



ASSESSMENT CONSULTATION for Modification Proposal P218 'Facilitating Microgeneration within the BSC'

Prepared by P218 Modification Group

For Review	Date of Issue	Monday 11 February 2008	Version Number	1.0
For Attention Of	BSC Parties and other interested parties			
Responses Due	12.00 pm on Thursday 21 February 2008 to: modification.consultations@elexon.co.uk			
Overview or Purpose of Document:				

Proposed Modification P218 seeks to create a mechanism to allow more microgeneration to be accounted for within Settlement by treating it in a similar way to (but not the same as) Non Half Hourly (NHH) Unmetered Supply (UMS). This Modification aims to introduce a new agent; the Microgeneration Export Operator (MEO) who would collate microgeneration data and create Export Estimated Annual Consumptions (EACs) which would be passed into Settlement using the existing Non Half Hourly Data Aggregator (NHHDA) systems. Suppliers would need to register a portfolio Export Meter Point Administration Number¹ (MPAN) per Distributor so as to settle microgeneration in each GSP Group (but would be restricted to one Export MPAN per Distributor, per GSP Group).

Alternative Modification P218 seeks to create a process similar to the Proposed Modification with the distinction that the MEO collates the microgeneration information into a Supplier Purchase Matrix (SPM) file. This file could be sent directly to the Supplier Volume Allocation Agent (SVAA), therefore bypassing the NHHDA. Suppliers would not be required to register any Export MPANs.

Purpose of Consultation

This consultation seeks respondents' views regarding P218 and, in particular:

- Whether the Proposed Modification would better facilitate the achievement of the Applicable BSC Objectives² when compared to the current Code baseline;
- Whether the Alternative Modification would better facilitate the achievement of the Applicable BSC Objectives when compared to the Proposed Modification;
- Whether you support the implementation approach for a June 2009 release with a fallback of a February 2010 release (*section 3.10*);
- Whether you would use P218 to record NHH Export in Settlement;
- What assurance you would seek for a P218 regime (*section 3.5*);
- Any suggestions of how the potential benefits of better facilitating Settlement of microgeneration could be determined and any views on the impact of any potential 'spill';
- Whether there are any alternative solutions that the Modification Group has not identified and that could be considered in the remaining timeframe; and
- Whether there are any substantive issues not considered by the Modification Group which should be brought to the Group's attention for inclusion in its assessment of P218.

You are invited to respond to the questions contained in the attached pro-forma.

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¹ MPAN is the term referred to in the MRA, which identifies a SVA Metering System and Metering System Identifier, or MSID is the term used under the BSC. For consistency with the term used in the MRA, this Requirement Specification shall refer to MPAN.

² A copy of the Applicable BSC Objectives is provided in Appendix 1.

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Summary of Impacted Parties and Documents

As far as the Modification Group has been able to assess, the following parties/documents would be impacted by P218.

Please note that this table represents a summary of the full impact assessment results in Appendix 3.

Parties		BSC Sections		Code Subsidiary Documents	
Distribution System Operators	<input checked="" type="checkbox"/>	A	<input type="checkbox"/>	BSC Procedures	<input checked="" type="checkbox"/>
Generators	<input type="checkbox"/>	B	<input type="checkbox"/>	Codes of Practice	<input type="checkbox"/>
Interconnectors	<input type="checkbox"/>	C	<input type="checkbox"/>	BSC Service Descriptions	<input checked="" type="checkbox"/>
Licence Exemptable Generators	<input type="checkbox"/>	D	<input type="checkbox"/>	Party Service Lines	<input checked="" type="checkbox"/>
Non-Physical Traders	<input type="checkbox"/>	E	<input checked="" type="checkbox"/>	Data Catalogues	<input checked="" type="checkbox"/>
Suppliers	<input checked="" type="checkbox"/>	F	<input type="checkbox"/>	Communication Requirements Document	<input type="checkbox"/>
Transmission Company	<input type="checkbox"/>	G	<input type="checkbox"/>	Reporting Catalogue	<input checked="" type="checkbox"/>
Party Agents		H	<input type="checkbox"/>	Core Industry Documents	
Data Aggregators	<input checked="" type="checkbox"/>	I	<input type="checkbox"/>	Ancillary Services Agreement	<input type="checkbox"/>
Data Collectors	<input checked="" type="checkbox"/>	J	<input checked="" type="checkbox"/>	Data Transfer Services Agreement	<input type="checkbox"/>
Meter Administrators	<input type="checkbox"/>	K	<input type="checkbox"/>	Distribution Code	<input type="checkbox"/>
Meter Operator Agents	<input checked="" type="checkbox"/>	L	<input type="checkbox"/>	Distribution Connection and Use of System Agreement	<input type="checkbox"/>
ECVNA	<input type="checkbox"/>	M	<input type="checkbox"/>	Grid Code	<input type="checkbox"/>
MVRNA	<input type="checkbox"/>	N	<input type="checkbox"/>	Master Registration Agreement	<input checked="" type="checkbox"/>
BSC Agents		O	<input type="checkbox"/>	Supplemental Agreements	<input type="checkbox"/>
SAA	<input type="checkbox"/>	P	<input type="checkbox"/>	Use of Interconnector Agreement	<input type="checkbox"/>
FAA	<input type="checkbox"/>	Q	<input type="checkbox"/>	BSCCo	
BMRA	<input type="checkbox"/>	R	<input type="checkbox"/>	Internal Working Procedures	<input type="checkbox"/>
ECVAA	<input type="checkbox"/>	S	<input checked="" type="checkbox"/>	BSC Panel/Panel Committees	
CDCA	<input type="checkbox"/>	T	<input type="checkbox"/>	Working Practices	<input type="checkbox"/>
TAA	<input type="checkbox"/>	U	<input type="checkbox"/>	Other	
CRA	<input type="checkbox"/>	V	<input type="checkbox"/>	Market Index Data Provider	<input type="checkbox"/>
SVAA	<input checked="" type="checkbox"/>	W	<input type="checkbox"/>	Market Index Definition Statement	<input type="checkbox"/>
Teleswitch Agent	<input type="checkbox"/>	X	<input checked="" type="checkbox"/>	Connection and Use of System Code	<input type="checkbox"/>
BSC Auditor	<input checked="" type="checkbox"/>	Z	<input type="checkbox"/>	System Operator-Transmission Owner Code	<input type="checkbox"/>
Profile Administrator	<input type="checkbox"/>			Transmission Licence	<input type="checkbox"/>
Qualification Agent	<input checked="" type="checkbox"/>				
Other Agents					
Supplier Meter Registration Agent	<input type="checkbox"/>				
Unmetered Supplies Operator	<input type="checkbox"/>				
Data Transfer Service Provider	<input type="checkbox"/>				

1 Executive Summary

The key conclusions of the P218 Modification Group ('the Group') are outlined below.

The Group:

- **DEVELOPED** a solution for the Proposed Modification whereby a new BSC Agent would be created to hold microgeneration information, create EACs for microgeneration portfolio MPANs and submit these EACs to the relevant NHHDA;
- **AGREED** an initial view that the Proposed Modification **WOULD NOT** better facilitate the achievement of Applicable BSC Objectives (c) and (d);
- **AGREED** that an Alternative Modification solution should be developed in order to allow microgeneration EAC data to be included in a Supplier Purchase Matrix by the MEO and submitted directly to the Supplier Volume Allocation Agent (SVAA);
- **AGREED** an initial view that the Alternative Modification **WOULD** better facilitate the achievement of Applicable BSC Objectives (c) and (d) when compared to the Proposed Modification but **WOULD NOT** better facilitate the achievement of Applicable BSC Objectives when compared to the current baseline;
- **NOTED** that the implementation costs for the Proposed/Alternative Modification, including change to current BSC Agent systems, procurement of a new BSC Agent and the cost of developing systems by that new BSC Agent, were estimated to be approximately £400,000;
- **NOTED** the estimated Party/Party Agent industry costs that ranged from negligible amounts to 3-4 million (based on a large Supplier automating the solution); and
- **CONCLUDED** that they could not establish whether the non Settlement of microgeneration was an issue under the BSC and could not estimate the amount or impact of any spill without a comprehensive exercise involving installation of Meters.

A description of the P218 solution is provided in Section 2. Further information regarding the Group's initial discussions of the areas set out in the P218 Terms of Reference is contained in Section 3.

A summary of the Group's initial views regarding the merits of the Proposed Modification and Alternative Modification can be found in Section 4. A copy of the Group's full Terms of Reference can be found in Appendix 2.

2 Description of Modification

This section outlines the solution for the Proposed and Alternative Modifications as developed by the Modification Group.

For a full description of the original Modification Proposal as submitted by Chris Welby ('the Proposer'), please refer to the P218 Initial Written Assessment (IWA) [ELEXON - Modification Proposal P218](#)

2.1 Proposed Modification - Summary

The Proposed Modification aims to introduce a new agent; the Microgeneration Export Operator (MEO) who would collate microgeneration³ data and create Export Estimated Annual Consumptions (EACs) which would be passed into Settlement using the existing NHHDA systems. Suppliers would be able to register a single portfolio Export MPAN for microgeneration in each GSP Group per Distributor⁴. It should be noted that the term pseudo MPAN was used in the Modification Proposal. However, this is already defined in the MRA, therefore the term portfolio MPAN has been used within this document.

It is envisaged that the MEO would receive details of the microgeneration Export site. The MEO would then be able to calculate the Annual Export for the site using the Panel-approved Export Factor. The Annual Export value would be calculated using the equation below (where the 8,766 is derived from 365.25 days*24hours and the Microgeneration Capacity is confirmed by the Supplier to the MEO):

$$\text{Annual Export} = \text{Microgeneration Capacity} * 8766 \text{ hours} * \text{Export Factor}$$

The MEO would aggregate the Annual Exports for all the sites within a Supplier's portfolio for a particular Distributor within a GSP Group to form an EAC for the portfolio MPAN. This EAC value would be passed to a NHHDA. The NHHDA would then process the EAC in the same way as all other EACs and submit it to the SVAA. The SVAA systems would apply the unrestricted Standard Settlement Configuration (SSC) and Profile Class 8 to calculate Half Hourly (HH) values and pass these to the Settlement Administration Agent (SAA).

