SP ENERGY NETWORKS

Regulation & Commercial

By e-mail

Smart Metering Implementation Programme
Department of Energy & Climate Change
3 Whitehall Place
London
SW1A 2AW

Your ref

Our Ref

Date
8 October 2012

Contact / Extension

Dear Colleague

Consultation on the Second of the Smart Metering Technical Specifications (12D/258)

I am writing on behalf of SP Energy Networks in response to the above consultation paper issued on 13 August 2012. We welcome the opportunity to comment on the points raised. Our detailed response is set out in the attachment.

I hope that this is helpful, but please contact me if there are any queries.

Yours sincerely

Att.

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Consultation on the Second Version of the Smart Metering Technical Specifications (12D/258)
Detailed comments by SP Energy Networks, October 2012

Question 12: Do you agree with the proposed scope of functional requirements for a communications hub? Are there any other functions that should be included and what would be your rationale for including those functions?

We believe that the proposed scope of the communications hub is appropriate. As a DNO however we would like to have the confidence that the format of outage messages that are issued by the communication hub is consistent between CSPs as SP Energy Networks along with a number of other DNOs own and operate two regional licensed networks which are covered in different CSP franchise areas. It will be important that a standard format is available so that the outage and restoration messages are the same as they will be processed by the same network management systems.

We also note that no mention is made of the maximum power consumption requirements of the Communications hub nor the meter within the consultation document and would urge that an upper limit is specified for both devices as these are recognised as being unmetered consumption and will need to be accounted for within the electricity system. The proposed functionality of the communications hub now appears to be more extensive than initially planned which is likely to translate into greater power consumption. The communication hub will also be require to meet a similar specification to the meter with respect to over/under voltages which it may be subjected to in order to minimise any risk of catastrophic failure.

Question 13: Do you have views on the specification for an 'intimate' interface between electricity meters and communications hubs?

We have no particular views on the specification however we would highlight that any interface requires to be robust enough to minimise the risk of interference by a third party which may result in safety risk through electrocution or fire and the opportunity of theft.

Question 14: Do you agree with the Government's marginal preference for the CSP-led model for communications hub responsibilities, or do you prefer the supplier-led model? Please provide clear rationale for the advantages and risks associated with your preferred option

Yes, we are in broad agreement with the Government's CSP-led model. This removes any possibility of any ambiguity relating to the obligation on CSPs to provide a 'fit for purpose' end-to-end two-way communications system.

Question 15: Do you agree with the proposal that a CHTS-compliant communications hub should not be mandated for opted out non-domestic sites and that suppliers should be free to use whatever type of communications equipment best supports their processes and WAN services?

We would like to highlight the lost opportunity of not encouraging non-domestic sites to utilise the CHTS-compliant communications hub as this will prevent the DNO having access to the same level of information on the network as they would have from the compliant hub. In particular, the outage notification functionality which is proposed for the communications hub will be lost and we believe that this functionality will not otherwise be available for non-domestic customers. If a non-compliant hub can be installed we would urge a minimum specification to be set which would allow for such alarms to be generated so that the DNO has the maximum possible visibility of customers.

Question 17: Do you agree that the design and implementation of outage reporting functionality should be assigned to CSPs, documented in the communications hub technical specification?

Should the CSP-led roll out be confirmed, we agree that this will require to be specified within the communications hub technical specification. We would suggest that a greater level of detail will be required on the format, response time and accuracy of such alarms. Of particular concern is where a CSP provides this service through other means than the communications hub such as through the WAN infrastructure. If a high degree of accuracy is not achieved in reporting such alarms, customers are likely to be impacted as they will be expecting the DNO to automatically be aware of an outage. As highlighted in our response to question 12, many DNOs including SP Energy Networks operate distribution networks which may be served by different CSPs. We would encourage a common approach is taken by all CSPs to managing outage notifications as these will all be managed within the DNOs systems by a single system, otherwise this will result in significant extra cost to the DNO to process different sets of alarms for the same purpose within our internal systems.

A distinction also needs to be made between Power Outage reporting and Power Outage Detection. Power outage reporting, as required for regulatory purposes, can be provided by the electricity meter. This simply requires the meter to time stamp when the incoming supply is lost and subsequently restored. If the time difference between the two events is greater than 3 minutes, an alert should be sent to the DNO to indicate that power has been restored, together with the associated event time stamps.

