the market.

Ofgem will need to set out a robust price control mechanism for DCC and consider if a profit control is also appropriate.

8. In Home Display

IHD - Question 1

We welcome views on the level of accuracy which can be achieved and which customers would expect, in particular in relation to consumption in pounds and pence.

EDF Energy supports the inclusion to display consumption in pounds and pence on the IHD, with provision for euro's. Feedback from our EDRP trials indicates that our customers see this as the primary piece of information. However, some issues mean we may need to use indicative figures; the primary issue is including CV values when converting gas consumption into pounds and pence.

Also, although the IHD will be fed actual consumption and tariff information from the gas or electric meter, the display of monetary values on the IHD may be based upon averaging factors e.g. to take account of Block Tariff scenarios. Therefore, this is another reason why indicative values may only be possible.

A real-time balance will be very costly to deliver. Ofgem should consider other ways of achieving this or providing the data as at the previous day.

IHD - Question 2

We welcome evidence on whether information on carbon dioxide emissions is a useful indicator in encouraging behaviour change, and if so, how it might be best represented to consumers.

Although initial feedback of including carbon dioxide is not conclusive, even from our own EDRP trials, EDF Energy believes consumer's awareness to this factor will increase over time. We also believe this will be an area for Supplier differentiation in the retail competitive market.

We also need to be aware of carbon references in any potential National or Local Awareness Campaigns, as this will raise the profile of carbon. Hence, if we choose not to display carbon on the IHD, this will inevitably lead to customer confusion as to the drivers for having Smart Meters, which is all about saving energy (cost) and as a result carbon emissions. We would like the CO₂ display to reflect the customer's tariff.

IHD - Question 3

We welcome views on the issues with establishing the settings for ambient feedback.

EDF Energy's EDRP experience shows that ambient feedback is received well by consumers, as an indicative measure of current usage.

However further investigation should be undertaken to establish whether configurations could be included to allow for consumer specific usage and how this could be managed post installation for the following reasons:

- Change of Tenancy – the new occupants have a completely different lifestyle
- Change in the number of occupants – either new born baby increases use of certain appliances e.g. washing machine etc., or children grow up and leave family home and consumption decreases.
- Significant appliance change – purchase of greater energy efficient appliances decreases consumption, or purchase of additional high tech appliances increases consumption etc

All of the above could affect the ambient settings in a negative or positive manner resulting in the wrong signals to the customers, which may lead to actions that we do not desire. Hence, we need to undertake considerably more analysis into the practicalities of implementing configurable ambient settings.

With regard to certain loads masking the underlying usage, EDF Energy recognises that this is an issue e.g. heating load. However, identifying specific load could introduce additional cost and complexity to both the IHD e.g. added algorithms and the meter i.e. dual element meter to record heating load. One possible solution to this would be to utilise software that is capable of identifying different appliances within the home. However, in view of the cost of this software it is unlikely that this would be included within the basic IHD that we would provide under the mandate. We would potentially offer this under an advanced IHD offering to the customer.

We also believe that all Suppliers should share their basic IHD specification in order for any new Supplier to be able to handle consumer queries on the IHD post CoS.

IHD - Question 4

Do you think that there is a case for a supply licence obligation around the need for appropriately designed IHDs to be provided to customers with special requirements, and/or for best practice to be identified and shared once Suppliers start to rollout IHDs?

EDF Energy does not believe a specific supply licence obligation is necessary for customers with special requirements. We would prefer to deal with this issue via 'best practice'. We would welcome further investigation as to how the industry can achieve this, as there are also many other mediums that can be used to provide this information e.g. Web etc., where consumers may already have a suitable and preferred media in the home.

IHD - Question 5

We welcome evidence on whether portability of IHDs has a significant impact on consumer behavioural change.

EDF Energy supports the approach of not making portability a minimum requirement, but do not have any quantitative evidence to support this. However, the ability for customers to walk around the house whilst they manage their consumption e.g. turn appliances that are on standby off and be able to view the result of that action, should engage customers in becoming more educated in their use of energy.

On the other hand, EDF Energy would not want to have any obligation imposed on Suppliers to fix the IHD in one permanent position. Suppliers should have flexibility on how they deliver this requirement.

It is possible that the basic IHD is unlikely to have battery power, since this will impose extra cost for no proven benefit, but should be portable to allow the customer to plug it into any standard mains socket for viewing of specified information. EDF Energy believes that consideration should also be given to the incorporation of the following features into the basic IHD design:-

- Provision of a battery compartment into which a battery can be inserted should prepayment functionality be required at a later date.
- Power-down functionality which subject to battery presence shuts the IHD down into a dormant mode in order to conserve battery energy requiring a button press by the customer to re-activate.