2.2 Alternative Modification - Summary

P218 Alternative Modification seeks to create a process similar to the Proposed Modification with the distinction that the MEO collates the microgeneration information into a Supplier Purchase Matrix (SPM) file. This information would then be sent directly to the SVAA using the existing flow (D0041). The process for registering the microgeneration with the MEO and the process of calculating the EAC would be the same as the Proposed Modification. However the Supplier would not be required to register portfolio MPANs for microgeneration Export and would therefore not be required to appoint any agents.

In addition, the Group agreed that the solution should be flexible so that initially one EAC would be calculated for microgeneration in each GSP Group per Distributor. However, the Panel would have the ability to decide whether to allow separate EACs to be calculated for each technology type at a later date.

See section 3.9 for further information regarding the Alternative Modification solution.

3 Areas Raised By the Terms of Reference

This section outlines the initial conclusions of the Modification Group regarding the areas set out in the P218 Terms of Reference.

³ For the purposes of P218, microgeneration refers to Export from a Small Scale Third Party Generating Plant as defined in the BSC.

⁴ It should be noted that the Modification Proposal referred to one MPAN for microgeneration in each GSP Group. However the Group agreed that this was not a workable solution as information would be required separately for different Distributors.

3.1 *Details of the Proposed Solution*

This section summarises the solution for the Proposed Modification. For full details of the solution requirements, please refer to the P218 Requirements Specification [ELEXON - Modification Proposal P218](#).

3.1.1 Creation of the MEO

P218 proposed that a new agent be established (the MEO) to calculate EACs for portfolio MPANs and submit these into Settlement. The MEO would be responsible for storing microgeneration information. All microgeneration sites registered under P218 would be assigned to a particular portfolio MPAN based on the Supplier responsible for the site and the GSP Group and Distributor within whose Distribution network it is located. The MEO would also be responsible for producing Export EACs and submitting these EACs to the relevant NHHDA for Settlement processing.

Section 3.4 sets out the Group's discussion regarding the status of the MEO and section 3.1.6 details the processes that the MEO would need to follow regarding registration and deregistration of microgeneration sites.

3.1.2 Export Factors

Section 3.2 sets out the Group's discussion regarding the methodology for determining Export Factors under P218.

3.1.3 Creation of Portfolio MPANs

P218 requires the creation of portfolio MPANs for different Suppliers. These must be unique and clearly identify vital information. Individual MPANs would be created for each Distributor to cover microgeneration within the relevant Distribution networks. The creation of portfolio MPANs would be undertaken by the relevant Distribution System Operator (DSO). A pre-arranged structure agreed by the DSOs would be preferable to facilitate identification of the MPANs quickly.

The Group proposed that as part of the initial implementation approach, DSOs would set up skeleton MPANs for all Suppliers within areas that they are operating at the time of implementation. Respondents to the P218 impact assessment were asked to confirm whether they believed such a bulk implementation process was appropriate. Respondents indicated that they did not agree with a bulk implementation approach and this has therefore been excluded from the solution.

Therefore, following the initial implementation, Suppliers wishing to settle microgeneration through the P218 process would request an MPAN from the relevant Distributor using the D0168 'Request for Additional/New MPAN Core(s)' flow as per the existing procedures set out in the MRA. The 'Additional Information' field of the D0168 would need to be used to inform the DSO that the request relates to a portfolio MPAN. The DSO would then provide details of the new MPAN to the Supplier using the D0169 'Allocation of New/Additional MPAN Core(s)' flow.

3.1.4 Assignment to Line Loss Factor Class (LLFC)

The Group noted that all MPANs need to be assigned to a specific LLFC; therefore the DSO may need to set up new LLFCs for portfolio MPANs. Line Loss Factors (LLFs) would need to be

calculated for each LLFC and submitted to BSCCo for approval as per the existing process in BSCP28⁵.

3.1.5 Registration and Appointment of Agents

On receipt of the portfolio MPAN details, the Supplier would need to register the new MPAN in the Supplier Meter Registration System (SMRS), together with details of the agents appointed to that MPAN and the Standard Settlement Configuration (SSC), Profile Class and Measurement Class to be used to process the Metered Data within Settlement. The Group agreed that this information would be sent to SMRS using the existing processes i.e. the D0055 'Registration of Supplier to Specified Metering Point' flow. The Group specifically discussed the following information that should be provided in the flow:

- **SSC** – The SSC allows the SVAA to profile the energy for a particular MPAN across different half hourly periods. Under Proposed Modification P218 a single portfolio MPAN is created per GSP Group per Distributor. Therefore, more than one microgenerator may be assigned to a particular portfolio MPAN which means it is not possible to apply a specific SSC to reflect the Export profile for the MPAN as a whole (unless you created individual SSCs for each portfolio MPAN). The Group therefore agreed that the SSC for unrestricted Export should be applied to all portfolio MPANs. This would apply the energy evenly across all half hourly periods.
- **Profile Class** – As with the SSC; the Profile Class allows the SVAA to profile the energy for a particular MPAN across different half hourly periods. The Group therefore agreed that Profile Class 8 should be used for all portfolio MPANs as this is the Profile Class for large NHH Import sites and would therefore provide the flattest profile available.
- **Measurement Class** – The Group agreed that Measurement Class B would be used for all portfolio MPANs as this would identify them as Non Half Hourly Unmetered MPANs.
- **Meter Timeswitch Code** – The Group were keen to have a specific flag to easily identify portfolio MPANs. It was agreed that a new Meter Timeswitch Code would be created for this purpose.
- **Energisation Status** – The Group agreed that the Energisation Status for all portfolio MPANs would initially be set to de-energised. Once a Supplier registers a microgeneration site with the MEO then it should also send an update to the SMRS (using the D0205 'Update Registration Details' flow) setting the Energisation Status to energised. This would allow the MEO to send non-zero EACs for the MPAN.
- **NHHDC** - For the purposes of P218 the MEO would be responsible for undertaking the role (normally that of the NHHDC) of submitting the EAC to the relevant NHHDA using the D0019 'Metering System EAC/AA Data' flow. Therefore the MEO would, for the purposes of the D0055 effectively be the NHHDC. It should be noted that this does not mean that the MEO would need to be Qualified as a NHHDC as it would not be carrying out all of the NHHDC activities prescribed under the Code. The MEO would however need to be registered in a similar way to the NHHDC, for those portfolio MPANs, to ensure that the registration is complete and to enable the NHHDA to receive EAC data from the MEO.

⁵The Group noted that this aspect of P218 relates to Modification Proposal P216 'Audit of LLF Production' which is proposing to introduce new rules relating to the calculation of LLFs. However, the solution developed under P218 is not inconsistent with the P216 proposed solution, although if both P216 and P218 are approved then the new LLF BSCP being created under P216 may need amending via a Change Proposal to incorporate rules relating to portfolio MPANs.

To ensure that the SMRS would accept the D0055 with the MEO registered as NHHDC and so that the NHHDA can accept the D0019 flow containing the EAC, the MEO should be registered in Market Domain Data (MDD) with the NHHDC role code (D). Although the MEO would send and receive data flows using the NHHDC role code, there are a number of NHHDC flows that it would not need to receive. Therefore the MEO would be set up in such a way that any flows received would be rejected unless they are specifically required for the MEO activities. Flows required by the MEO are set out in the P218 Requirements Specification.

On registration of a new portfolio MPAN the Supplier would also send a NHHDC appointment flow (D0155) to the MEO. This would ensure the MEO is aware of the new MPAN so it can be registered in the MEO database. To prevent erroneous appointments it would be mandatory for the 'Agreed Service Details' field to refer to the MPAN being a portfolio Export MPAN. Should the MEO receive an appointment flow without this information then it would query the appointment with the Supplier. This should prevent the MEO from being registered to a non portfolio MPAN.

The Group noted that there are numerous rules relating to the role of NHHDC that the MEO would not be required to undertake. Therefore, the Code and any subsidiary documents would need to be clear that whilst the MEO is assigned a role code of NHHDC in MDD, it is not actually a NHHDC and therefore would not be able to undertake any other NHHDC activities not related to its role as MEO.

- **NHHDA** – The processes for registering a NHHDA is not affected by P218 e.g. the Supplier would be required to appoint a NHHDA using the existing appointment flow (D0153). The Supplier would also need to include details of the NHHDA in the D0055 being sent to the SMRS. On receipt of the D0055, the SMRA would send a D0209 'Instruction to NHH or HH Data Aggregator' flow to the NHHDA to confirm the registration details. This reflects the existing process for registration of new MPANs.

To enable the MEO to send the D0019 to the correct NHHDA, the Supplier would also need to send a D0148 'Notification of Change to Other Parties' flow to the MEO detailing the NHHDA for the MPAN.

- **MOA** – Under P218 there would be no requirement for an MOA to be registered to the MPAN. However failure to provide details of an MOA on the D0055 would lead to an incomplete registration. Therefore it is proposed that the MEO should be recorded as the MOA. In order to prevent the SMRS from rejecting this registration, the MEO should be registered in MDD with a MOA role code (M).

The Group noted that although the MEO would be registered as MOA to ensure a complete registration, the MEO would not be able to, or obliged to, carry out any activities associated with the MOA role under the BSC.

The Group proposed that as part of the initial implementation approach, each SMRS would create the relevant portfolio MPANs for all Suppliers. These would be assigned the registration data described above. Respondents to the P218 impact assessment were asked to confirm whether they believed such a bulk implementation process was appropriate.

Respondents indicated that they did not agree with a bulk implementation approach and this has therefore been excluded from the solution.

