Profiling and Settlement Review: CBA Impact Assessment Responses

Impact Assessment issued 25 August 2010 (response deadline 08 Oct. 2010)

We received 25 responses from the following Parties.

No.	Company	Confidential	Role of Parties/non-Parties represented
1.	E.ON UK Energy Services	-	NHH Agents: MO,DC,DA
2.	National Grid	-	System Operator
3.	Smartest Energy	Y, part	Supplier/Consolidator
4.	Electricity North West Ltd	-	Distributor
5.	eMeter	-	Smart meter software company
6.	TMA	-	NHH & HH: DC, DA Agents
7.	Western Power Distribution	-	Distributor
8.	Electricity Network Company	-	Independent distributor
9.	Scottish & Southern Electricity	-	Supplier, Supplier Agents, Distributor
10.	EdF Energy Networks	-	Distributor
11.	CE Electric Uk	-	Distributor
12.	Association of Meter Operators	-	Metering Organisation
13.	MRASCo	-	Supplier Registration Organisation
14.	RWE Npower Supply	Y	Supplier
15.	RWE Npower Supplier Agents	Y	NHH & HH Agents: MO, DC, DA
16.	Siemens Metering Services	-	CVA MOA; NHH & HH Agents: MO, DC, DA
17.	G4S Utility Services	-	NHH Agents: MO, DC, DA (& HHMO)
18.	Central Networks	-	Distributor
19.	Invensys IMServ	-	NHH & HH Agents: MO, DC, DA
20.	British Gas	Y, part	Supplier
21.	Stark International	-	HHDC HHDA, NHHDC, NHHDA
22.	E.ON UK	-	Supplier/Consolidator
23.	EdF Energy	Y, part	Supplier
24.	Scottish Power	-	Supplier
25.	Pilot Systems	-	3rd party data retriever

Questions for Suppliers

Question 1:

What are the additional set up costs and impacts (and any lead times) in settling all your Profile Class 5-8 customers HH by 6 April 2014 (assuming that Advanced metering is installed)? Please break down your costs by MPAN (or per portfolio) for:

a) Internal process and systems
b) Supplier Agency costs, Meter Operation, Data Collection, Data Aggregation;
c) BSC settlement costs, e.g. qualification to a HH Supplier or due to increased volumes;
d) Any processes to support the increased HH volumes for DUoS and TNUoS charging; and
e) Others. Please provide supporting rationale.

Respondent	Answer
SSE	a & d) Even assuming that there are no changes to the HH processes and that the full HH process change process is followed, we anticipate incurring considerable changes to our processes and resources in almost doubling our portfolio and the resultant increase in data handling volumes. We also expect considerable changes at very significant cost to our systems which includes SONET (our internal settlement database). An additional cost to cover any required changes to HH DUoS, Group Correction Factor and the removal of redundant functionality for PC 5-8. b) We would need to revisit/negotiate new contracts, with new agents and possible extended negotiations where customers have direct contracts with AMR providers. We anticipate this to result in very significant increase in agency charges. As Supplier we have no idea how this situation will affect our standing and what the impact will be. We have assumed that AMR MoP annual charge would increase in line with existing HH MoP charges whether there is an Agent change or not. Customers do not initially enter into a HH MoP contract with an Agent. c) We expect minimal costs and changes to BSC related charges/roles.
British Gas	A number of areas would be impacted by this proposal 1. Currently PC 5 – 8 customers are billed on register readings not HH consumption data. 2. Currently our agents who maintain and collect data from PC 5-8 AMR meters are not HH accredited 3. The propositions that we offer PC 5-8 customers do not reflect HH consumption data. If we want to use AMR to drive customer behaviour new propositions need to be developed for this category of customer.
E.ON	Unfortunately, we are unable to provide any detailed assessment of any specific costs or impacts at this time, since we haven't yet published our strategy in respect of this market segment. However, we believe that a change in the way BSC costs are calculated will impact us. There is, potentially, a big impact on the systems and processes for DUoS management but the scale of this will depend on the approach adopted by DNOs for levying these charges. If they replicate the HH model we will see a huge increase in MPAN numbers (c24,000 currently in PC 5-8) which would make the

Respondent	Answer
	current process unsustainable without system change. If DNOs adopt an aggregate model this too will result in system changes. There would also be a small impact to the way we handle TNUoS charges. One further consideration is the way Electralink currently charge for providing eDUoS is unsustainable if MPAN numbers are to increase to such a degree.
EDF Energy plc; EDF Energy Customers Plc; British Energy Direct Ltd; Seeboard Energy Limited	**Setup Costs** (a) Work is in progress which will increase our capability to settle PC5-8 sites Half-Hourly and is expected to be completed well before 6 April 2014. Additional set up costs over and above this existing project should be minimal, assuming a managed transfer using existing processes with no large step change. A significant increase in the number of sites settled Half-Hourly before this work is completed would increase storage requirements and have a detrimental effect on performance of a number of existing systems, including pricing, forecasting, DUoS settlement, customer billing and data provision. Workarounds to deal with this could incur significant additional costs, distracting from our project to improve overall capability. (b) AMR metering for PC5-8 is mandated, so there would be no additional meter cost. There may be additional setup cost for some sites where NHH data collection is not currently performed remotely and extra communications equipment might be needed to better support HH. We would expect a cost of £15-£20 per MPAN for initial change of measurement class and change of agent process, provided existing processes are used with no large step change. (c) The costs of settling BSC Trading Charges should not change. The change in costs of processing and validating meter data are included in the operational impact described at (a). As for question (a), there could be additional set-up costs for HH charged DUoS if it was required to transfer a significant number of PC5-8 sites in advance of our existing internal work to increase capacity. Otherwise the setup cost should be minimal.
Scottish Power	Our existing systems and processes are robust and stable enough to cope with additional HH MPANs. Where issues may arise is in the migration process. The potential for having to use our Change of Measurement Class process more regular would require investment in the current IT and Operational set-up. This would lead to internal costs for system development and staff resources. Additional IT costs would be incurred in the event that additional server capacity is required and the system license needs to be updated as a result. Detailed below are some of the costs associated with installation and ongoing support for the required metering arrangements • MAM activity, IE. Initial installation £1.165m • Increased MAP charges per annum £675k • Increased DA/DC/DR charges £450k per annum The costs detailed above are based on the contractual agreements being between

Respondent	Answer
	SP Energy Retail and Dataserve UK. If the agreements were between Dataserve and the end customer then the MAM and MAP charges can be removed.

Question 2:
Provide ongoing operational costs by MPAN or per portfolio for settling all your Profile Class 5-8 customers HH. Please provide supporting rationale.