See more details in EDF Energy's September response.

Following a power outage there may be a need for the IHD to reconfigure automatically if no battery back-up is provided.

IHD - Question 6

Do you agree with the proposed minimum functional requirements for the IHD?

EDF Energy agrees with proposed minimum functional requirements for the IHD with the following comments.

- IH.1 – The IHD shall support mains powered

IHD should have appropriate power supplies. This will usually mean they are mains powered but other power sources may be used, e.g. batteries or solar cells. Battery power may be necessary to support PAYG arrangements. See also IHD question 5 above.

- IH.2 - Accurate cumulative consumption in kWh and £ (or €) for current day / week / month / billing period

We need to define 'accurate' and what this really means, in order for there to be no confusion or differing interpretation of this requirement by Suppliers.

There will also be occasions when the IHD becomes faulty and the Supplier provides a new IHD. In these situations, the IHD can only retrieve historical data for week / month / billing period from the meter. Therefore, we need to ensure this requirement is part of the meter specification. The data provided from the metering system may well have changed by the time that an IHD is replaced and hence some data might be lost. Hence, comparisons might not be possible until the IHD has established some history with which to draw comparisons.

There are also a few scenarios where data stored on the IHD, may not be suitable for comparison:

- Change in Tenancy – the old consumer may object to his consumption being available for the new consumer
- On Change of Supply would the old Supplier have any grounds to object to the new Supplier viewing that data?

Governance and data curtaining arrangements will need to be agreed for each of the above scenarios.

- IH.2 - Accurate account balance information (amount in credit or debit) in real time for prepayment customers and on at least a monthly basis for credit customers

In respect of the use of the IHD for the provision of 'Account Balance', if mandated, EDF Energy would propose that this is only provided on an agreed time interval and as an approximation of the full bill amount to avoid the need for dynamic re-calculation of the bill adjustments on each and every request.

The Prospectus states that should the customer request their account balance on a more frequent basis, then Ofgem would expect Suppliers to provide this. Ofgem also stated that the communication costs are the main consideration in providing more frequent updates to the IHD for account balances. EDF Energy does not agree with this and believes the additional costs in back office systems and processes will far outweigh communication costs. In fact, the ability to comply with this may become a greater burden that may not be possible to deliver in a cost effective manner.

EDF Energy also believes more frequent updates could cause confusion to consumers, particularly where block tariffs are concerned and the higher unit rates are applied for the first block, along with the complexity of applying discounts and other variable aspects on tariffs that typically cannot be calculated until a full billing period has expired.

- IH.2 – Current Tariff

Clarity is required on what this actually means and what data we will be required to display, between the following:

1. Do we only display the rates for the various component parts of the tariff, in a static format, or
2. To show the current rate (pence per unit) for the time of day the consumer views the IHD? If it is this, then this could be problematic dependent on how the meter rates are set up i.e. UTC or BST compared to local time on the IHD, or
3. To simply display the name of the current tariff the customer is being billed on?

- IH.2 – Local time

This could cause confusion to consumer, dependent on how the time is configured on the meter. We need to be careful we do not inadvertently introduce confusion to the consumer, whereby they are looking at the local time on the IHD and actually see a current usage cost higher than their expectations, because the meter is running on UTC and the current time band rate on the meter is a high rate etc.

- IH.2 - Minimum real time update for electricity is 5 seconds, for gas it is 15 minutes.

HAN requirement HA.11 states 'The HAN interface shall support 30 minute update (wake up) frequency from battery powered nodes. It is recognised that a 15 year battery life for a gas meter is not compatible with real-time communication, hence a relaxed requirement for battery powered nodes.'

This is not compatible with IHD Requirement IH.2, which states 'Minimum real time update for electricity is 5 seconds, for gas it is 15 minutes.' We would welcome clarification over this anomaly. Particularly as the gas meter will only be available to transmit data on a half-hourly basis.

- IH.3 - The average IHD power consumption shall be less than 0.6W

This could restrict the type of IHD provided under innovation and enhanced IHD product offerings. Therefore, this power requirement should only apply to the basic IHD mandated requirements. Should the consumer wish to have a more advanced and enhanced IHD, then this could consume more power than 0.6w. We would highlight this to the consumer as part of the package we offered to them.