3.1.6 MEO Processes

As discussed above, the MEO would be required to store microgeneration data, assign microgeneration sites to portfolio MPANs and create EACs for submission to the relevant NHHDA.

3.1.6.1 Portfolio MPAN Registration

When a Supplier decides to create a new portfolio MPAN it would send a NHHDC Appointment flow (D0155) to the MEO stating that the appointment relates to a portfolio MPAN. The MEO would add the new MPAN to the database with the energisation status set to de-energised.

Should the MEO receive a D0155 flow which does not refer to the MPAN as being a portfolio Export MPAN within the 'Agreed Service Details' field, then the MEO would reject the appointment by sending the 'Rejection of Agent Appointment' flow (D0261) to the Supplier.

The Supplier would also send a D0149 flow to the MEO providing the MEO with details of the relevant NHHDA registered to the portfolio MPAN. This would allow the MEO to send the EAC to the correct NHHDA.

When a microgeneration site is added to the MPAN, the Supplier would send a D0205 to the SMRS setting the Energisation Status to energised. A copy of this flow would also be sent to the MEO. On receipt of a D0205, the MEO would update the relevant MPAN record with the revised Energisation Status. Further changes to the Energisation Status of the MPAN would also be sent to the SMRS using the D0205 flow.

If the Supplier decided not to use the P218 process any longer then it would deregister the portfolio MPAN. The Supplier would also send the D0151 'Termination of Appointment or Contract by Supplier' to the MEO so that the portfolio MPAN would be end dated in the MEO database.

3.1.6.2 Microgeneration Registration/ Deregistration

Section 3.6 sets out the Group's discussion regarding the processes required for registering and deregistering microgeneration sites.

3.1.6.3 Obligation to provide portfolio details

In addition to the registration activities, the MEO would be obliged to send portfolio details to Suppliers or DSOs on request. The Group agreed that this information could be sent manually via email i.e. it would not need to be classified as a new DTC flow.

3.1.6.4 EAC Calculation

When a microgeneration site is either added to or removed from a portfolio MPAN (or the Export Factor / registration data is updated) the MEO would recalculate the EAC for that MPAN (for the Effective From Date) as follows:

- The Annual Export value for the site to be added or removed would be calculated as follows:

$$\text{Annual Export} = \text{Microgeneration Capacity} * 8766 \text{ hours} * \text{Export Factor}$$

- The record for the microgeneration site would be updated to include the Annual Export value;
- The individual Annual Export value would either be added to or subtracted from the EAC value for the relevant portfolio MPAN; and

- The record for the relevant portfolio MPAN would be updated to include the new EAC value.

3.1.6.5 Submission of EACs

The MEO would need to submit EACs to the NHHDA via the D0019 flow. The Group agreed that the existing requirement on NHHDCs to submit EAC data at least 5 Working Days after the Effective From Date of the change and in time for the NHHDA to include the values in their Initial Settlement (SF) Run, should also apply to the MEO.

The Group noted that the NHHDA requires flows to be sent in a sequential order; therefore the MEO would need to ensure that flows for each individual NHHDA are sequential, with no gaps. Should the D0019 file fail validation by the NHHDA, then the NHHDA would send an exception flow. The MEO would therefore need to manage the exception.

3.1.7 Supplier Processes

3.1.7.1 Registration of P081 Export MPAN

Currently Suppliers are required to register microgeneration Export MPANs if the energy is to be taken into account in Settlement (i.e. the P081 solution). It is proposed that the P218 solution is implemented alongside the existing P081 solution. Section 3.3 sets out the discussions of the Group relating to the parallel running of both P218 and P081 processes. This includes a requirement on all Suppliers to inform the MEO if they intend to register a new P081 Export MPAN.

Updating Registration Data

The Group agreed that an additional obligation would also be placed on Suppliers to send updated microgeneration registration data to the MEO within 5 WDs of becoming aware of the change. Changes to registration data should be submitted using the new microgeneration registration flow.

In addition the Supplier should send updates to portfolio MPAN registration data to the SMRS using the D0205 'Update Registration Details' flow if any of the information set out in section 3.1.5 needs updating. A copy of the D0205 would also be sent to the MEO so they are aware of any energisation status changes.

3.1.8 DSO Processes

As set out in section 3.1.3, the DSO would be required to create portfolio MPANs and apply new LLFCs.

In addition the DSO may be requested to disconnect a P081 Export MPAN if a Supplier wishes to transfer the microgeneration site from the P081 process to the P218 process. The Group believed that some DSOs would not allow the P081 Export MPAN to be disconnected if there was still exporting capability at the site.

The Group agreed to specifically ask DSO respondents to the impact assessment whether they would allow Export MPANs to be disconnected or whether the MPAN would need to remain.

The responses to the impact assessment varied with some DSOs stating that they would allow the P081 MPAN to be disconnected, whereas others stated that the MPAN would have to remain. The Group noted that if the MPAN were to remain, the Supplier would have to logically de-energise the MPAN and de-appoint the agents. However, the agents would not be able to be deregistered from SMRS. One member of the Group noted that agents may not accept the de-appointment flow if they are still registered within SMRS, therefore Suppliers may continue to incur costs. The Group

agreed that Suppliers would have to take this into account when deciding whether to transfer sites from the P081 process into the P218 process.

3.1.9 Data Flows

Section 3.7 sets out the Group's discussion regarding the creation of new data flows and the changes required to the recipients of some existing data flows.

3.1.10 NHHDA

It is not anticipated that any changes would be required to NHHDA systems and processes.

Proposed Modification P218 would require the NHHDA to accept EAC data from the MEO. On receipt of the flow the NHHDA would check that the file was received from an agent with a NHHDC role code in MDD. The Group concluded that, provided the MEO was registered in MDD with a NHHDC role code then there would be no impact on the NHHDA systems or processes.

3.1.11 SVAA

The Group agreed that new Consumption Component Classes (CCCs) would be required for portfolio Export MPANs to ensure that the SVAA processes the data correctly and the Supplier's percentage of actual reads is not affected by P218.

The Group noted that, following the changes to SVAA, the remaining processes of Settlement are completed without any changes. The SVAA system would send the volume quantities allocated to the individual Suppliers to the Settlement Administration Agent (SAA) which carries out the Settlement Run.

3.2 *Potential methods for calculating EACs for Microgeneration*

Under P218, portfolio MPANs would be created. Suppliers could register one or more microgeneration sites which would be assigned to the relevant portfolio MPAN, dependent on the GSP Group and Distributor for the specific site. The MEO would calculate an EAC for each portfolio MPAN which would represent an estimate of the amount of energy Exported from all the microgeneration sites assigned to the portfolio MPAN.

3.2.1 Analysis of Export Factors

In order to calculate an EAC for each portfolio MPAN, an estimate of the energy Exported by each individual microgenerator would need to be determined i.e. the Annual Export. To calculate the Annual Export the Group agreed that the MEO should take the generation capacity of the microgenerator (i.e. the amount of energy that the microgenerator is capable of producing in an hour). This value would then be multiplied by 8766 (i.e. the number of hours in the year taking into account leap years) to give the maximum capacity for the microgenerator assuming it is running at full capacity 24 hours a day for the entire year. This value would then be multiplied by an Export Factor. The Export Factor would be a value determined by the Panel to represent the amount of energy actually Exported from the site. This would take into account the estimated load factor for each microgenerator i.e. assuming the site was not actually running at full capacity, the load factor would estimate the actual level of output for particular sites. In addition, the Export Factor would take into account the fact that not all of the generated energy would actually be Exported from the site as there would usually be some associated level of Import.

As part of the Assessment Procedure, the Group undertook analysis to determine possible values for the Export Factor. The full results of this analysis are contained in Appendix 4. It should be noted that a full set of data required to carry out this analysis was only available for a limited number of sites with metered data.

The Group were keen to understand the effect of using one Export Factor based on the weighted average for all types of microgeneration technology compared with separate Export Factors for each microgeneration technology. Therefore for each site the actual Export was recorded and compared with both the estimated Export based on a microgeneration technology specific Export Factor and also the estimated Export based on a single Export Factor for all sites. The results of the comparison (contained in Attachment 1) represented the gross error introduced by estimating the Export compared with actually using Metered Data.

3.2.2 Analysis Conclusions

The Group noted that the actual Export was widely variable across individual sites and that gross error was greater when using the technology specific Export Factors. It was assumed that this result was based on the limited sample size and the variance of the sample. Therefore when the single Export Factor was used the weighted averaging methodology reduced the effect of any values showing a significant deviation from the main sample.

The Group noted that the methodology for determining Export Factors would be set by the Panel, however they believed the methodology used for the analysis was the most appropriate methodology based on the limited data available. The Group also noted that the data used for the analysis was limited with no data available at all for certain microgeneration technologies. It was assumed that the amount of data available was not likely to increase in the near future. Therefore the Group believed that Export Factors should initially be based on a weighted average across all microgenerators. If the Panel decided at a later date that it would be more appropriate to use microgeneration technology specific values then this should be possible. Therefore separate technology specific Export Factors should be recorded, noting that initially the values for all technology types should be the same. Having separate Export Factors would allow flexibility for the Panel to determine whether there is a benefit in producing separate Export Factors for different technology types at a later date, for example when more data becomes available.

3.2.3 Use of Export Factors

Once calculated, the Export Factor values would be approved by the Panel, published on the BSC Website and sent to the MEO. The MEO would then apply the approved Export Factors to the EAC calculation. To ensure the Export Factors are accurate and fit for purpose the Panel would be able to review the values from time to time. Should the values be amended, then the MEO would be required to recalculate the EACs for all portfolio MPANs and submit these into Settlement.