Respondent	Answer
SSE	Our total Settlements manpower costs would significantly increase to meet operational requirements for: maintenance of HH standing data; HH SVA business validations; HH DUoS invoice processing; and, Supplier Agency Charges invoice processing. Based on current DUoS billing arrangements there would be a significant costs for DUoS Charges. However it is felt more likely that there will be a re-balancing of DUoS charges as MPANs move from NHH to HH as distributors will not be able to over-recover, which could result in total portfolio charges remaining similar to existing costs.
British Gas	The ongoing operational costs will depend on how we intend to bill PC 5-8 customers who are settled HH. We will need to ensure that HH data submitted to settlements reconciles with register readings used for billing. If the customer is not provided with the HH data and continues to be billed as if a HH customer we do not see a great impact on ongoing operational costs. However if the HH data is to be shared with the customer this could increase billing queries, call traffic, general enquiries. On our current HH portfolio we ask the customer to put a HH Meter Operator contract in place. However with our current PC 5-8 portfolio we procure the meter operator contract and include the cost in the tariff. We would need to review our agency model if all existing PC 5-8 customers were settled on a HH basis.
E.ON	Unfortunately we are unable to provide meaningful analysis of the operational costs on this approach.
EDF Energy plc; EDF Energy Customers Plc; British Energy Direct Ltd; Seeboard Energy Limited	**Ongoing Operational Costs** Ongoing agent costs are described under question 3. There would be an increase in effort required to undertake various processes associated with HH metered customers, roughly proportional to the number of customers. These include pricing for individual or classes of customers, forecasting, billing, and provision of data. Ongoing system and process improvements will offset some of these additional costs, but the net effect is currently uncertain. There would be an increase in DUoS charges in most distribution areas and profile classes, unless DNOs change their charging methodologies. For DUoS, we would anticipate additional processing charges of approximately £20k a year, offset with a very slight reduction in NHH process costs. Additional points: • Additional data storage • Customer DUoS pass through/pricing • Interaction with CDCM/EDCM developments. There would be a small change in BSCCo charges
Scottish Power	Detailed below is a comparison of the individual costs attributed to an MPAN on a NHH tariff and a HH tariff –

Respondent	Answer
	<u>Current LLF 400 (LV Medium</u> Non-Domestic PC5-8) **Fixed Charge** 22.24p/MPAN/day **Day or Unrestricted Unit Charge** 1.527p/kWh **Night Unit Charge** 0.123p/kWh **<u>LLF 500 LV HH Metered</u>** **Fixed Charge** 17.66p/MPAN/day **Capacity Charge** 2.17p/kVA/day **Red Unit Charge** 8.721p/kWh **Amber Unit Charge** 0.796p/kWh **Green Unit Charge** 0.104p/kWh **Excess Reactive Power Charge** 0.302p/kVArh These figures are approximation based on the current tariff structures and may not be reflective of the full portfolio. **<u>Appendix 1</u>** (Excel document) also includes a financial comparison of an average site settling HH or NHH 5-8. This example shows an approx. **£500 per annum** increase in costs for a site to be traded HH given the current structure. As well as the individual MPAN level costs there would be significant operational costs that would need to be included as a result of increased HH volumes. The end-to-end registration process would have to be reviewed as there are currently a number of issues with the process often leading to D0235 exceptions that could potentially increase if they are not resolved before migration.

Question 3:
What do you believe to the likely impact in % terms in agency costs (MO, DC, and DA) to serve an MPAN as HH against the existing costs to serve as NHH, taking into account economies of scale and lower performance requirements for Measurement Class 'E'? Please provide rationale.

Respondent	Answer
SSE	Supplier Agency costs (MOP, DC, DA etc) would increase significantly based on current arrangements. This does not take into account the differing requirements between Measurement Classes C & E for technical assurance. We are not certain how this will pan out at this high level stage, without detailed analysis.
E.ON	Using our experience of the introduction of AMR we are able to see a potential increase in costs of somewhere between 30%-40%, based on higher mop, DC and DA costs.
Smartest Energy	14% (revised from initial response). This is now based on cost differential from NHH AMR to HH AMR.
Scottish Power	The key agency costs that will impact the additional HH requirements are as shown in question 1 – • MAM activity, IE. Initial installation £1.165m • Increased MAP charges per annum £675k • Increased DA/DC/DR charges £450k per annum These costs are a result of the work required to install new technology on site and to ensure these new systems are suitably tested and validated before use. The additional per annum agency costs account for the cost-to-serve applied to HH data management in comparison to NHH data management. Given the potential move to a more focussed HH world these costs could be reduced following changes to agent processes, but the above Impact Assessment is based on current market conditions. Commercial contracts would need to either reviewed or in some cases introduced. If we were to increase the number of HH MPANs assigned to agents with existing agents we would have to look at the contracts in place and ensure we have formal arrangements in place along with Service Level Agreements. This could create a more competitive market for agents with the prices being offered to Suppliers reflective of the number of MPANs registered.

Question 4:
Taking into account any increased costs, is there a benefit for a Supplier's processes in HH settlement (and HH data) for a PC5-8 customer? For example, demand forecasting, reconciliation of purchases and sales, tariff product innovation and carbon benefits? Please provide details and rationale.

Respondent	Answer
SSE	From a Settlements viewpoint, the increase in metered volumes settled half-hourly provides more accurate settlement (monthly readings replaced with HH data), potentially reducing Imbalance Settlement Charges. Additionally, this would lead to more accurate DUoS Charges. It is unclear at this stage whether the benefits will outweigh the costs. However, we are concerned that from settlements perspective, that if and when all PC5-8's are moved to HH, there would be a considerable drop in our NHH settlements performance due to the fact that the majority of our 5-8's are performing above 97%. Performance expectation for PC1-4 are, therefore, likely to need further review. Yes – Demand Forecasting, Contract Sales, Customer Invoicing, CRC Management.
British Gas	Forecasting could be more accurate and therefore energy imbalance costs would be better managed. If suppliers are able to take advantage of the extra data & different data intensive forecasting techniques this could improve the accuracy of forecasting. This could be easier to achieve if a summary of suppliers consumption data were available (e.g. new industry data flows). Imbalance cash flows between settlements run will be less; this would give better planning of settlement cash flow. Although this is mainly affected by profile class 1 to 4 customers.
E.ON	There are potential benefits in moving settlement of PC5-8 customers to HH settlement; however there are significant challenges and costs in realising these benefits.
EDF Energy plc; EDF Energy Customers Plc; British Energy Direct Ltd; Seeboard Energy Limited	HH is more accurate and straightforward in principle to administer from a supplier operational perspective, and could assist with more accurate demand forecasting. This could also assist with more innovative value added benefits to customers such as load monitoring and control. In this respect there are advantages of data entering HH settlement. However, more detailed data for individual sites means increased volume of data and potential for more complexity in dealing with customer pricing, queries, billing and data provision. While these overheads may be manageable for sites within PC5-8, further consideration is required for PC1-4, and the Smart Metering project.
Smartest Energy	It is just about feasible that the energy costs of a flat-load customer would be lower than its profile and that these savings are over an above the increased DUoS and agent costs. The benefit is really for the customer.
Scottish Power	The primary and obvious benefit is the potential increase in data accuracy associated with switching to HH Settlement. This increased accuracy would provide a more detailed analysis for demand forecasting as we could structure our demand requirements on a much more detailed level.

Question 5:
What are the implications for customers if settled HH? Please provide details.