It is the power outage detection (Last Gasp) functionality which creates the need for some form of power supply to be included to enable an alert to be sent to the DNO when the outage persists for more than 3 minutes. It is this second requirement which we recognise could be best provided by the communications hub / wider communications infrastructure as determined by the CSP.

Question 18: Do you agree that it would be inappropriate to require meters operated outside DCC to be required to implement outage reporting? Please provide rationale to support your views.

We appreciate the complexity and cost that would be involved in requiring meters operated outside of the DCC to provide outage reporting however, choosing to opt out of the DCC may inevitably compromise the future benefits of smart metering and smart grid in Great Britain with the potential for inconsistencies in systems, processes and operational data. Challenges may also be presented around commercial and technical interoperability. Therefore for sites which have been opted out, network operators and consumers may miss out on the benefits of quicker identification and rectification of faults by network operators.

Our preference would be that all meters, including opted out meters have the capability of outage reporting so that the DNO has complete visibility of the status of a customer's supply. Should a customer have a meter which is opted out and is incapable of outage reporting, we feel that suppliers should be obliged to highlight this arrangement to the customer and ensure that they are aware that they will manually need to contact the DNO to notify them of any unplanned outage.

Question 19: Do you agree that maximum demand registers should be included in SMETS? Please provide evidence to support your position and provide evidence on the cost implications of delivering this functionality via back office systems or via the meter.

Our preference is for option 1 which is the inclusion of maximum demand registers within the meter.

Maximum demand registers provide the facility for network operators to gain an 'early warning' of emerging load growth and hence potential network problems. This might become particularly important as increasing levels of electric vehicles and electric heating displace conventional fossil-fuelled transport and heating systems.

Whilst such information can be approximated through aggregated half-hourly consumption data, the ability to record maximum demands for selected groups of consumers / networks (i.e. where relatively high network loading is suspected) over a configurable period would impose a much reduced requirement on communications systems in terms of data traffic volumes and data processing.

With due regard to security-critical data flows, as identified through the recent CESG security review undertaken on behalf of DECC, the availability of maximum demand registers would also significantly reduce the volume of messages associated with half-hourly consumption data and hence have the desired effect of reducing 'rogue message' risk.

It is important however to understand that this additional functionality does not displace the requirement for half-hourly data. The approach would typically be that once a potential issue had been identified as a result of analysis of maximum demand readings, the network operator would then initiate measurements and aggregation of half-hourly data in order for a more accurate assessments of network loadings and voltage levels.

The ENA has presented to DECC a cost-benefit analysis showing the relative costs and benefits of including and not including maximum demand registers; the analysis demonstrates a positive case for including DNO configurable maximum demand registers.

Question 20: Do you agree with the proposal not to include the capability to generate additional voltage alerts based on counter thresholds in SMETS 2? Do you have any evidence that could justify including this functionality in SMETS 2?

We agree that this is reasonable however we need to ensure that the capability exists for DNOs to be able to configure voltage alarms so that should the number of alarms that are being generated overwhelm the communication system or the DNOs system, the alarm threshold can be appropriately adjusted. This functionality would avoid the generation of spurious alerts and the need for network operators' systems to be able to differentiate between occasional (or even one-off) and repetitive / frequently occurring voltage issues. Such differentiation is important in order for the network operator to determine whether, and how urgently, the matter should be investigated and corrective action taken. Further it would also reduce the communications requirements but the trade-off with the incremental cost in the meter functionality is understandable.

Question 21: If DNOs were permitted to access remote disablement functions, should control logic be built into DCC systems or meters? If the logic should be built into meters, should the logic be specified in SMETS 2? Please provide rationale to support your position including estimates of the cost of delivering this functionality under the different options being considered and any evidence relating to safety issues associated with each option.

The consultation correctly acknowledges that circumstances could arise in future whereby DNOs might need access to disablement functions as part of their efficient, coordinated and economic management of their electricity distribution systems. A scenario (not cited in the consultation) which the ENA has put forward is that with increasing penetration of electric vehicles, heat pumps and micro-generation connecting to low voltage distribution networks, there will be a need in future to more intelligently manage supply restoration following either a planned or network fault outage.

During supply outages, micro-generation, which is normally offsetting demand supplied by the network, will necessarily cease to operate. It follows that on supply restoration following an outage, this additional (so called) 'latent demand' will be presented to the network exacerbating the cold load pick up impact until such time that the micro-generating reconnects and begins again to offset network demand.