3.3 *Current Microgenerators in Settlement and the Impact of P218 on Existing Processes.*

The existing process for settling microgeneration was introduced with P081 'Removal of the Requirement for Half Hourly (HH) Metering on Third Party Generators at Domestic Premises' and was implemented in September 2003. P081 introduced a new process of NHH Settlement of Export Metering for small quantities of generation (below a 30kW threshold). Prior to the implementation of P081, generation could only be taken into account in Settlement if a HH Meter was installed.

P081 requires that two MPANs⁶ are used for these types of sites – one for Import and another for Export.

It is noted that the industry take up of the P081 processes has been limited, there are only approximately 30 Export Meters of this type registered⁷ in Settlement out of over 3,000 installations. Any Export from the sites not currently registered in Settlements is therefore spilled onto the Distribution System reducing the perceived level of demand and therefore reducing the level of GSP Group Correction Factor. This means that any Settlement benefit from microgeneration is smeared across all Suppliers in the relevant GSP Group.

It is proposed that P218 would not be mandated but offered as an additional option, therefore the impact of P218 on existing Parties would vary depending on the take-up of the P218 processes. As P218 is additional to the current P081 processes, the Group considered whether any special processes were required to allow P218 to run in parallel with P081. Appendix 5 sets out the high level process Suppliers should follow when moving sites between the P218 and P081 processes.

A specific obligation would be placed on all Suppliers to inform the MEO when they register a new P081 Export MPAN. The MEO would then search its database to see whether the site is already registered under P218. If the site is registered under P218, then the MEO would inform the current Supplier that a P081 Export MPAN is being created. The MEO would also inform the new Supplier that the microgeneration site is already registered under P218. The Group noted that the MEO would not be able to stop the P081 MPAN from being created. It would be the responsibility of both Suppliers to resolve the issue and prevent double counting of energy in Settlement.

In addition, when a new site is registered with the MEO under the P218 process, the MEO would be required to search to ECOES database to ensure that a P081 MPAN does not already exist. If the site is already registered then the MEO would inform the current Supplier. The current Supplier could lodge an objection (as set out in section 3.6.3).

The Group felt that these additional steps in the process would reduce the risk that an individual microgenerator is registered in both processes.

3.4 *Status of the Microgeneration Export Operator*

The Group discussed whether the MEO should be a new Party Agent or whether the role should be carried out by a central BSC Agent/Service Provider.

The Group noted that the EAC calculation to be carried out by the MEO was not complicated. The MEO would need to hold data relating to individual microgeneration sites and portfolio MPANs, and would need to submit EACs to the relevant NHHDA using the D0019 flow. As the majority of data flows to and from the MEO would be communication with the relevant Supplier it was initially felt that the role could be undertaken by Party Agents provided by each Supplier who wished to use the P218 process.

However, the Group had concerns regarding the tracking of individual microgeneration sites and the risk that sites could be duplicated within Settlement. Based on the complicated processes that would be required to manage sites which underwent a change of Supplier, or a transfer to or from the P081 process, the Group concluded that it would be appropriate for the role of the MEO to be undertaken by a central agent. This would result in the costs of establishing the new agent being incurred once centrally and recovered from all BSC Parties. One member of the Group raised concerns that having a single central MEO would be less competitive than allowing Suppliers to

⁷ [Panel Paper 121/08](#) contains more information regarding the approved Modification P81 and the uptake of this process.

procure their own agents. However, it was concluded that the central MEO would be procured via a competitive tendering process and that concerns regarding the complication of using several MEOs outweighed any concerns regarding competition.

The Group then considered whether the central agent should be established as a new BSC Agent (in accordance with section E of the BSC) or a Service Provider where the roles and responsibilities would be assigned to BSCCo who would then be able to sub contract with an appropriate agent. The Group concluded that the MEO should be set up as a BSC Agent as the information provided by the MEO would be used within the Settlement calculations and the procurement processes would be transparent to all BSC Parties. It was noted that as a BSC Agent, the role could not be provided by a BSC Party.

3.5 Assurance of the P218 Process

The Modification Group believed the P218 solution must provide appropriate assurance to the industry that errors are not introduced into Settlement through defects in the processes.

The Modification Group believed assurance should be considered for all areas where there is potential for an error to occur in Settlement that could be material. The key areas highlighted were:

- Suppliers' claimed generation capacity for microgeneration sites;
- Connection and operational status of microgeneration equipment;
- Supplier processes for settling microgeneration; and
- MEO processes.

3.5.1 Suppliers

Suppliers are already required under the BSC to provide accurate information to Settlement, to the best of their knowledge (Section U 1.2). In addition, under P218 a new obligation would be placed upon Suppliers to update the MEO with appropriate information in an accurate and timely manner in accordance with the BSC and/or any relevant BSCP.

The Group considered whether specific assurance could be sought to confirm that the generation capacity declared by the Supplier was accurate and whether the microgenerator was actually generating during the period when the site was registered in Settlement. It was noted that the BSC could not place specific obligations on Customers, therefore any assurance techniques would need to be applied to Suppliers. The Group noted that there is a risk that Customers could deliberately provide inaccurate information to Suppliers. However, this was outside of the scope of P218 as the Supplier would deal with this under their contractual arrangements with the customer.

The Group considered introducing a requirement to create a list of 'approved' microgenerators which would indicate the generation capacity of the equipment. Only microgeneration equipment with a past record showing it was capable of Exporting energy would be included on this list. This would prevent microgenerators with a poor Export Factor being registered under P218. The majority of the Group agreed that this process would be too complicated considering the current level of microgeneration and therefore the impact of inaccurate data on Settlement overall.

The Group also considered introducing a process whereby Suppliers would be mandated to hold a contract with the Customer relating to the microgeneration Export. However, it was noted that this was not required for Import sites so should not be required under P218. The Group concluded that an obligation should be placed on Suppliers to provide accurate information, with the onus on

the Supplier to decide what information they required to provide comfort that data entered into Settlement was accurate. It was noted that Suppliers would want their own confirmation regarding the accuracy of data provided to them if they were paying the Customer for Export. Suppliers would be required to demonstrate, upon request, to the best of their knowledge, that they have provided accurate information about the generation capacity of the registered microgeneration site. The Suppliers would also be required to confirm that the connection and operational status of the microgeneration equipment is up to date and accurate.

Suppliers would be required to maintain an audit trail of appropriate evidence to demonstrate the reliability of the information provided to the MEO and their processes, including any checks and measures in place to deter exploitation of P218.

Examples of evidence for an audit trail could include:

- Contractual agreement with the customer;
- Copy of the G83 notice provided to the DSO upon installation of the microgeneration equipment;
- Details of capacity used for claiming Renewable Obligations Certificates (ROCs);
- Record of Customer confirmation capacity;
- Record of Customer notification to Supplier of change in situation i.e. de-energisation /disconnection/downtime, etc; and
- Record of Supplier site visit.

The Group agreed that the Performance Assurance Board (PAB) should be responsible for overseeing the assurance of P218 processes, The Group agreed to ask consultation respondents a specific question regarding the level of assurance required based on the following options:

- **Option 1** - P218 could draft a specific obligation for the PAB to conduct an annual check on Supplier processes; or
- **Option 2** - P218 could place an obligation on a Category A BSC Signatory to provide an annual declaration that the information provided is accurate; or
- **Option 3** - P218 could use the current Technical Assurance technique and allow the PAB to conduct checks at its discretion, based on the perceived risk in accordance with the principles established under Modification P207 'Introduction of a new governance regime to allow a risk based Performance Assurance Framework (PAF) to be utilised and reinforce the effectiveness of the current PAF'.

Suppliers choosing to use the P218 process would be required to comply with all BSCPs outlining the processes for microgeneration, i.e. registration of microgeneration with MEO, change of Supplier and transfer between P081 and P218.

Finally, one member of the Group suggested that the MEO should monitor the Energisation Status of related Import MPANs using the ECOES database. Should the Import MPAN be de-energised then the MEO should inform the Supplier responsible for the Export site, as data relating to the Export site should no longer be entering Settlement. The Group noted that generally the Import and Export MPANs would be with the same Supplier and therefore the Supplier would know that the Import MPAN was de-energised and should take action to ensure that Export data was no longer entering Settlement. It was acknowledged that the Supplier may fail to de-energise the Export for short term de-energisations, however the complexity and cost of introducing a new

monitoring process was felt to outweigh the impact of any error in Settlement should erroneous Export data continue to enter Settlement for a short period of time.

3.5.2 MEO

As stated in section 3.4, the MEO would be classified as a BSC Agent and would therefore not need to undergo Qualification (as this relates specifically to Parties and Party Agents). As a BSC Agent, the MEO would undergo a rigorous tender process to confirm their ability to manage the responsibilities of the role e.g. the ability to send and receive DTC flows via the DTN and process and maintain standing data. In addition the MEO would be added to the scope of the BSC Audit which would ensure that the processes undertaken by the MEO are compliant with the BSC. A BSC Service Description would be created setting out the role of the MEO and this would be visible to all BSC Parties and subject to the normal change control provisions.

3.6 *Processes Required to Ensure Effective Change of Supplier*

Under Proposed Modification P218, portfolio MPANs would be created per Supplier, per GSP Group, per Distributor. Suppliers who choose to register microgeneration under the P218 process should send details of the microgeneration site to the MEO and the specific site would be assigned to the relevant portfolio MPAN. Should a different Supplier become responsible for the microgeneration site, then the old Supplier should deregister the site with the MEO, and if the new Supplier also intends to use the P218 process then, the new Supplier should register the site with the MEO. Upon any registration or deregistration the MEO would be required to re calculate the EAC for the related portfolio MPAN(s) and submit the revised value(s) to the relevant NHHDA(s).

3.6.1 Microgeneration Registration/ Deregistration

The Group considered the detailed step by step process for managing registration and deregistration of microgeneration sites with the MEO. The agreed process is detailed in full in Appendix 6 and is based on the current MPAN registration process set out in the MRA. In certain areas the process has been simplified in comparison to the MRA processes based on the assumption that there will be a much small number of sites registering microgeneration in comparison with the number of MPANs registered in SMRS.