Respondent	Answer
SSE	More reflective prices, increased agency charges, additional DUoS charges, larger number of tariffs available and the option to bill site specific DUoS correctly.
British Gas	Currently our HH customers are given access to the HH data via a web portal and are able to validate the consumption data displayed on the bill. This has to be contrasted with existing NHH PC 5-8 customers who are billed on register readings only. We would need to decide whether we would continue to bill customers on the existing NHH platform but settle HH or change the customers to full HH billing to match HH settlement. Better availability of consumption data will enable customers to manage their own consumption usage. Customer will be able to directly see the impact of their own behaviours on energy usage, and adjust accordingly especially if incentives are offered via Time of Use tariffs. When technology allows, HH settlement should enable suppliers to offer demand management incentive to customers. HH settlement would allow demand side management and balancing, better management of micro generation.
E.ON	There are opportunities for suppliers to make more dynamic tariffs available to customers based on better consumption data; this would have to be balanced against the cost of creating and managing these products with customers. Since the supplier would need to be able to process and respond to more real-time data this may increase supplier overheads which may have knock on consequences for tariffs. However, the increased costs cannot mask the potential benefits of settling more MPANs using the HH model. Overall, settlement will be more accurate and any industry charge premised on the underlying data will be more accurate – DuoS, TNUoS, Imbalance, BSUoS. Demand forecasting is an obvious candidate for benefit but so is a company's cost projections, product development, customer billing, illegal extraction and risk analysis. Such a development would reduce exposure to GSP Correction in its current form and better define our understanding of where error exists in the market – Profile error, UMS, Loss factor error, theft, calculation error etc.
EDF Energy plc; EDF Energy Customers Plc; British Energy Direct Ltd; Seeboard Energy Limited	There may be an increase in the quality of bills, arising from availability of more detailed meter data. Potentially, customers could receive more accurate contract prices (but this is not necessarily the same as cheaper prices). Also, there may be a perceived benefit for energy management purposes.
Smartest Energy	Costs will go up because of the DUoS effect and agent charges. HH customers normally have a direct contract with the Meter Operator. If NHH customers went HH we would not anticipate that this tradition would continue and suppliers would start to pay for MOP. In other words, this would not be a change for customers. There would, however, be fewer visits from agents as meter reading would no longer be manual.
Scottish Power	As is currently the case with HH customers, contracts may need to be agreed with all migrated sites in line with the current arrangements. This element would have

Respondent	Answer
	to be clearly defined in the BSC and subsequent Terms and Conditions to ensure customers are made aware of the potential impacts on their supply point.

Question 6:

When do you think an Advanced Meter should be mandated to be settled HH:

a) Never (should be Supplier choice as now)

b) As soon as an Advanced Meter is installed

c) By 6 April 2014

d) Other. Please provide rationale.

Respondent	Answer
SSE	d) We believe that settling on HH should be available but not mandated at least for the foreseeable period. Customers and Suppliers should have the choice but this could be evaluated later when all the costs and risks are available and better understood.
British Gas	a) Never (should be Supplier choice as now) We remain of the opinion that the option to settle customers HH should remain with the Supplier. We do not believe HH settlement should be mandated on Suppliers. We are concerned at Elexon's approach to the cost benefit approach where all PC 5-8 are settled by 2014. We believe that Elexon needs to establish to break even point for HH settlement. Once this has been established Elexon could model various scenarios of take up i.e. high, med, low. From this Elexon would be able to draw conclusions as to whether HH settlement for PC 5-8 could: I. Be implemented but only if mandatory II. Be implemented with optionality III. Is not viable at all
E.ON	Though it is tempting to opt for the first option, a more considered view should suggest the third option. The market needs certainty and focus; too often the pace of change is driven by cost returns rather than what is morally and environmentally appropriate. As a well established business we should be able to project where the impact of such an undertaking will take us and what the impact will be. A drop dead date will focus minds, attention and resources to deliver systems and processes and give sufficient certainty for suppliers to then focus on the other challenges they face. It seems the industry has gone through similar debates on every major change in the last 10 years and on every occasions once the decision is made, everyone gets on with it.
EDF Energy plc; EDF Energy Customers Plc; British Energy Direct Ltd; Seeboard Energy Limited	(d) Other: Supplier choice as per existing arrangements, with AMR mandated to be settled HH only where 100kW maximum demand is exceeded more than 3x within a single year. Any other mandate will increase customer communication and data collection costs (MAP/MOP and DC).
Smartest Energy	By 6th April 2014. Going half hourly will increase costs but it is important not to disincentivise AMR installation. This is because it is in line with government policy to encourage customers to have the opportunity to flatten their load thereby reducing their energy costs. We think, therefore, that suppliers should install AMR over the next 4

Respondent	Answer
	years and keep them NHH until there is a very short transition phase during Q1 2014 to HH for the whole industry.
Scottish Power	Phased approach leading up to 6 April 2014. Potential targets set around new installations eg. X days after install of advanced meter it should be settling on HH data.

Question 7:
Although the CBA is focussed on Profile Classes 5-8, what are the implications or lessons that can be applied to Profile Classes 1-4? Please provide details.

Respondent	Answer
SSE	Sheer numbers of MPANs within PC1-4 if followed under current HH processes, would result in massive increases in data being exchanged and stored which are potentially beyond current systems. Some form of data aggregation will need to be considered. It would provide a choice to customers with sites in both PC1-4 market and HH market and may wish to trade all HH.
British Gas	The data storage and manipulation required to settle PC 1-4 customers HH would be massive. However if demand side management is to deliver the carbon reductions anticipated a solution needs to be found that enables domestic customers to realise the cost benefits from reducing consumption at peak times. The current requirement for COP 10 metering for HH settlement acts as a barrier to domestic customers. We would encourage Elexon to carry out a review of the Codes to establish an appropriate regime for domestic customers who want to be settled HH. We understand that HH data collection is currently within the scope of the DCC. When the DCC is implemented we anticipate that the costs of HH data collection will reduce and it will be much more viable to settle PC 1-4 customers on a HH basis.
E.ON	Until there is more understood about the impacts moving PC5-8 to HH settlement it is difficult to provide an appropriate response, however there is clearly a GSP GCF implication for PCs 1-4.
EDF Energy plc; EDF Energy Customers Plc; British Energy Direct Ltd; Seeboard Energy Limited	We can only consider lessons learnt for PCs 1-4 once full experience of decisions relating to PCs 5-8 are implemented, analysed and understood.
Smartest Energy	The cost differential will be higher because PCs 1-4 are read quarterly.
Scottish Power	With HH sites being included in Group Correction Factor calculations for Profile Classes 1-4 will be affected as the volume share across the market changes. This issue should be reviewed as part of the 5-8 migration rather than as a separate piece of work so we can understand how GCF will be affected across the entire market. We can use our experiences of customer interaction during the 5-8 migration to improve on how we communicate and cater to the customer's needs during any proposed 1-4 migration. Customers will have concerns over any compulsory changes they have to make during the 5-8 migration so we can use this experience to better manage the customer's expectations during any proposed 1-4 migration.

Question 8:
Do you have any other comments you wish to add?