It is therefore envisaged that DNOs might at some stage in the future use the disablement function in order to manage a staged restoration of supplies – i.e. allowing diversity of demand to re-establish and micro-generation to reconnect before subsequent stages of restoration are initiated. (In practice, supplies would need to be restored in order to power-up the communications module and hence allow the disablement function to be initiated but, due to the inherent thermal inertia of electricity network assets, provided disablement is initiated immediately following restoration, the cold load pick-up phenomenon would be sufficiently mitigated). The alternative to this is that DNOs might need to invest in increased network capacity purely to deal with cold load pick-up, which would clearly be undesirable.

We agree that logic would need to be incorporated in the overall smart metering system in order to ensure that disablement / enablement actions initiated by Suppliers and DNOs would not be in conflict. We acknowledge the argument that there might be economic merit in incorporating this logic within the DCC system rather than at each meter, but we are aware that there is as yet no available information as to how the DCC system might provide this logic. A concern therefore arises in that if the functionality is not included in SMETS 2, and difficulties then arise in incorporating the necessary logic with the DCC system, the opportunity might be lost.

A pragmatic way forward might therefore be to not include the logic in SMETS 2 with the reasonable expectation that DCC system approach might prove more economic, but with the caveat that should it subsequently prove impractical to incorporate the logic within the DCC system, a revision to SMETS 2 (i.e. SMETS 3) would then be drafted with the expectation that any smart meter installed from that point in time would incorporate the required logic. Whilst this result in SMETS 2 (and earlier) meters being unable to provide the functionality, it would be reasonable to assume that the population of SMETS 2 and earlier meters already rolled out would be relatively small compared with the overall population of smart meters. Hence, notwithstanding that there might be clusters of SMETS 2 and earlier meters in some locations, in the general case there should ultimately be sufficient numbers of SMETS 3 (or later) meters able to provide a disablement function for DNOs.

We recognise that the use of this function during roll out could also be perceived by customers as a disadvantage and during the early stages of rollout we do not believe that the remote disablement of meter should be considered.

Question 22: Do you agree that variant smart electricity meters should be specified in SMETS 2 and that the cost uplift for variant smart meters is similar to that for variant traditional meters? Please provide evidence of costs to support your views on cost uplifts.

We agree that variant smart electricity meters should be specified in SMETS2. While single element and twin element meter variants are required to meet the requirements of existing wired arrangements in domestic homes, the inclusion of auxiliary load switch controls with the contactor integral or external to the meter is anticipated for a wide range of future demand side management uses. In addition, specifying meter variants within SMETS 2 will help to ensure interoperability and consistency of the functions of the meter such as alarm generation.

Question 23: Do you agree that randomisation offset capability should be included for auxiliary load control switches and registers as described above? Do you have views on the proposed range of the randomisation offset (i.e. 0 – 1799 seconds)? Please provide evidence on the cost of introducing this functionality.

We agree that randomisation offset capability should be included for:

time of use rate changes;

auxiliary load control switches and

associated activation/de-activation of linked tariff registers.

We also support the randomisation being applied at the meter as a positive offset of up to 30 minutes from a scheduled switch time on the understanding that this requirement is simpler to implement than a +/- 15 minute randomisation. Randomisation should be able to be configured to be on or off as associated with each price switch arrangement.

We accept the reasoning behind the randomising of a switch between time of use price registers where there is no associated link to the activation / deactivation of an auxiliary load switch on the basis that consumers may have demand side management systems that will automatically react to price signals (via their Customer Access Device) to bring on or take off load.

As a DNO we view this as an essential requirement to avoid instantaneous load pick up and drop off which will result in stress on the electricity network which may require additional reinforcement.

Question 29: Do you agree with the proposal that the communications hub should be specified such that it can support multiple smart electricity meters? How many smart electricity meters should be supported by each communications hub?

Yes, SP Energy Networks strongly support the proposal. Given DECC's latest projections for micro-generation - in particular solar PV - it will become increasingly important to measure (rather than estimate) the electrical energy generated by each micro-generator. Whilst this will be important to ensure that consumers are properly remunerated under the FIT our main concern as a network operator is that we are able to monitor the development of 'latent' demand which micro-generation will give rise to.

Question 31: Do you agree with the proposed approach to the governance of security requirements? If you propose alternative arrangements please provide evidence to support your views.

Yes, we agree with the proposed approach however we would recommend that consideration should be given to the elective co-opting of parties to the SEC Technical Sub-group to ensure it is for appropriate interests.