- General point

The data made available to the HAN/IHD should be standardised to allow Suppliers to communicate to an IHD, installed by another Supplier. How the IHDs manipulate and displays the data should be subject to the defined minimum Smart Metering functional requirements.

IHD - Question 7

Do you have any views or evidence relating to whether innovation could be hampered by requiring all displays to be capable of displaying the minimum information set for both fuels?

EDF Energy believes that a requirement for all displays to be capable of displaying the minimum information set for both fuels would not hamper innovation. We support this requirement.

By ensuring that all IHDs comply with technical interoperability, the Customer will be able to choose from a range of devices, both offered by their Energy Supplier, or ultimately from the open market.

IHD - Question 8

Do you agree with the proposals covering the roles of and obligations on Suppliers in relation to the IHD?

We agree the Supplier should be responsible for installing the IHD, at point of 1st Smart Meter installation, which will typically be through its metering agents. We also believe the customer's current Supplier, which may not be the supplier who installed the IHD, may have an enduring obligation for maintenance of the IHD. This would only be where the primary use is for Prepayment, and only where the meter location is not accessible, or at the Supplier's discretion where it is deemed the meter display or location is not appropriate e.g. elderly, special needs etc.

We believe the installing (lead) Supplier should not be held responsible for support / maintenance post Change of Supplier. Responsibility should transfer to the new Supplier or else be delegated to the asset owner. The reason being that there are certain situations that need clarity, for example:

- If more than one CoS occurs in the first year how will the current Supplier know who the lead Supplier was that installed the IHD, should they need maintenance to be carried out?
- Where there are two Suppliers at the consumers premise and the second Supplier does something to corrupt the IHD e.g. software download etc. why should the lead Supplier have the responsibility?

Although the Supplier may be responsible for providing domestic customers with a display device during rollout, this does not necessarily mean that they will own this asset. There may be other financial arrangements whereby these devices are provided. As a result, if the IHD asset owner has incurred the capital outlay, does that mean he is able to charge for its use by the varying Suppliers' through a rental charge? There will be countless situations where the initiating Supplier, that negotiated the financial arrangement, may not have an enduring relationship with the customer as follows:

- Initiating Supplier loses customer supply contract to another Supplier

- In a two Supplier at site scenario the second Supplier installing their Smart Metering installation was not party to the purchase of the IHD.
- The new Supplier after Change of Supply, or indeed subsequent Suppliers, dependant on the customers desire to move Supplier would also not have any relationship with the initiating Supplier of the IHD.

Therefore, how does the asset owner of the IHD recover its costs? How long would this be allowed for, if responsibility for maintenance ceases after one year for credit consumers, but is it enduring for Prepayment?

On a more general point, there is very little reference to the need to comply with WEEE and Waste Battery & Accumulator Regulations for disposal etc and this should be considered.

Any solution requires there to be an asset tracking database, for potential situations where manufacturers may issue recalls under warranty etc. We are obliged to provide details of where these devices have been provided.

9. Non-Domestic Sector

Non-Domestic Sector - Question 1

Are there any technical circumstances where only advanced rather than Smart Metering would be technically feasible? How many smaller non-domestic customers have U16 or CT meters and what scope is there for full Smart Meter functionality to be added in these cases?

We are not aware of any other technical circumstances that are peculiar to SME sites, other than U16 and CT metering, where only an advanced meter would be feasible. CT metering and large gas meters might very occasionally be encountered in domestic situations, clearly these will need to be dealt with as exceptions to the rule i.e. advanced metering.

The prospectus refers to profile class 3-4 consumers retaining the right to have advanced metering option. We need clarity about these sites with U16 or CT metering retaining, post April 2014, the option for advanced metering. As profile Class 5-8 consumers are not within the scope of this consultation, they will continue to be subject to the Advanced Metering mandate that came into force April 2009.

The numbers of CT and U16 meters encountered during rollout is expected to be small and at present, we only have approximately 200 gas sites with U16 meters and approximately 6,500 CT electric meters which represent approximately 1% of our non-domestic (PC3-4) metering portfolio. The circumstances where we will encounter CT and U16 meters are either because the load has changed dramatically or because in the past EDF Energy installed 100A CT metering for specific site reasons.

Non-Domestic Sector - Question 2

Do you agree with our proposed approach to exceptions in the smaller non-domestic sector?

We agree with the proposed approach to exceptions in the smaller non-domestic sector. The market design chosen for the non-domestic smart sector should be the same as for the domestic smart sector, except where the customer chooses the large business advanced metering option and this should continue post April 2014.