Respondent	Answer
British Gas	We currently install AMR meters in difficult to read sites in order to improve our NHH settlement performance. If any form of mandatory HH settlement was introduce the performance assurance framework would need to be reviewed to ensure Suppliers were not unfairly penalised.
E.ON	Implicitly, the HH Settlement approach is a fairer since there is no socialising of costs
Scottish Power	There are a number of issues that need to be addressed with regard to DUoS. These are included within the Supplier section as they originated from the Supply business but touch on several areas within the Distribution business – • Will these customers be settled using the D0036 flow (and excluded from the D0030) along with all other HH customers? And would it be worthwhile considering the option to retain the D0030 billing for these customers but use actual instead of estimated data? • Will the DNOs be expected to revert back to monthly demand billing in line with HH customer billing? • Will Distributors be instructed to bill DUoS in a specific way (eg. Include a demand element) or will the process flexible in allowing them to do their own thing? • DUoS charges are currently capped so there would need to be a reduction in the overall DUoS charges associated with HH if this population increases significantly. Also, there are a number of migrations issues that need to be explored in more detail as these processes aren't used a great deal at the moment and will need to be fully tested and trialled before a full migration of 5-8 customers can begin. The CoMC process will require a full end-to-end review prior to the migration taking place to ensure all BSC parties are aware of their obligations and suitable mechanisms are put in place to cope with the increased volume of NHH to HH changes. This could be facilitated through an Elexon chaired working group looking at the CoMC process in line with the AMR and Smart meter developments.

Questions for Supplier Agents and Meter Suppliers

Question 9:

What issues do you believe there will be to service an extra 164,000 customers as HH by all service providers by April 2014? Please provide details.

Respondent	Answer
E.ON Energy UK Services	We do not believe that there will be any issues in our role as MOA as all meters being installed for profile class 5-8 customers comply with COP10 or COP5 and as such will support HH Settlement. Once the meter has been installed the interrogation of the meter in the HH Market is typically carried out by the HHDC and as such additional data volumes will have little impact on our activities as a MOA & NHHDC-DA.
TMA	The transfer of the 164000 customers from NHH to HH settlement is likely to be gradual and the MPAN appointments will also be spread amongst the HHDC/HHDA and MOP agents so no major issues are associated with the servicing of an extra 164,000 customers as HH by April 2014. The staffing levels can be adapted and hardware acquired. It should be noted that a bulk change of COMC carries more risk of fall out than a COMC when advance metering is installed. It would be more work intensive as it is outside of the normal day to day business process. If a Supplier favoured the bulk change approach, a close working relationship must be in place with their agents to ensure that the agents can staff up and have adequate hardware ahead of the bulk change.
SSE	Minimal impact to work load and skill sets. And a review of operational processes.
AMO	There will be extra time/effort involved in supporting these customers. Issues/faults/problems with the metering systems will be identified within days, rather than months/years – this will advance the workload of fixing problems, but provide a benefit in settlement accuracy as the problem will be in existence for a shorter time. Some of these issues will be identified & resolved as part of the advanced meter contract as part of the advance meter service, but the timescales of resolution may be longer than the settlement timescales. There may be a marginal extra cost for resolving issues faster.
Siemens Meter Services	From a commercial perspective, many customers are not contracted with the suppliers for these services. As HH settlement is more expensive the customer would have to pay for an increased DC service, which would require the re-negotiation of a significant number of contracts.
G4S Utility Services	We understand that it is the intention that all customers in Profile classes 5-8 should have Smart Metering by 2014. G4S Utility Services does not currently operate in the HH market. Assuming that HH settlement for profile class 5-8 customers operated 'as is' we would have to procure, adapt or build systems and become an accredited HHDC and HHDA. If it were decided to amend the existing NHH settlements model to allow HH settlements for profile classes 5-8 we would have to undertake a detailed cost analysis to determine the additional costs of entry. Since not all of these customers have HH capable Smart Meters installed now, the

Respondent	Answer
	potential fall-out has to be taken into account in determining the performance standards for the percentage of MPANs settling on an AA. Factors to consider include: - there could be places where you cannot obtain a signal, difficulties in gaining access to exchange the meter, or the consumer refuses to have a Smart Meter installed
IMServ	As an agent with a 250,000 MPAN accreditation limit we don't foresee any problems with adding another 164,000 customers into the market space. Having dealt with high volumes in the past we are confident that our systems and processes could scale up to meet the need. In fact we have already made the investment in systems and communications infrastructure to run at even larger volumes than this. There would however need to be robust processes in place for the systematic transfer of these customers from NHH to HH and ensure that the integrity and quality of existing HH arrangements not be comprised by the ramp-up in volumes.
Stark Software International	No major issues anticipated. Existing HHDC/DA systems are scalable. More customers could benefit from value added data services. Settlement will benefit from a higher proportion of Actual data at SF and later.

Question 10:

Can you identify any economies of scale or any system/ data transfer issues associated with an extra 164,000 HH metering systems? Please provide details.

Respondent	Answer
E.ON Energy UK Services	We can identify no economies of scale as the meter volumes will not be impacted.
TMA	There will be an economy of scales regarding communication costs and potentially on hardware. The PC5 to 8 customers will be settled under Measurement Class E, so the HHDC dialling costs will be lower than for Measurement Class C customers, as they can be dialled less frequently. More details from Electralink would be required to check that the RUG set up could handle the increase in DTN traffic. A D0036/D0275 for one MPAN and one day of HH data is 9 times bigger than a D0010 for a similar metering system. It will significantly increase the cost of data transfer for HH agents and Suppliers
SSE	None
AMO	Including the existing NHH advanced meters into HH trading should be phased over months, if not years, to allow for sufficient resource to be available to steadily work through failures of the HHDC being able to interrogate the meter. Some advanced meters may require a change of DC to from a NHHDC (who is able to collect/process NHH readings) to one that has the full functionality as an HHDC. All stakeholders MO/HHDC/Suppliers/Distributors/customers will assimilate a progressive ramping up of HH trading over a reasonable period rather than a 'big bang' changes.
Siemens Meter Services	Data transfer issues: 1) Based on our current shares of NHH and HH markets, we believe that the move to HH settlement could see a 75% increase in requirements for site visits to obtain hand held reads, due to comms faults.

Respondent	Answer
	However, this would bring an overall benefit to data quality as comms faults on these meters would be subject to BSC obligations that are in place for the HH market. There are no similar obligations in place for the NHH market, therefore at present these faults may not be addressed as efficiently. 2) There will be an increased volume of data sent over the DTN gateway, as the volumes for HH are much higher than NHH.
G4S Utility Services	The converse would apply – unless we entered the HH market we would experience a negative impact from losing our share of these customers
IMServ	Whilst there are already economies of scale built into existing volumes there will be some further benefit to be realised with a significant increase in volume. For example, in such areas such as communications costs, manual processing costs, and general overheads. We believe that the current data transfer arrangements are adequate to handle these volumes so long as the process is managed systematically.
Stark Software International	Some savings will result from the sharing of fixed cost overheads.

Question 11:

Although the CBA is focussed on Profile Classes 5-8, what are implications or lessons that can be applied to Profile Classes 1-4?