The Group considered exactly how the change of Supplier process would work under P218 and proposed additional steps in the process to minimise the risk that the Export from a specific microgeneration site is double counted in Settlement. Appendix 5 contains the high level process that a Supplier should follow on change of Supplier. It should be noted that when a Supplier becomes responsible for a microgeneration Export site, it may not necessarily know whether the site is already registered in Settlement under the P081 process or the P218 process, or whether the site is simply spilling onto the system. Therefore the Supplier would not be able to indicate to the MEO that any communication relates specifically to a change of Supplier. This means the processes followed by the MEO on change of Supplier are identical to the processes followed when a new microgeneration site is registered.

3.6.2 MEO checks

As highlighted above, when the MEO receives a microgeneration registration flow it would not know whether the site is already registered in Settlement. Therefore the MEO would be required to check firstly whether an identical site is registered in its database under the P218 process; and secondly whether an identical site is registered on ECOES as a P081 Export MPAN. Should the MEO find the particular site on either the MEO database or on ECOES then the MEO would inform

the current Supplier. The new registration would only be progressed if the current Supplier did not lodge an objection.

The Group discussed how the MEO would know whether two microgeneration sites were the same. It was agreed that in the majority of cases the microgeneration site would be linked to an Import MPAN. Therefore Suppliers would be required to provide details of the Import MPAN and the full address for the site on the microgeneration registration flow. The MEO would then use this information to search for an identical site. It was noted that some sites are linked to several Import MPANs. Therefore guidance would be provided to ensure Suppliers provided the correct Import MPAN: where multiple related Import MPANs are present then the primary Import MPAN should be provided; and where the multiple Import MPANs are not related then all Import MPANs should be provided. The Group noted that the MEO would also have information regarding the microgeneration capacity and technology that could be used if more than one match was found. Finally, in order to make the search more robust, the Group agreed that Suppliers would be limited to one Supplier registering microgeneration under P218 for any given address.

3.6.3 Objection Process

The Group were keen to include a Supplier objection process under P218 to prevent erroneous registrations being progressed. The Group considered the grounds for objection and concluded that a Supplier could only object to losing a microgeneration site if it believed it had a commercial contract in place with the relevant Customer.

Under the current change of Supplier process set out in the MRA there is a detailed objection process and Suppliers are required to withdraw their objection once the issue is resolved. The Group did not believe it was necessary to include this level of complexity under P218 due to the reduced number of sites involved. Therefore the process agreed would allow the current Supplier 5 WDs to lodge an objection with the MEO. On receipt of an objection, the MEO would inform the new Supplier and would not progress the new registration. The Suppliers would therefore be responsible for resolving the issues between them and the new Supplier would be required to submit a new registration flow if it still wanted to register the site after resolution of the issue.

3.7 *Impact on the Master Registration Agreement (MRA) and Data Transfer Catalogue (DTC)*

The Group noted that P218 would introduce a number of requirements relating to communication between the MEO and individual Suppliers. The Group felt that the most robust solution would be for this communication to be carried out using the Data Transfer Network (DTN). The P218 Requirements Specification sets out a number of new DTC flows that would be required relating to the registration of microgeneration sites. This information could not be contained within current data flows as there are several new data items such as microgeneration capacity and technology that need to be included.

In addition to the new DTC flows needed to manage the registration of microgeneration sites, P218 would also need to amend the recipients of several current DTC flows relating to MPAN registration and EAC submission.

The P218 Requirements Specification was issued to MRASCo for impact assessment, the results of which are provided below in section 3.8.1

The impact assessment highlighted that some changes would need to be made to the MRA itself, in particular the definition of a Metering Point and Clause 15. These changes are Priority

Provisions of the MRA and would therefore require Authority consent. Additionally the MEO would need to be permitted access to ECOES. It was felt that these changes could be progressed within a 12 month implementation window.

The impact assessment also highlighted a number of additional flows that may be impacted, which had not been referenced in the P218 Requirements Specification. The Group considered these additional flows as follows:

- D0168 'Request for Additional/New MPAN Core(s)' - The Group noted that this flow would not be sent to or from the MEO. However it would be mandatory for the 'Additional Information' field to highlight that the flow relates to a portfolio MPAN. Therefore additional notes would need to be added to the DTC.
- D0132 'Request for Disconnection of Supply' – The Group noted that this flow would be used if a Supplier decided to disconnect a P081 MPAN. It was agreed that the 'Additional Information' field would be used to inform the DSO that the P081 MPAN was being disconnected as the site was moving to the P218 process; therefore notes would need to be added to the DTC.
- D0011 'Agreement of Contractual Terms' – Following receipt of an appointment flow from the Supplier, a NHHDC would normally reply with a D0011 flow, accepting the appointment. The Group noted that it may be possible to oblige the MEO to respond with a D0011. However, it was agreed that to keep the process simple, there would be no requirement on the MEO to send a D0011 flow. If the MEO believed it had received an erroneous appointment then it would contact the Supplier. In the absence of any query, the Supplier should assume the MEO had registered the portfolio MPAN.
- D0148 'Notification of Change to Other Parties' – It was noted that the P218 Requirements Specification had not set out how the MEO would know which NHHDA to send the D0019 to. Therefore the Group agreed that the Supplier would send the D0148 to the MEO informing it of the correct NHHDA.
- D0171 'Notification of Distributor Changes to Metering Point Details' – The Group noted that under the Proposed Modification the portfolio MPAN would be assigned to a LLFC, therefore there would be no need for the MEO to receive the D0171. Under the Alternative Modification it was noted that BSCCo would provide LLFC details to the MEO.
- D0203 'Rejection of Changes to Metering Point Details' – as for the D0171 above.
- D0151 'Termination of Appointment or Contract by Supplier'. The Group noted that a Supplier may want to deregister a portfolio MPAN if it no longer wished to use the P218 process. Therefore the Group agreed that the MEO should be added as a recipient of the D0151.

A full set of DTC flows impacted by P218 has been provided in Appendix 8.

3.8 *Costs/Benefit analysis of Microgeneration Settlement*

3.8.1 Costs

The Modification Group issued the P218 Requirements Specification for impact assessment by Parties, Party Agents, MRASCo, BSCCo, BSC Agents and the Transmission Company. The results of these impact assessments are provided below.

Party and Party Agent Costs:

Limited costs were provided by Parties and Party Agents. The Group noted some concerns over costs for NHHDA's (under the Proposed solution), however as the MEO would effectively be acting as a NHHDC, under a role code 'D', the Group reiterated their view that NHHDA impact and costs should be small.

Supplier costs ranged from a small Supplier verbally quoting a few thousand pounds to 3-4 million estimated costs from a large Supplier based on developing an automated process for settlement and other business systems. The Group noted that P218 was not compulsory and Suppliers could still opt not to settle microgeneration, in which case they would not be impacted by P218. However any Supplier currently settling using the P081 metered arrangements would have to adapt their systems and processes to support provision of information to the MEO regardless of whether or not they wished to use the P218 mechanism. Finally, those Suppliers wishing to use the P218 mechanism would need to put in place new systems and processes and may also need to handle moving between the current arrangements and a P218 solution. It was acknowledged that an automated solution would only be palatable for Suppliers where there was a critical mass of microgeneration that could be shown to actually be exporting. There is no confidence that anybody understands what that critical mass would be.

DSO Costs:

DSO respondents quoted costs ranging from £500 per year to £50-£100,000 to manage the processes. One respondent expressed concern that customers are not informing DSOs of installations currently and these arrangements could exacerbate the problem. However the Group noted that under P218 DSOs could request a list of registered microgeneration sites from the MEO, therefore the visibility of sites should not be reduced. The Group also noted that DSO costs related to the creation of portfolio MPANs and potentially the creation of an additional LLFC and its associated LLFs. Should P218 be implemented mid year i.e. at any time other than April, then the costs of creating a new LLFC may be higher.

ELEXON Costs:

ELEXON provided costs based on the implementation work and procurement of a new BSC Agent. The estimated costs are 126K with 50k for implementation and £76k for the procurement exercise (ELEXON also provided a cost estimate of procuring a new Service Provider, as opposed to BSC Agent, these costs were estimated at £62k). ELEXON asked for feedback from a Party Agent regarding the costs of set up and operation of a service of the type the MEO would provide. An estimate of up to £250k was suggested.

Central System costs:

Changes are required to SVAA based on the addition of new CCCs. The costs are estimated to be approximately £50k.

3.8.2 Benefits

The Modification Group discussed whether it would be possible to collate meaningful information to analyse the benefits of increasing the amount of microgeneration in Settlement. The Group recognised that P213 had not been approved due, in part, to the lack of justification of the perceived benefits of the additional process for settling microgeneration.

A number of respondents to the impact assessment took the opportunity to describe their concerns with the costs of introducing a second process to settle microgeneration when it has not been proved that the current processes are deficient nor is there evidence that microgeneration Export is being 'spilled'. The Group sympathised with this view and referred to the issue 2 discussions indicating that the current arrangements can work.

The Proposer set out the concerns that had led to the raising of P218. P218 is meant to be an interim solution pending the development of a long term solution based on either the development of new technology or resulting from a better understanding of the impacts of microgeneration as the population of sites increases. The cost of metering microgeneration seems prohibitive, therefore microgeneration is not being accounted for in Settlement. Any export greater than the on site demand must arguably be being spilled and used elsewhere. The benefit of this spilt energy is therefore going to the largest Supplier in the GSP Group. It was anticipated that a P218 solution would at least ensure some values entered Settlement, as opposed to potentially zero values. The Proposer noted that whilst the solution developed was correct to deliver the proposal, the impact assessments had shown it was more complicated than originally hoped.