In today's market Large Business customers have a variety of sites spanning differing sectors i.e. PC 3-4, PC5-8 and HH. These customers can have contractual relationships direct with the Data Collector/Data Retriever to provide enhanced energy management data, or could have a similar arrangement direct with their Supplier. Hence these customers require a single solution to their billing and energy management information requirements and therefore their preference is for a single solution i.e. either all of their Customer sites within their portfolio are supplied via AMR or by Smart. Clearly as a result of the Large Business mandate, most of these Major Customers would already have the bulk of their suites supplied via AMR and would

want other premises to follow e.g. acquired new sites and new connections to their portfolio.

Non-Domestic Sector - Question 3

Are there technical circumstances that we have not considered that would justify further flexibility around installation of either smart or advanced meters?

We are not aware of any technical circumstances that are peculiar to SME sites.

However, we would like to share our experiences to date of technical circumstances encountered in the large business AMR rollout to.

Within the AMR rollout it has not been possible to install communications to 10% of properties e.g. meters in basements with considerably thick concrete floors that WAN Communications cannot penetrate and either the customer was not prepared for a hard wired aerial to be installed, or it as physically impossible to penetrate the floors to install the hard wired aerial. Advanced Metering has been installed in these sites, so that if another WAN Communication solution resolves these issues, we only have to install the communication equipment. Another 20% required additional equipment to be installed (e.g. hardwire communication line to an external aerial).

Also, we have experienced issues with landlord owned sites, where potential external antennas and hardwiring maybe required and permission from landlords is required by the tenant before the SME customer can have the advanced meter fitted. We are sure that such situations will occur in the Smart Metering rollout for SME customers. Dependent upon the range of solutions that are available this might also apply in some domestic situations.

Non-Domestic Sector - Question 4

Do you agree with the proposed approach that use of DCC should be optional for non-domestic participants in the sector?

EDF Energy believes that if a Smart Meter is installed within a non-domestic premise (PC 3-4 and the gas equivalent) then they should follow the mandated route of using the DCC, as in the domestic market. The only exception to this should be where AMR metering has been fitted for the following reason.

In today's market Large Business customers have a variety of sites spanning differing sectors i.e. PC 3-4, PC5-8 and HH. These customers can have contractual relationships direct with the Data Collector to provide summarised / graphical display of energy data, as well as direct with their Supplier. Hence these customers require a single solution to their billing and energy management information requirements and therefore their preference is for a single solution i.e. either all of their Customer sites are supplied via AMR or by Smart.

As a result of the above, the mandated use of the DCC wherever a Smart Meter has been fitted into a non-domestic sites should be mandated. This brings a number of benefits:

1. Would only create two models in which metering would exist i.e. the AMR model and the Smart Meter DCC model.
2. Simplification of processes and systems, hence we agree with the reasons given in section 4.33 of the Non-Domestic Prospectus paper concerning this.
3. Access control, security and privacy is governed and managed under either of the two models and not left to each Supplier to build and maintain these environments.
4. Provides a level playing field and facilitates greater interoperability,
5. Would not introduce a third model i.e. each Supplier chooses which provider and platform they will use for non-domestic, making the CoS process more complex and heightens the risk of meter stranding issues when a new Supplier cannot interact with the old Suppliers infrastructure, communications and meter, resulting in added cost to visit site and install a meter and communications that they can utilise.

Non-Domestic Sector - Question 5

If use of DCC is not mandated for non-domestic customers, do you agree with the proposed approach as to how it offers its services and the controls around such offers?

We agree the DCC should not be able to offer energy management and efficiency services, as they will be in an exclusive position to exploit this opportunity.

We also agree with the proposal that the DCC would be obliged to offer terms for use of its services on the same basis to Suppliers or metering service agents of both non-domestic customers and domestic customers.

Non-Domestic Sector - Question 6

To what extent does our proposed approach to the use of DCC for non-domestic customers present any significant potential limitations for Smart Grids?

EDF Energy believes this could be a major issue for Network Operators if Smart Grids is developed and most Non-Domestic premises are not utilising the DCC as the master source of data and master route for interaction with the Smart Meter. To overcome this would require bilateral arrangements between all network operators and all Suppliers / Communication Agents resulting in extra admin, complexity and cost, particularly to deal with differences between interfacing standards (systems in back offices, possibly meters too) and capabilities and SLAs, especially if network operators required access to manage load etc.