Respondent	Answer
E.ON Energy UK Services	This is a more complex area as a meter operator I can foresee little impact on our activities resulting from the settlement process associated with the meter. However it may have significant impact on DC activities.
TMA	PC 1 to 4 could be settled HH under a new Measurement Class. From this CBA's assumptions, Measurement Class E performance would be modified to 99% of actual data by R1. A new Measurement Class using the current Measurement Class E performance target of 99% of actual data by RF would ensure that NHH sites for PC1 to 4 could be dialled data at a frequency suitable to meet the performance target without unnecessary communication costs.
SSE	Without a detailed solution, we are unable to comment.
AMO	There are already PC3-4 and to a small extent "domestic" customers (PC1-2) included in the advanced meter roll-out. Many of the commercial chains have not differentiated between PC3-8 when requiring advanced meters. Other customers like health and social care may be assigned PC1-2 as the usage is predominantly 'domestic'. Meter Operators do not know the PC of the customer. So if the customer or supplier request the installation of an advanced meter at an MPAN, then one will be installed. Equally once an advanced meter is installed (where MD functionality is generally standard) then it should be defined as PC4-8 in accordance with BSCP516.
G4S Utility Services	We would not wish to include Profile Class 1-4 customers within the CBA at this time. There are significant uncertainties about the role of the DataCommsCompany (DCC) and the scope of its activities, and until these are resolved changing the arrangements would be inappropriate.
IMServ	We do not foresee any technical obstacles in expanding this to Profile Classes 1-4

Respondent	Answer
	however the commercial rationale for doing so is less clear. Perhaps the infrastructure planned for the Smart Meter rollout out provide the opportunity for certain multi-site customer groups, such as local authorities or organisations with large housing portfolios, to benefit from settlement on a HH basis.
Stark Software International	Again, we do not foresee any major problems scaling up the HHDC/DA process should the market be extended to PC 3-4. Extending the market to PC 1-2 is a major step change. The challenge is scalability of existing systems and processes. If the proposed WAN element of the residential smart metering system is designed with this prospect in mind, then we do not foresee the bottleneck being with the HHDC/DA or the associated data collection process.

Question 12:
Do you have any other comments you wish to add?

Respondent	Answer
TMA	The settlement of PC5 to 8 as HH as well as the transfer of the rest of the NHH customers to HH is the only way to get full benefits from the technical advances of smart and advanced metering. It would allow for a shortened settlement timetable, potentially to R2 and most certainly to R3. Supplier billing can evolve using period data to have tariffs that encourage customers to spread peak consumption and change habits. The HH agent services costs have significantly lowered since 1998 thanks to a fully competitive market, this needs to continue to be allowed to drive costs down and performance up.
AMO	DUoS charges should be equitable across NHH & HH for these customer groups. How they trade in settlement is irrelevant to their impact/demand/cost for the use of the distribution system. The problem resides in the "logic" of the CDCM model rather than any real cost drivers.
G4S Utility Services	Whilst G4S is fully supportive of the need to undertake a review of the arrangements around settlements for Profile Class 5-8 customers we do not believe this is the right time to enforce changes on the industry. This seems premature considering the wider implications for settlements that inevitably need to be considered for the 29 million customers in Profile Class 1-4. We feel the right time to undertake any changes will be when the specifications, road map and timescales for rolling out Smart Metering to the mass market are known. In the meantime, as a compromise position we would suggest that Individual suppliers and their agents may chose to move across to settling profile classes 5-8 on a HH basis, but the process should be elective and not mandated.

Questions for Distribution Businesses

Question 13:

What are the additional costs and impacts if all Profile Class 5-8 customers are settled HH by 6 April 2014? Please break down your costs (one-off and ongoing operational), timescales and impacts for:

a) Internal process and systems;
b) Supplier Meter Registration Service (incl. level of transactions, constraints);
c) DUoS Charging; and
d) Others. Please provide rationale.

Respondent	Answer
Electricity North West Limited	Our billing system already caters for both HH measurement classes and up to recently catered for Profile Class PC) 5-8 customers being billed on a site specific basis. However, when considering costs (both one off and ongoing) it would be helpful to understand the following areas: PC 5-8 sites currently indicate the need for MD metering. We need to ensure that there is some clarification in this area once such profiling is removed so we do not see sites flipping to PC 3 and 4. The connection agreement usually identifies such a need. The proposed National Terms of Connection under DCUSA looks at more specific terms of connection including import/export capacity for non domestic premises when Current Transformer metering is required. It would make sense to define the boundary between PC 3-4 and Half-Hourly (HH) sites as being at such a demarcation of connected equipment. Bulk migration would be difficult for the industry to manage due to volumes of data having to be changed and data sent across the network at the same time. We have volume constraints of 15,000 transactions per day Monday through to Thursday, and 30,000 on a Friday. We would also need to understand the change of agent process and whether there is a need to provide Meter Technical details if a meter with the functionality already contained within it just changes from NHH to HH i.e. no need to change the meter. Liaising with Supplier and their Agents to discuss Change of Agent process, volumes and timescales, and develop plan. Whilst we see these as areas of concern in understanding the capital cost of such a change we believe that overall the on-going service would save money.
Western Power Distribution	a) The existing processes do not need to change to accommodate the transfer of profile 5-8 MPANs to elective HH trading. Similarly, no system changes are required, although additional server & storage capacity may be required to cope with the increased data storage and processing needed for increased numbers of HH MPANs. There is potential for a one-off additional resource requirement to deal with flow issues if the migration happens in a "big bang". If the transfers are phased over the period leading up to the deadline then this can probably be accommodated with existing resources. Excluding SMRS and DUoS systems we estimate a one-off implementation cost

	of around £30,000 and ongoing additional costs of £10,000 - £20,000 per year. b) Provided this is implemented using a "minimum change" approach, no changes to MPRS system will be required. Suppliers would simply need to use existing flows to change the registration data from NHH to HH. c) Although no system or process changes are required, the additional volume of HH MPANs will have an impact. This will include: • Initial set up of HH billing records • Increased HH flow management. (dealing with errors, exceptions etc) • Increased tariff management. • Reporting. • Server Capacity. We have been unable to fully test the scenario but estimate that DUoS systems will require a one-off implementation cost of around £50,000 and ongoing additional costs of £10,000 - £20,000 per year. d) If adopted these proposals could trigger a review of pricing under CDCM, or changes to the LAF calculation methodology as there will be more customers in the HH market with much different load characteristics to the existing HH market. However, In the absence of any firm proposals in this area we cannot estimate a cost for this.
The Electricity Network Company Limited	Breakdown of costs as follows: a) £50,000 system changes for the electricity billing system b) £0 impact – assuming all data perfect and migration occurs with no issues c) See point a) Actual charging is driven by regulation The billing system has been set up to validate certain data before raising invoices. Rules will need to be adjusted to ensure correct billing treatment. Given HH meter points already exist we have prudently assumed a number of consultancy days and internal project management costs based on prior experience. This assumes a perfect migration of data and no additional business processes as a result. This assumes all migrate at the same half hourly reference point to ensure easy reconciliation and that all have closing meter reads and that no further reconciliation runs can adjust previous periods for those customers.
SSE	a) Data storage and processing associated with existing half hourly metered customer base is already onerous. Expanding the customer base impact costs significantly without offering any benefits. b) None c) Without changes to DUoS tariffs there is likely to be an under-recovery of DUoS income (the level of which will be determined by the numbers of PC5-8 changing) until tariffs are allowed to reflect this change. However, it is unlikely that DUoS tariffs will not be allowed to reflect known forthcoming changes.
EDF Energy Networks	a. Please see below b. No business process or software changes would be required to migrate PC 5-8 MPANs to Measurement Class E. Based on the current number of PC 5-8 MPANs, SMRS would be able to support a steady migration or a bulk change of Measurement Class in 2014. c. Our HH DUoS billing system would be able to accommodate the additional accounts to allow site specific billing of PC 5-8 MPANs (once migrated to MC E).