The Group discussed a number of questions and concerns under the following themes:

- Is there any evidence that microgeneration is being spilled? If so, what is the impact?
- Is the issue that microgeneration needs to be promoted, if so, does it actually need to be settled?
- What is the 'critical mass' above which Suppliers would automate a solution to register and/or settle microgeneration?

The Group observed that there was still limited information regarding the impact of microgeneration on Settlement (within the UK). One impact assessment respondent made it clear that they believe settling volumes less than 400KW per annum is not currently economically efficient. This suggests that the earnings from these sites must be around £16 per year as this is the cost of metering and servicing the account. Another respondent suggested the problem lies in participant systems' inability to accept Export data rather than with the metering. The Group expressed sympathy with these comments and noted there is no evidence that microgeneration is having a detrimental impact on Settlement and that were it cost effective to do so, they would meter the volumes for Settlement purposes. The Group were concerned with quoted costs for implementing P218 given this lack of evidence. It was considered that a proper study into the impact of microgeneration on Settlement would be necessary to prove the impact on Settlement. This study would not be cheap to administer and there was a general feeling that this in itself would not be a cost effective exercise.

The Group considered the impact of P218 estimates on Settlement and for the reasons outlined above some members suggested that these volumes would not be better than the current perceived spill. Microgeneration can be unpredictable dependent upon the customer's load and the local conditions. Early discussions regarding the limited data upon which to base the Export Factors concluded that a non metered solution could exacerbate the issue of data quality as there would be no real data upon which to base any revised estimates.

The Group acknowledged that there is a desire to ensure the promotion of positive behaviours in respect of climate change and carbon saving requirements. However it is not felt that Settlement is a barrier to this goal and this can be achieved by the industry without further changes to Settlement.

3.9 *Alternative Modification*

The Group considered three potential alternative solutions. The Alternative solution which the Group are consulting upon is described below. The other two Alternatives were discarded by the Group prior to this consultation and are described in Appendix 7.

3.9.1 *Alternative Solution*

Proposed Modification P218 states that a new agent, the MEO, would create EACs for portfolio MPANs and submit these to the NHHDA so that they can be entered into Settlement via the normal processes. The Group noted that the requirement to create portfolio MPANs and manage the registration processes relating to these MPANs introduces complexity to the process for settling microgeneration. Therefore the Group considered a potential Alternative Modification whereby the MEO would calculate Annual Export values for microgeneration sites (as per the Proposed Modification). These values would then be aggregated into a Supplier Purchase Matrix (SPM) and submitted directly to the SVAA. As the SPM would not reference MPANs, there is no need for portfolio MPANs to be created under this solution. Data would be aggregated based on the Supplier, GSP Group, Distributor, Profile Class, SSC, TPR and Line Loss Factor Class (LLFC). Therefore it would be possible to apply separate SSCs to different microgeneration technologies if the Panel felt this was appropriate at a later date.

The Group concluded that this option would be less complex than the Proposed Modification as portfolio MPANs are not required and it would bypass the NHHDA systems and processes. Therefore the Group are considering this option as a potential Alternative Modification.

The P218 Requirements Specification sets out the differences between the Proposed and Alternative Modifications. The overall process is very similar to that set out above in section 3.1 with the following differences:

- Portfolio MPANs are not required therefore there is no interaction with the SMRS and no requirement for the MEO to hold MPAN data;
- EAC data is aggregated into a Supplier Purchase Matrix and submitted directly to the SVAA so there is no interaction with the NHHDA. The MEO would need to produce a D0041 'Supplier Purchase Matrix' flow rather than a D0019 flow;
- When creating the D0041, the MEO may need to include the correct SSC for the particular microgeneration technology. Therefore the MEO would need to determine SSC details for each microgeneration site;
- The creation and submission of SPM data would need to be undertaken in accordance with the Settlement Calendar; and
- The DSO would be required to inform BSCCo which SVA LLFCs should be applied to microgeneration sites in their area.

3.10 *Implementation Approach*

To implement P218, the MEO BSC Agent would be established through a procurement exercise undertaken by BSCCo. The new MEO would require software to calculate EACs and would maintain a database that registers the different microgenerators and portfolio MPANs. The MEO would also require a connection to the DTN.

In addition, the Implementation Date for P218 would need to be set to take into account the raising, progression and implementation of changes to SVAA, the DTC, the BSC and its subsidiary documents. Export Factors would need to be determined by the Panel and provided to the MEO prior to the Implementation Date. Suppliers and DSOs would also need to update their processes to ensure they can meet the new obligations introduced by P218.

Parties and Party Agents generally indicated that one year was required to implement P218 and the Group believes that the associated MRA changes (including any decisions required by the Authority) could be progressed within this timeframe.

Taking into account all the impact assessment responses, the proposed Implementation Date for P218 Proposed and Alternative Modifications is:

5 November 2009 should an Authority decision be received by 7 August 2008; OR

Or 4 February 2010 should an Authority decision be received after 7 August 2008 but before 13 November 2008.

This would allow implementation of P218 as part of a release. The Group did not consider that P218 should be implemented outside of a standard release.

P218 would be implemented such that Settlement systems and processes are capable of supporting portfolio MPANs from the Implementation Date. P218 would be implemented on a Settlement Day basis i.e. microgeneration sites could be registered on or after the Implementation Date with the Effective From Date of Implementation Date + 1 at the earliest. Data for registered sites would therefore enter Settlement at the SF Run for the Implementation Date + 1.

4 Assessment of Modification against Applicable BSC Objectives

This section outlines the initial views of the Modification Group regarding the merits of P218 against the Applicable BSC Objectives.

4.1 Proposed Modification

The initial **MAJORITY** view of the Modification Group was that the Proposed Modification **WOULD NOT** better facilitate the achievement of Applicable BSC Objectives (c) and (d) when compared with the existing Code baseline, for the following reasons:

Applicable BSC Objective c

- It was felt the proposed solution did not encourage greater uptake of microgeneration and no evidence was presented to suggest that it would actually be used;
- This was not the correct or cost effective mechanism to incorporate greater microgeneration into Settlement; and
- It does not encourage competition within the industry, however, it is acknowledged that some Suppliers may receive a benefit, attributed to their microgeneration customers.

Applicable BSC Objective d

- The proposed solution is inefficient and increases the level of error introduced into Settlement;
- It is over complicated and costly without increased efficiency; and

- By offering an additional option of P218 to the existing process of P081 and the option of spillage, the Group felt that numerous options further complicated the industry and could lead to confusion.

The initial **MINORITY** view of the Modification Group was that the Proposed Modification **WOULD** better facilitate the achievement of Applicable BSC Objectives (c) and (d) when compared with the existing Code baseline, for the following reasons:

Applicable BSC Objective c

- It was felt the proposed solution would encourage greater Settlement of microgeneration through the ability to settle without a Meter.

Applicable BSC Objective d

- The proposed solution would be more cost reflective as it allows appropriate volumes to be settled and therefore recorded against the correct Supplier, instead of being spilled.

4.2 Alternative Modification

4.2.1 Alternative Modification Compared with Proposed Modification

The initial **UNANIMOUS** view of the Modification Group was that the Alternative Modification **WOULD** better facilitate the achievement of Applicable BSC Objectives (c) and (d) when compared with the Proposed Modification, for the following reasons:

Applicable BSC Objective c

- A simpler process presented by the Alternative would better facilitate equitable competition to those wanting to settle microgeneration due to reduced impacts on Parties, Party Agents and the MRA.

Applicable BSC Objective d

- The Alternative solution requires fewer changes to existing processes and systems, simplifying the implementation and impact on the industry; and
- It would be cheaper to implement compared to the proposed solution.

4.2.2 Alternative Modification Compared with Existing Code Baseline

The initial **MAJORITY** view of the Modification Group was that the Alternative Modification **WOULD NOT** better facilitate the achievement of Applicable BSC Objectives (c) and (d) when compared with the existing Code baseline for the same reasons stated in section 4.1.

5 Terms Used In This Document

Other acronyms and defined terms take the meanings defined in the Code.

Acronym/Term	Definition
BSC	Balancing and Settlement Code
BSCP	Balancing and Settlement Code Procedure

Acronym/Term	Definition
CCC	Consumption Component Class
DTC	Data Transfer Catalogue
DTN	Data Transfer Network
EAC	Estimated Annual Consumption
FAA	Funds Administration Agent
GSP	Grid Supply Point
HH	Half Hourly
DSO	Distribution System Operator
LLF	Line Loss Factor
MEO	Microgeneration Export Operator
MOA	Meter Operator Agent
NHHDA	Non Half Hourly Data Aggregator
NHHDC	Non Half Hourly Data Collector
PAB	Performance Assurance Board
SAA	Settlement Administration Agent
SMRS	Supplier Meter Registration Service
SPM	Supplier Purchase Matrix
SSC	Standard Settlement Class/Configuration
SVAA	Supplier Volume Allocation Agent

6 Document Control

6.1 *Authorities*

Version	Date	Author	Reviewer	Reason for review
0.1	22/01/08	Change Delivery	BSCCo	For peer review
0.2	30/01/08	Change Delivery	P218 MG	For Modification Group review
0.3	05/02/08	Change Delivery	P218 Modification Group	For Modification Group review
1.0	11/02/08	P218 Modification Group	BSC Parties and other interested parties	For industry consultation

Appendix 1: Applicable BSC Objectives

For reference the Applicable BSC Objectives, as contained in the Transmission Licence, are:

- a The efficient discharge by the licensee [i.e. the Transmission Company] of the obligations imposed upon it by this licence [i.e. the Transmission Licence];
- b The efficient, economic and co-ordinated operation of the GB transmission system;
- c Promoting effective competition in the generation and supply of electricity, and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity;
- d Promoting efficiency in the implementation and administration of the balancing and settlement arrangements.