Question 32: Do you agree with the proposal to establish independent assurance procedures for DCC and DCC users? Please explain your views and provide evidence, including cost estimates where applicable, to support your position. Comments would also be welcome in relation to the impacts and benefits of the proposed approach with regard to small suppliers.

Yes, we agree that an independent assurance regime would be an appropriate measure in ensuring that all parties have suitable processes and procedures in place to militate against security breach.

Given the nature of potential security threats, we believe a single market approach to risk mitigation is necessary. Assessing all parties against the same measures it will provide confidence that weakness can be clearly exposed and addressed in a consistent manner.

Question 33: Do you agree with the proposal that re-testing should occur at least at set intervals and more frequently when significant changes to systems or security requirements are introduced? Please explain your views.

We do not believe that a routine of full retesting is necessary. Instead, we would prefer an audit regime where variations are monitored and retesting determined based on a set of predetermined principles e.g. following significant system change. In taking this approach, we believe this would roughly align to existing energy industry practices.

Question 34: Do you agree with the proposal to establish an independent security certification scheme for smart metering equipment? Do you have any views on the proposed approach to establishing a certification scheme or evidence of the costs or timelines for setting up such a scheme or submitting products for certification?

Yes, we agree that it would be appropriate to establish an independent security certification scheme.

We believe that it would be appropriate for the regime to be established under the SEC and an appropriate SEC Panel Committee. However, implementing this approach may be presented with initial timing challenges. We therefore, think that in the first instance a separate scheme should be established transitioning into the SEC at the earliest opportunity.

Question 35: Do you agree that sanctions for non-compliance with security requirements should be included in the SEC? Do you have views on the nature of the sanctions that might be imposed?

We agree that DCC sanctions for non-compliance with security requirements should be included within the SEC. However the way in which any sanctions are imposed requires careful consideration and should be based on the materiality of the risk presented.

We believe that parties should be given appropriate timescales to correct any non-compliance with clear guidelines of the actions that they must take. In cases where parties have consistently failed to comply with security requirements, or have made no or little attempt to rectify their non-compliance the penalties should be increased including redaction of their accession to the SEC and possibly licence revocation.

Question 36: Do you agree with the proposal to, in effect, extend the arrangements already proposed for SMETS installations prior to DCC operation, to all installations being operated outside DCC? Please provide evidence of the costs that might be incurred and the impact of this approach on small suppliers.

We agree that there should be broadly equivalent security requirements for metering systems operated outside DCC but appropriate to the level of risk imposed on other parties (including consumers) from an independent (from DCC) smart metering system.

Network operators in particular would need to be assured of adequate provisions for security in considering any opportunities for interfacing with non-DCC systems in order to provide information relevant to their networks (for example data relating to voltage, power outage, maximum demand, or consumption)

Question 37: Do you agree that interoperability is central to the development of a successful smart metering solution and that activities related to the assurance of SMETS equipment should be governed by SEC? Please provide views on the governance arrangements that would be appropriate for assuring interoperability of smart metering equipment.

Yes, we agree that interoperability is central to the success of smart metering rollout in Great Britain and the smart metering experience that consumers will receive.

Question 43: What are your views on the Government's proposals for obligations to be included in the SEC for information to be made available to Network Operators and ESCOs via the DCC?

As a DNO, SP Energy Networks view it as essential that obligations should be included in the SEC and the DCC Licence Conditions as appropriate for information to be made available to Network Operators and other relevant parties. Delivery of the network benefits from smart metering is dependent upon the DNO being able to access information from smart meters. Such an obligation is therefore an essential prerequisite to the successful deployment by network operators of smart metering system functionality to support them in fulfilling their statutory obligations (see our responses to questions 29 and 31 above). It would also seem reasonable that these obligations are applied to all domestic smart metering systems that have been enrolled with the DCC by the end of 2019. Since network operators regard the services (which SMETS defined functionality gives rise to) as 'core' services, it follows that an obligation on suppliers and the DCC as appropriate to make available the information is essential.

In addition to requiring the DCC to deliver information to the Network Operator, there should be a requirement for the DCC to provide the services to the Network Operator e.g. to configure the smart meter and respond to commands / instructions (subject to the appropriate governance). As a price controlled service provider, the DNO will expect there to be a transparent charging methodology for charges levied by the DCC for communication and data services. We would also not expect any additional charges from suppliers as meter owners for provision of information (by analogy with current arrangements whereby settlements data is made available as appropriate to DNOs without additional charge). We would like this to be confirmed in the SEC and supply licence conditions as applicable.