	However to support site specific DUoS billing, business process and system changes would be required in the areas of Connection Agreements, availability management and account payment. To support the increased HH MPAN volumes additional staff would need to recruited and trained. d. Additional work will be required to confirm the impact of increased HH data volumes on other LDSO systems. It is believed that Increased volumes of EDI (electronic billing data) should not be an issue for Electralink.
CE Electric UK	Question 1a): Our **internal** processes will be significantly affected in terms of managing registration data against this volume of customers within our half-hourly billing system along with the time taken for the billing systems to produce invoices for this greater volume of customers. We also need to consider performance issues with the systems involved (internally and externally i.e. DTN) due to a high volume of customers being settled half hourly; all industry parties will be impacted here. Costs are not easily identified as we would need to asses hardware and software current capabilities, the changes required and the subsequent costs for these changes. From a **SMRS** aspect the initial set up of the measurement class change by suppliers would impact us and would need to be managed via schedules as we do with bulk change of agents but we do not see any long term impact in SMRS. From a **DUoS billing** aspect any new tariffs for these customers would need setting up within our half hourly billing systems. In terms of DUoS charging we see believe this would be more accurate as these customers would be settled accurately like the half hourly market.
Central Networks	The impact of moving around 30k PC5-8 customers to HH will be relatively small. However, the impact of moving the remaining, nearly 5 million, PC1-4 customers would be very significant.

Question 14:

What benefits would you consider there to be from having HH data for these 164,000 customers? Please provide details.

Respondent	Answer
Electricity North West Limited	We have considerable concerns with the data we receive from the settlement system in the NHH market where there are significant swing in apparent losses on the network. We are also aware that the PC5-8 Group is one of the biggest area of focus for the work on large and erroneous EACs. Receiving HH data will assist in better reporting of losses which will reduce the current volatility due to settlement data and the corresponding effect on customer's charge. Receiving HH data from a significant number of large customers will undoubtedly assist us in developing our networks to cope with the challenges of the low carbon economy. It will also result in more accurate DUoS billing, an easier Change of supplier process and an improvement in data quality.
Western Power Distribution	The data would be more accurate for pricing, LAFs, less data reconciliation difficulties (e.g. R1, R2 etc.) and revenue estimation.

The Electricity Network Company Limited	One benefit from having HH data for these customers would be more accurate data for system planning and system management.
SSE	Minimal benefits. Ability to use accurate profile for DUoS tariff.
EDF Energy Networks	Benefits for having HH data • Accurate settlement/Duos billing – no estimates • Data Management would be easier as sites/MPANs would not be concealed in settlement classes, therefore consumption anomalies can be pinpointed • Opportunities for reactive/availability charging • Technical use of the data
CE Electric UK	As meter readings are taken more frequently DUoS charges billed to suppliers reflect the customers true consumption more accurately. Any HH data anomalies can be more easily identified to an individual customer and resolved sooner by the data collector for the next available billing of DUoS charges to suppliers.
Central Networks	PC5-8 contains our largest NHH metered customers, with typical demands between 50 and 100 kW. It is likely however that some have demands well above this level, but have not been identified for HH metering. The availability of accurate and timely HH data for these customers will facilitate better network analysis, leading to more efficient use of network assets and, ultimately, less need to reinforce. It will also facilitate identification of those customers in this group with demand greater than 100kW

Question 15:
What changes do you believe are necessary to the Common DUoS Charging methodology to address the perceived barriers in HH DUoS charges for customers currently in Profile Classes 5-8 with Advanced Meters (see DUoS charges analysis in Appendix A section 6.1 of the consultation document)? Please give rationale and any cost estimates.

Respondent	Answer
Electricity North West Limited	The comparisons that are being made with the current HH and NHH charges are not valid. These groups of customers have different characteristics resulting in different charges. If we derive a HH tariff from the current NHH tariff on average there will be no impact on these customers from a DUoS perspective. Some customers will pay more and others will pay less as the HH charges will be more cost reflective.
Western Power Distribution	If profiles 5-8 are removed then no discrepancy between profile 5-8 & HH can exist. There will therefore be no need to change the charging methodology.
The Electricity Network Company Limited	A key thing which some parties may object to is paying capacity charge and a fixed charge. It might be that the fixed charges are reduced and those costs recovered through the capacity charge.
SSE	Would need to introduce new HH metered tariff for these customers who adopt HH metering to ensure the correct costs are allocated to this class of customer.
EDF Energy	We do not believe that the costs of DUoS for HH vs. NHH represent a true

Networks	'barrier' to entry as described. DUoS is regulated against allowed revenue, therefore, any additional revenues received by a DNO as a result of differences between HH & NHH charging would be returned to customers. The CDCM model calculates tariffs for groups of customers in the bases of averages. Assuming a normal distribution this means that a supplier with a completely 'average' portfolio, would overpay for 50% of customers and underpay for 50% customers and so be neutral overall. Because it is possible for suppliers to migrate customers back a forth between HH & NHH trading it would be possible for them to arbitrage their portfolio between the two tariffs. This must be considered when conducting any analysis of the relative costs of HH & NHH DUoS. If all of the customers that benefit most from the structures of HH DUoS have already migrated to half hourly trading by suppliers then the remainder traded non-half hourly will apparently be better staying on the NHH tariffs. This is particularly significant because of the lag in CDCM modelling. Put simplistically the 2010/11 tariffs were modelled in 2009/10 using 2008/09 customer data! The Common Distribution Charging Methodology (CDCM) currently has two groups of tariffs covering the market segment under discussion: • LV Medium Non-Domestic which applies to Measurement Class A, Profile Class 5-8 customers. • LV Half Hourly which applies to Measurement Class E customers and Measurement Class C customers connected at low voltage. Notwithstanding the issues outlined above it is our opinion that the CDCM should be modified to provide for at least three tariffs groups in the near future. These groups would be: • LV Medium Non-Domestic applicable to Measurement Class A, Profile Class 5-8 customers • LV Half Hourly (Over 100kW) applicable to Measurement Class C customers connected at low voltage • LV Half Hourly (Sub-100kW) applicable to Measurement Calls E customers. Once all of the Profile Class 5-8 customers had migrated to half hourly then the LV Medium Non-Domestic could be withdrawn. Accompanying this would need rigorous enforcement of the application of measurement classes to MPANs by suppliers to ensure that suppliers were not bale to arbitrage the costs between the two different half hourly tariffs.
CE Electric UK	As part of the development of the new CDCM models for HV and LV MPANs, the difference between the charging structures for NHH and HH were debated at length. It was proposed that a de-linking approach between distribution charges and settlements should be progressed. The effect of this would be to have more common tariff structures between HH and NHH. The differences currently relate to capacity and reactive charges and the three rate time bands in the HH tariffs. These charges are more cost reflective and relevant to actual consumption patterns when compared to NHH profiled tariffs. Moving PC 5-8 to HH billing would increase the number of site specific bills and the associated administration costs. To pursue a de-linking option could be significantly more costly in terms of potential billing system changes this would have to be progressed through a DCUSA change proposal.
Central Networks	While we would be able to accommodate billing of these customers suppliers as HH, with site-specific invoices and more complex tariffs, the availability of HH data does not necessarily mean that they should be billed in this way, or that