Appendix 2: Process Followed

Copies of all documents referred to in the table below can be found on the BSC Website at:
<http://www.elexon.co.uk/changeimplementation/ModificationProcess/ModificationDocumentation/modProposalView.aspx?propID=238>

Date	Event
23/10/07	Modification Proposal raised by Chris Welby
09/11/07	IWA presented to the Panel
12/11/07	First Assessment Procedure Modification Group meeting held
11/12/07	Second Assessment Procedure Modification Group meeting held
07/01/08	Third Assessment Procedure Modification Group meeting held
15/01/08	Requirements Specification issued for BSC Agent impact assessment
14/01/08	Request for Party/Party Agent impact assessments request issued
15/01/08	Request for Transmission Company analysis issued
15/01/08	Request for BSCCo impact assessment issued
25/01/08	BSC Agent impact assessment response returned
25/01/08	Party/Party Agent impact assessment responses returned
25/01/08	Transmission Company analysis returned
25/01/08	BSCCo impact assessment returned
30/01/08	Fourth Assessment Procedure Modification Group meeting held

ESTIMATED COSTS OF PROGRESSING MODIFICATION PROPOSAL ⁸	
Meeting Cost	£2,500
Legal/Expert Cost	£14,000
Impact Assessment Cost	£8,000
ELEXON Resource	154 man days £27,315

Please note the legal costs have increased compared with those contained within the IWA due to the use of external legal support for drafting the legal text.

Modification Group Membership

Member	Organisation	12/11/07	11/12/07	07/01/08	30/01/08
David Jones	ELEXON (Chair)	✓	✓	✓	✓
Dina Solanki	ELEXON (Lead Analyst)	✓	-	✓	✓
Chris Welby	Good energy (Proposer)	✓	✓	✓	✓
Craig Maloney	National Grid	✓	-	-	-
Graham Smith	Western Power	-	✓	✓	✓
Cher Harris	Scottish and Southern	✓	✓	✓	✓
Tim Roberts	Scottish Power	✓	✓	✓	✓
Seth Chapman	AccuRead	✓	✓	✓	✓
Louisa Stuart-Smith	npower	✓	✓	✓	✓
Colette Baldwin	E.ON	✓	✓	✓	✓

Attendee	Organisation	12/11/07	11/12/07	07/01/08	30/01/08
Victoria Arr	Ofgem	✓	✓	✓	✓
Nigel Nash	Ofgem	✓	✓	-	
Anna Kulhay	Ofgem	-	-	-	✓
Jill Ashby	MRASCo	-	✓	✓	-
Brendan McGarry	MRASCo	-	-	-	✓
Andrew Blackett	Good Energy	-	✓	-	-

⁸ Clarification of the meanings of the cost terms in this appendix can be found on the BSC Website at the following link:
http://www.elexon.co.uk/documents/Change_and_Implementation/Modifications_Process_-_Related_Documents/Clarification_of_Costs_in_Modification_Procedure_Reports.pdf

Attendee	Organisation	12/11/07	11/12/07	07/01/08	30/01/08
Sarah Jones	ELEXON (Design Authority)	✓	✓	✓	✓
Helen Boothman	ELEXON	✓	✓	✓	✓

Modification Group Terms Of Reference

The Modification Group shall consider the following topics as deemed appropriate:

- Details of the Proposed Solution.
- Potential methods for calculating EACs for Microgeneration.
- Current Microgenerators in Settlement and the impact of P218 on existing generators if any.
- Status of Microgeneration Export Operator within the industry.
- Auditing and Qualification of the new Microgeneration Export Operator.
- Processes required to ensure effective Change of Suppliers.
- Master Registration Agreement (MRA) and the impacts to their processes.
- Benefit/Costs analysis of Microgeneration Settlement.

Appendix 3: Results of Impact Assessment

a Impact on BSC Systems and Processes

System / Process	Impact of Proposed Modification	Impact of Alternative Modification
SVAA	The SVAA software would need to be amended to account for the new CCCs and to ensure that the portfolio Export MPAN data is entered into Settlement correctly. The SVAA would need to apply an unrestricted SSC and Profile Class 8 to calculate Half Hourly values.	The impact on SVAA would be the same as the Proposed Modification. In addition, the SVAA may need to apply microgeneration technology specific SSCs to calculate Half Hourly values. Also, the SVAA system would need to accept the D0041 file from the MEO.
New Microgeneration Export Operator	A new BSC Agent would need to be procured to undertake the role of MEO. This agent would need to store information regarding microgeneration sites registered under the P218 process and also portfolio MPAN data. In addition, the MEO would need to develop an EAC calculator and would need software to create DTC flows such as the D0019 which would need to be transmitted via the DTN. Finally the MEO would need to communicate with various Suppliers regarding registration and deregistration of microgeneration sites and portfolio MPANs, and where necessary,	As per the Proposed Modification, apart from the following: the MEO would not need to store information regarding portfolio MPANs as these would not be created; the MEO would need to create D0041 files for submission to the SVAA rather than D0019 files; and the MEO would not need to communicate with Suppliers regarding portfolio MPAN registration.

System / Process	Impact of Proposed Modification	Impact of Alternative Modification
	search the ECOES database for duplicate sites.	

Copies of the full BSC Agent impact assessments are attached as separate documents, Attachment 3.

b Impact on BSC Agent Contractual Arrangements

BSC Agents	Impact of Proposed and Alternative Modifications
Cap Gemini (SVAAO)	It is not anticipated that this contractual agreement would be effected by P218, but it is subject to change, depending on the extent of amendments required to the SVAA system.
PwC (BSC Auditor)	As a new BSC Agent, the MEO systems and processes would be added to the scope of the BSC Audit.
Technical Assurance Agent	It is not anticipated that this contractual agreement would be effected by P218, although additional TAA checks may be required.
New MEO Agent	BSCCo would be required to procure, establish contracts and manage a new BSC Agent.

c Impact on BSC Parties and Party Agents

As the P081 and P218 processes are expected to run parallel with each other, the impact on existing Suppliers will depend on whether they chose to register microgeneration in Settlement, and if so, which process they intend to follow. Should a Supplier choose to register microgeneration using the P218 process then the impact on their systems and processes is detailed below. Some Supplier processes would need to manage two different arrangements and the change of Supplier processes would need to allow for smooth transfer between the arrangements of P081 and P218. New obligations would also be placed on Suppliers choosing to register P081 Export MPANs to reduce the risk of duplicate registrations. NHH Supplier Agents would need to amend their processes to enable them to process portfolio MPAN data.

BSC Parties and Party Agents	Impact of Proposed Modification	Impact of Alternative Modification
Suppliers	Suppliers wishing to use the P218 process would need to communicate with the MEO regarding registration and deregistration of microgeneration sites. Suppliers would also need to register portfolio MPANs with SMRS. Suppliers would be obliged to deregister microgeneration sites when they are no longer responsible for the Export. In addition, all Suppliers would be obliged to inform the MEO when they wish to register a microgeneration Export MPAN under the current P081 rules.	As per the Proposed Modification, except Suppliers wishing to use the P218 process would not be required to register portfolio MPANs.
Distribution System Operator (DSO)	DSOs would need to create portfolio MPANs on request from a Supplier. In addition DSOs may	As per the Proposed Modification. Note –

BSC Parties and Party Agents	Impact of Proposed Modification	Impact of Alternative Modification
	need to create a LLFC for portfolio Export MPANs and submit LLFs for approval through the current process.	BSCCo would need to inform the MEO which LLFCs to use within the SPM.
Supplier Registration (SMRS) Meter System	SMRS would need to register portfolio MPANs on request from a Supplier.	There would be no impact on the SMRS as no portfolio MPANs are created.
NHHDA	Only NHHDA which have been contracted by Suppliers wishing to use the P218 process would be affected by this Modification. Affected NHHDA would need to accept D0019 data from the MEO. As this information should look as though it has been submitted by a normal NHHDC, it is not anticipated that there would be any changes required to NHHDA systems and processes.	NHHDA would not be affected by P218 Alternative Modification.
Meter Operators and Data Collectors	Meter Operators and Data Collectors would not be affected by P218.	As per Proposed Modification.

Full copies of the Party and Party Agent impact assessment responses are attached as a separate document, Attachment 4.

d Impact on Transmission Company

No impact.

e Impact on BSCCo

Area of Business	Impact of Proposed and Alternative Modifications
Implementation	BSCCo would be required to implement changes to the Code, Code Subsidiary Documents (CSDs) and BSC Systems to support this Modification Proposal.
Procurement	BSCCo would be required to procure a new BSC Agent to undertake the role of MEO.
LLF processing	Under Alternative Modification solution 2, BSCCo would be required to send the MEO details of the LLFC to be used in the SPM for each GSP Group/Distributor.
BSC Panel processes	The BSC Panel would be required to approve Export Factors to be used in the calculation of microgeneration Export EACs. BSCCo would facilitate this process and undertake reviews of the process where requested by the Panel. BSCCo would also ensure that the approved Export values are published on the BSC website and sent to the MEO.
Market Domain Data (MDD)	Under the Proposed Modification, the MEO would be registered in MDD as a NHHDC and potentially a MOA.