However, another significant limiting impact on the Smart Grid requirement is the volume of energy used in the HH and Large Business AMR markets (approx. 50% of all energy) that will not be going through the DCC and how network operators will handle this. Hopefully, some of these questions will be answered in the future, once all of the various Low Carbon Network Fund (LCNF) initiatives are developed, implemented and findings published.

Non-Domestic Sector - Question 7

Is a specific licence condition required to ensure that metering data for non-domestic customers can be provided to network operators or DCC, and should any provision be made for charging network operators for the costs of delivering such data?

EDF Energy believes that there is no requirement for a specific licence condition to provide data to network operators. Following a thorough assessment of the data required by network operators, it may be possible that these provisions could be delivered via DCUSA, and should be addressed within the SEC.

Also, if Suppliers are asked to supply the data free, their obligation should be restricted to providing the raw data only. If any manipulation is required to present it in a certain manner, then this should be considered as added value services for which it would be reasonable to make a charge for that service, in view of the systems and processes that would need to be developed to provide this.

If any such condition was imposed we must ensure it only relates to compliant Smart Meters in PC 1-4

Non-Domestic Sector - Question 8

How can interoperability best be secured in the smaller non-domestic sector?

As stated in the prospectus technical and commercial interoperability can only be achieved by mandating the use of DCC, where a Smart Meter is installed in a non-domestic premise. Therefore we would recommend this is the approach taken.

Non-Domestic Sector - Question 9

What steps are needed to ensure that customers can access their data, and should the level of data provision and the means through which it is provided to individual customers or premises be a matter for contract between the customer and the Supplier or should minimum requirements be put in place?

EDF Energy believes that there should be no additional Supply Licence conditions imposed for the provision of data to non-domestic consumers, above those already imposed within Supply Licence Condition 12 for the large business mandate that commenced in April 2009. The Supplier should be allowed full flexibility with their

customers, under contractual arrangements, to provide data at whatever level and through whatever media that is acceptable to both parties.

Non-Domestic Sector - Question 10

Do you agree with our approach to data privacy and security for non-domestic customers?

EDF Energy agree that consumers should have unfettered access to data and should be able to choose how their consumption data is used and by whom, with the proviso that if the Supplier is requested to provide more than just the raw data, then it would be reasonable for them to provide a charge for this service to cover the costs associated with the systems and processes that would have to be out in place to manage this activity. Indeed the data security and privacy rules for non-domestic should be the same as the domestic sector.

However, EDF Energy has a concern as to how consumers will authorise third parties to collect data on their behalf and agreement is therefore needed as to what level of data should be allowable and the mechanism for collecting it e.g. will this be locally through the Smart Meter an HAN at the consumers premise, or through the DCC. Any interaction with the DCC needs to be formally managed e.g. how is the DCC advised that a third party has been given authority from the consumer to have their data?

In order to protect the consumer from unscrupulous third parties, EDF Energy believes that all third parties need to be regulated and accredited to use the DCC and be subject to the Smart Energy Code. Indeed this should be the case for any energy management/efficiency services should they use the DCC for access to data, or not i.e. the consumer provides it locally. Also, third parties should be subject to the same DCC charging mechanisms for all message traffic directly, in order to provide a fair and competitive platform for these services.

EDF Energy also agrees with the principles of applying DPA to the non-domestic sector, but it also requires additional security e.g. third party energy service providers should be subject to regulation and accreditation to ensure they are acting in the best interests of the consumer.

We agree with the principles of managing risk and putting in place the necessary specifications that industry will be required to adopt.

However, the proposed option of Suppliers using the DCC for non-domestic consumers raises concerns over the privacy and security design by principles. In that differing service providers outside of the DCC may interpret standards in differing ways and instead of a single uniformed approach, processes etc. for all domestic and non-domestic consumers to utilise the DCC, which is the EDF Energy preference, could lead to breaches which in turn could impact the confidence and trust of consumers and could jeopardise the overall mass deployment of Smart Meters.

Non-Domestic Sector - Question 11

Is the proposed approach to rollout (for example in terms of targets and a requirement for an installation code of practice) appropriate for the non-domestic sector?

EDF Energy believes the smart non-domestic sector should follow the same principles as the domestic sector, since different approaches would add costs and cause confusion. EDF Energy believes that Supplier's flexibility to manage and control their rollout is paramount for smart SME and domestic customers.

EDF Energy also supports the need for an Installation Code of Practice to be applicable to both the domestic and non-domestic sectors.

**EDF Energy
October 2010**