	they should pay on the basis of the current HH tariffs. It may be in the interests of the DNOs and wider industry to continue to bill these on the same type of tariffs that the suppliers currently pay, but on a site-specific basis, or to continue to do this in the aggregated 'supercustomer' way that we do now. This later option would necessitate aggregation of HH metering data in much the same way as profiled data is currently aggregated. The associated changes to the DUoS methodology would be relatively modest in either case.

Question 16:
How would you ensure that you do not over recover HH DUoS charges in light of the increased HH Metering Systems? Please provide details.

Respondent	Answer
Electricity North West Limited	We do not understand the question. There will be no over-recovery; the charges will be cost reflective for this type of user. If this is related to more accurate and timely receipt of data then this should allow a closer match of allowed and actual revenues.
Western Power Distribution	CDCM follows a set methodology; over recovery is not an option as it targets allowed income.
The Electricity Network Company Limited	As an IDNO we are subject to RPC arrangements and, therefore, to DNO tariffs. No over recovery position could exist.
SSE	We do not understand why an over recovery should arise because of this change, see 15.
EDF Energy Networks	As noted above DUoS is regulated against an allowed revenue, therefore, any additional revenues received by a DNO as a result of differences between HH & NHH charging would be returned to customers.
CE Electric UK	Allowed revenue is not disaggregated between NHH and HH, therefore when setting charges for the relevant year, provided we have advance notice of any potential migration we can take account of this in our forecasts that feed into the charging models.
Central Networks	Accurate forecasting is the key to managing our recovery position. Recovery is measured across all tariffs, and significant over or under recovery would only occur if large numbers of customers were moved to significantly cheaper of dearer tariffs without this having been forecast. The PC5-8 customer group is insufficiently large and has too little demand to cause significant recovery issues.

Question 17:
Although the CBA is focussed on Profile Classes 5-8, what are implications or lessons that can be applied to Profile Classes 1-4? Please provide details.

Respondent	Answer

Electricity North West Limited	We need to consider that the use of HH data will allow distributors to provide cost signals to the customer. Such signals need a solution that allows them to react to such signals and control their usage thereby influencing their charges. Profiled data does not allow for this even if the customer had the ability to undertake such an initiative. We therefore need to consider a solution which may be the introduction of a new measurement class to cater for PC 1-4 smart meters. Such a measurement class would still need to be billed via the Supercustomer approach. The industry would have great difficulty in suddenly have to send and process individual customer DUoS bills (in our instance 3.4m supplier bills). By allowing the introduction of a new measurement class and the billing by the SCDUoS approach we can have a phased introduction of smart meter tariffs as they migrate from one Measurement Class to another. The SCDUoS bill would be based on the HH period the SPX data of the D0030 for those on smart meters. The cost to introduce new LLFs to support this will be minimal.
Western Power Distribution	Extending HH trading to profile 1 to 4 is a real game changer unless a new methodology for DUoS charging is developed. If Suppliers require one invoice per MPAN, as is currently the case with HH DUoS, then we will essentially have to develop something similar to a Supplier's billing system. The impact could be huge and the costs in the £miillions but in the absence of firm proposals we are unable to provide a proper analysis of the impact or costs Perhaps the best way is to do this for profile class 5 to 8 and then learn lessons from that before applying to the much larger group pc 1 to 4.
The Electricity Network Company Limited	There is potential for the roll-out of Profile Classes 1-4 also. If removing Profile Classes 5-8 means that settlement is much smaller, is there a case for making all Classes HH? For managing data, a wholesale migration would help with reconciliation runs and ensuring no duplication of MPANS across settlement types.
SSE	HH metering for PC 1-4, especially if adopted widely, would result in an explosion in costs associated with data processing and storage.
EDF Energy Networks	We consider that it would be necessary and appropriate to develop time of use tariffs for profile class 1-4 customers in a similar manner to those proposed above for PC5-8 customers.
CE Electric UK	Our comments above should be considered here too.
Central Networks	The idea of using aggregated HH data, outlined in response to question 3 above would be very appropriate, if not essential if PC1-4 customers moved to HH settlement. The alternative of billing suppliers for all such customers on our current site-specific HH methodology would create massive logistical issues (5 million individual bills per month from CN), and would bring minimal benefits.

Question 18:

Do you have any other comments you wish to add?

Respondent	Answer
Electricity North West Limited	Measurement Class issue – it does seem sensible to have specific Measurement Classes for above and below 100kW, however we need to consider the flippers (between each MC) and the impact on the BSCPs to see if meter technical details need to be sent where no meter is changed.
The Electricity Network	We believe that the Group Correction Factor should apply to both HH and NHH.

Company Limited	
EDF Energy Networks	That the increased volumes of HH DUoS accounts arising from this change should be accompanied by mandatory e-billing via D2026 for all suppliers. It is thought that the marginal cost of receiving e-bills as a flow cannot be a barrier to small suppliers who already have to bear the costs of processing all other flows.
Central Networks	We very much support the introduction of smart metering, and hope that ways can be found to maximise the benefits, without overburdening the industry with costs. We are keen to have access to the relevant HH data at individual customer level, but do not believe that availability of HH data means DNOs have to apply HH tariffs.

Questions for National Grid

Question 19:

What are the costs and impacts if all Profile Class 5-8 customers are settled HH by 6 April 2014? Please break down your costs (one off and ongoing operational), timescales and impacts for:

a) Internal process and systems;
b) Changes to TNUoS charges; and
c) Others. Please provide rationale.

Respondent	Answer
National Grid	A) The cost and impact of settling profile classes 5-8 as HH customers would have a low cost and impact to National Grid internal processes and systems. TNUoS demand charges are calculated on a group net basis, therefore the change would be largely invisible to National Grid processes and systems. B) The proposal impacts the cost reflectivity of TNUoS charges. TNUoS charges are calculated each financial year using forecast demand volumes. Therefore as the demand base over which TNUoS is spread changes (i.e. Users migrated from NHH to HH), it impacts TNUoS charges and would need to be catered for when TNUoS charge were set. The process of charge setting happens annually between October and December in the preceding year. Therefore National Grid would need Elexon to supply forecast volumes for the impacted customers by gsp group and date/time over the whole financial year by October 2013 if the change was to be implemented for April 2014. This would allow the proposal to be quantified and allowed for within the TNUoS charges. The likely impact on TNUoS charges would be to increase NHH charges by around 10p, although the impact would vary by zone. HH and generation charges would be unaffected by the change. It should be recognised that Project TransmiT is a current Ofgem review of the TNUoS charging methodology. Therefore the TNUoS impact of this change may differ dependent on the outcome of the review. C) No other costs or impacts have been identified.

Question 20:

Are there any changes that you believe are necessary to the TNUoS Charging methodology to address the increased 164,000 Metering Systems in 2014? Please provide details.

Respondent	Answer
National Grid	None, the TNUoS charging methodology will cater for the increase in the HH demand base without change. The impact will be to increase cost reflectivity of TNUoS charging.

Question 21:
What benefits would you consider there to be from having HH data for these 164,000 customers? Please provide details.

Respondent	Answer
National Grid	Assuming that the signal provided by HH TNUoS charges is passed through to end consumers in an effective manner, the move to smart metering should make consumers more informed about their energy usage and the resultant impact on the system (reflected through price signals). Put another way, the benefit of introducing HH metering for these consumers will be increased cost reflectivity of charges, which will allow consumers to better react to the cost signals if they choose.

Question 22:
Although the CBA is focussed on Profile Classes 5-8, what are implications or lessons that can be applied to Profile Classes 1-4? Please provide details.

Respondent	Answer
National Grid	-

Question 23:
Do you have any other comments you wish to add?

Respondent	Answer
National Grid	None

Questions for MRASCo

Question 24:

What are the costs and impacts if all Profile Class 5-8 customers are settled HH by 6 April 2014 on the registration processes governed by the MRA? Please break down your costs (one off and ongoing operational), timescales and impacts for:

a) Internal process and systems;
b) Changes to the MRA; and
c) Others. Please provide rationale.

Respondent	Answer
Gemserv	a) **Internal Processes and Systems** Given that the definition of HH and NHH Metering Points under the MRA are as follows: • HH="…provides measurement of the supply of electricity on a half-hourly basis"; • NHH= "…provides measurement of the supply of electricity other than on a half hourly basis". The MRA does not specify how a Metering Point should be treated, only a differentiation where measurement is provided half hourly or otherwise. MPAS Validation will require HH agents to be registered to any MPAN with a HH measurement class (i.e. C or E), since this comprises an element of the BSC Validation Requirements (see Schedule 9 of the MRA). In the event that any Profile Class 05-08 MPANs were to be settled as HH MPANs, they would necessarily have to undergo a Change of Measurement Class (CoMC) event within MPAS. This would require the Supplier to update MPAN details in order to achieve a change from NHH to HH settlement. This could be expected to then occasion an updated from the DB to revise the LLFC to reflect the HH status of the MPAN. From an MRA perspective, the costs are unaffected, in that charges are based on Registered MPANs, regardless of whether they are settled HH or NHH. b) **Changes to the MRA** As noted above, under the current MRA provisions, it would be expected that the movement of Profile Class 05-08 meter points to HH settlement would be achieved by a CoMC. This process is not set out within the MRA, but rather resides in the Working Practices Product Set (WPPS), as there are some elements that depend on Supplier preference. However, the WPPS does set out the requirements for completion of a CoMC if not a specific sequence of transactions and checkpoints, on the basis that it was fit for use in ad hoc cases. In the event that MPANs currently within Profile Class 05-08 were to routinely undergo a CoMC, then consideration of a deterministic roadmap may provide a more robust solution for the market as whole. If this were to be developed under the MRA, it could reasonably be expected to take approximately 6-9 months for this to be developed through the change process. c) **Others** There are no other costs and impacts currently expected.

Question 25:
Although the CBA is focussed on Profile Classes 5-8, what are implications or lessons that can be applied to Profile Classes 1-4? Please provide details.

Respondent	Answer
Gemserv	There is no impact on the MRA beyond those noted above.

Question 26:
Do you have any other comments you wish to add?

Respondent	Answer
Gemserv	No further comments

Anything else:

Respondent	Answer
EMEA	Introduction eMeter is a smart meter software company that provides a smart network application platform (SNAP) to integrate smart meters and smart grid communications networks and devices with utility IT systems. Being vendor-neutral toward all meter, hardware, and legacy utility software systems (e.g. CIS and Billing), eMeter has a unique, unbiased and global perspective on smart meter IT issues. In addition, eMeter's principals have participated in the definition and development of the smart grid for nearly three decades, including leading advanced metering working groups in regulatory proceedings, participating in a wide variety of industry standards groups, founding the Demand Response and Smart Grid Coalition (DRSG), managing consumer-oriented Smart Grid pilots (e.g. PowerCentsDC and the Ontario Smart Price Pilot) that have been recognized for demonstrating best practices, and testifying before the U.S. Congress and various state legislatures on these issues. eMeter has also been active in Europe, participating in EU and ERGEG activities and consultations and having been an active participant in Ofgem's previous and current smart metering consultations. Finally, eMeter's software is in use in Smart Grid projects around the world, including several in Europe. Comments While the paper focuses on customers in Profile 5-8[1] , eMeter would like to highlight the relevant benefits of smart meters for the Balancing Settlement Code (for all customers) • greater energy efficiency through consumer information feedback, • peak reduction through dynamic pricing and automated control, • better renewable integration through sensing and automated control, • support for electric vehicles through dynamic pricing and automated sensing and controls, and • greater support of intermittent renewable distributed generation through automated sensing and controls. Since Ofgem[2] is pushing the design of regulations aiming to accelerate the general roll out of smart meters, which should be consumer focused and enable them to respond to and benefit from avoiding high peak prices, we believe it is important that Elexon starts identifying transition issues while engaging different stakeholders to help to design the future of smart settlement. Some of the issues eMeter has identified to be considered when calculating the cost and benefits[3] of settling data in the future: • What consumer cost savings will be realized through load shifting?

[1] Non Domestic Maximum Demand Customers with a Peak Load Factor between 0-20% for Class 5, 20-30% for Class 6, 30-40% for Class 7 and over 40% for Class 8. Non Domestic customers, as defined in terms of the Supply licence, that have a metering system that records maximum demand and have a calculated peak load factor based on the annual consumption and annual peak demand that are recorded on the metering system.

[2] The smart meters requested by Ofgem (100% domestic and non domestic by 2018) will have Half Hourly capability, despite is not mandated. Different settlement rules apply for Non Half Hourly reading and for Half Hourly reading (mandated roll out by 2014)

[3] Benefits should take into account non economic ones too

	• How much reduced will market clearing prices be for all customers as a result of the demand curve shifting to the left? • How much reduced will be the need to construct peaking plants? • How much reduced will be the need to have backup, standby plants for intermittent renewable resources? • How will the settlements occur once the DCC operates: will the DCC lower the cost of settlement? • How will Time of Use Tariffs be handled with Half Hourly Data and Non Half Hourly Data, to enable changes in consumer behavior towards more efficient energy consumption? • How consumers receive energy information will affect their capabilities to be more or less active toward more dynamic and frequent meter readings. This includes standalone In Home Displays and smart phone and web applications where consumers could interact with the information with easy to use tools that set up consumption alarms, including in the case of prepayment. eMeter appreciates the opportunity to comment.