Area of Business	Impact of Proposed and Alternative Modifications
	Therefore there would be additional information contained within MDD as a result of P218. However it is assumed that these new data items would be added via the current processes set out in BSCP 509 'Changes to Market Domain Data', therefore no changes to the actual systems would be required.
Performance Assurance	The PAB would be required to ensure that the Suppliers are fulfilling their obligations by updating the MEO with the appropriate information in a timely manner and that the audit trail of information between the Supplier and Customers are maintained. The actual technique required is yet to be agreed.

f Impact on Code

Code Section	Impact of Proposed and Alternative Modifications
Section E	Amendment to reflect new BSC Agent role.
Section J	Amendment to reflect the fact that NHHDCs and MOAs are not required for portfolio MPANs.
Section K	Amendment to reflect the fact that microgeneration Exports would not need to be metered.
Section L	Amendment to reflect the fact that microgeneration Exports would not need to be metered.
Section S, Annex S-2	Amendment to include the role of MEO and the rules for registering microgeneration sites and calculating the EAC for Export portfolio MPANs. Additional obligations to be added for Suppliers to deregister microgeneration sites for which they are no longer responsible. Also an obligation on all Suppliers should be added to inform the MEO when registering a P081 Export MPAN.
Section X, Annex X-1, X-2	Amendment to the General and Technical Glossary section would be required to represent the Proposed/Alternative Solution. This would include the addition of new CCCs to table 8 in Annex X-2.
Section Z	Amendment to reflect any new assurance requirements.

g Impact on Code Subsidiary Documents

Document	Impact of Proposed Modification	Impact of Alternative Modification
New Microgeneration Export Operator BSCP	A new BSCP would need to be produced setting out the role of the MEO and the processes to be followed relating to registration and	Same as Proposed Modification, except the BSCP would not contain reference to portfolio

Document	Impact of Proposed Modification	Impact of Alternative Modification
	deregistration of microgeneration sites and portfolio MPANs.	MPANs.
New Microgeneration Export Operator Service Description	As the MEO would be a new BSC Agent, then a new Service Description would be required setting out the roles and responsibilities of the MEO.	Same as the Proposed Modification except the BSCP would not contain reference to portfolio MPANs.
BSCP 01 Overview of Trading Arrangements	This BSCP would be amended to add the MEO as a new BSC Agent.	Same as Proposed Modification.
BSCP504 Non Half Hourly Data Collection for Metering Systems Registered in SMRS	Possible minor change to ensure that NHHDCs are not obliged to calculate EACs for portfolio MPANs	No impact.
BSCP 505 Non Half Hourly Data Aggregation for SVA Metering Systems Registered in SMRS	Possible minor change to ensure that NHHDCs would process D0019 files received from the MEO.	No impact.
BSCP 507 Supplier Volume Allocation Standing Data Changes	Possible minor change to account for the registration of portfolio Export MPANs.	No impact.
BSCP 508 Supplier Volume Allocation Agent	Possible minor change to describe the relationship between the MEO and SVAA.	Same as Proposed Modification.
BSCP 514 SVA Meter Operations for Metering Systems registered in SMRS	Possible minor change.	No impact.
BSCP 516 Allocation of Profiles & SSCs for Non Half Hourly Metering System Registered in SMRS	This BSCP would be amended to describe allocation of Profile Classes and SSCs applied to portfolio Export MPANs in Settlement.	This BSCP would be amended to describe allocation of Profile Classes and SSCs to microgeneration data in the SPM.
BSCP 528 Supplier Volume Allocation Line Loss Factors for Half Hourly and Non-Half Hourly SVA Metering Systems registered in SMRS	Possible minor change to account for the LLFC applied to the microgeneration.	This BSCP would be amended to describe how Distributors would be required to indicate to BSCCo which LLFCs would need to be applied to microgeneration.
PSL100	Possible minor generic amendment to PSL100.	Same as Proposed Modification.
SVA Data Catalogues	The Data Catalogues would be amended to reflect changes to the recipients of certain data flows and also the new data flows required for communication with the MEO.	Same as Proposed Modification.
SVAA Service Description	The SVAA Service Description would need to be amended to take	Same as Proposed Modification.

Document	Impact of Proposed Modification	Impact of Alternative Modification
	into account the new CCC and the process that the SVAA would follow to ensure microgeneration data is accurately entered into Settlement.	
SVAA User Requirements Specification	The SVAA URS would need to be amended to reflect the changes to the SVAA processes.	Same as Proposed Modification.
SVAA (ISRA) Functional Definition	The SVAA Functional Definition would need to be amended to reflect the changes to the SVAA processes.	Same as Proposed Modification.
SVAA (ISRA) Logical Data Design	The SVAA Logical Data Design would need to be amended to reflect the changes to the SVAA processes.	Same as Proposed Modification.
SVAA (ISRA) Release Notes	The SVAA Release Notes would need to be amended to reflect the changes to the SVAA processes.	Same as Proposed Modification.
SVAA (ISRA) Technical Specification	The SVAA Technical Specification would need to be amended to reflect the changes to the SVAA processes.	Same as Proposed Modification.
BSCCo Agents model	Amendments required if software changes are undertaken.	Same as Proposed Modification.

h Impact on Core Industry Documents/System Operator-Transmission Owner Code

Document	Impact of Proposed Modification	Impact of Alternative Modification
Master Registration Agreement	DTC changes would be required to enable new DTC flows to be created for communication between the Supplier and MEO. The recipients of a number of current DTC flows would also need amending to add the MEO to the list. Some changes would also need to be made to the MRA itself, in particular the definition of a Metering Point and Clause 15. These changes are Priority Provisions of the MRA and would therefore require Authority consent.	As per the Proposed Modification although the flows affected would differ.

Copies of the full MRASCo impact assessment is attached as a separate document, Attachment 4.

i Impact on Other Configurable Items

No impact.

j Impact on BSCCo Memorandum and Articles of Association

No impact.

k Impact on Governance and Regulatory Framework

No impact.

Appendix 4: P218 Data Analysis

The following analysis looks at the volume error and profiling error that would be created by the Proposed and Alternative solutions. Volume error would be created when using export factors to calculate EACs. This analysis considers the difference in the error created by using:

- different export factors for each technology type and;
- one export factor for all technology types.

Regarding profiling error, this analysis looks at the difference in error between using the current P81 profiling solution and using an unrestricted Profile Class 8 profile for all technology types.

The tables referred to below are within the Excel spreadsheet to which this explanatory note is attached.

Export Factor Analysis

The data used for this analysis was taken from the British Electrotechnical and Allied Manufacturers (BEAMA) trial. Only those sites with a full year of export data were included as actual export totals for the whole year were needed. Four wind sites and fifteen photovoltaic (PV) sites with differing generation capacities and 19 micro combined heat and power (CHP) sites all with a generation capacity of 1kW were used.

Assumption 1: The data used is a representative sample of the microgeneration sites in GB.

Description of Tables

Table 1.1 shows the export factors calculated for each technology type and the general microgeneration export factor. The technology specific export factors were calculated by summing the total amount of export across all the sites and dividing it by the total maximum generation across all the sites. The general microgeneration export factor was calculated as a weighted average of the previously calculated export factors. The weightings were determined from a table contained in the government's microgeneration strategy published in March 2006:

Technology	No. Installations
Micro-wind	650
Micro-hydro	90
Ground source heat pumps	546
Biomass boilers (pellets)	150
Solar water heating	78,470

Solar PV	1,301
MicroCHP	990
Fuel Cells	5
Total	82,202

Assumption 2: The proportions in the above table are the same as the proportions of sites that would be entering Settlement.

Table 1.2 contains the following information for each site used in the analysis:

Generation Capacity	The kWh value of the sites declared generation capacity
Actual Export	The kWh values of the energy exported from the site over the whole year
Individual Export Factor	The percentage value of the energy exported calculated by dividing the actual export by the maximum generation: $(\text{Actual export} / (\text{generation capacity} * 365 * 24)) * 100$
Technology Specific EAC	The EAC value that would be submitted to Settlement if the technology specific export factors in table 1.1 were used: $\text{generation capacity} * 24 * 365 * \text{technology specific export factor}$
% Difference	The percentage difference between the technology specific EAC and the actual export
Error	The volume difference in kWh between the technology specific EAC and the actual export
Non-Technology Specific EAC	The EAC value that would be submitted to Settlement if the general microgeneration export factor in table 1.1 were used: $\text{generation capacity} * 24 * 365 * \text{general microgeneration export factor}$
% Difference	The percentage difference between the non-technology specific EAC and the actual export
Error	The volume difference in kWh between the non-technology specific EAC and the actual export

Table 1.3 is a gross error comparison between using the technology specific and the non-technology specific export factors. It contains the total gross error across all the sites for each technology type for both export factors and the totals. The last two columns are the errors per site (the first two columns divided by the amount of sites). The 'TOTAL' row for these columns contains the total errors per site (the values in the first two columns divided by the total number of sites) and not the sum of the above rows.

Table 1.4 is a net error comparison between using the technology specific and the non-technology specific export factors. It contains the net error across all the sites for each technology type for both export factors and the totals. The last two columns are the errors per site (the first two columns divided by the amount of sites). The 'TOTAL' row for these columns contains the total errors per site (the values in the first two columns divided by the total number of sites) and not the sum of the above rows.

Outcomes

The gross error is greater when using the technology specific export factors, this seems counter intuitive. The probable cause is the sample size and the variance of the sample. These factors combined mean that removing any outliers (values showing significant deviation from the main sample) would be a very subjective process and is not really appropriate. When the weighted average is taken the effects of any outliers is reduced.

The net error is the opposite of this with the technology specific export factors yielding less error. This is not that statistically significant though as the export factors were calculated from a sample and then applied back to the same sample as the population. Although it is expected that using site specific export factors would in practice (when applied to the whole market) give a lower net error, the difference proportionally between the two solutions may be very different. To give a better indication of the net error an out of sample test could be used. This involves using most of the sample to create the export factor and then relating it to the rest of the sample to determine the error. This would mean that the sample was not also being treated as the population. There is not enough data here however to make this a valid approach.

One thing to note is the relatively low error for the micro CHP calculations. This may be due to two factors:

- All the sites in the sample have the same generation capacity meaning the same weight was given to each site in the calculation and/or;
- Micro CHP export is more predictable (generally the generation will correlate to the customers demand) and therefore more uniform.

Profiling Error Analysis

The data used for this analysis were all the sites in the BEAMA trial with export data. An average profile was created for each technology by taking an average of the volume in each half hour. It is worth noting that a different amount of sites were used to create the average profile for each technology. Generally, the more sites used in the average, the flatter the profile would be as erratic export would be smoothed over when averaged over more sites. For this analysis the same profiles were used to compare each profiling solution. As it is the comparison that is being looked at this averaging shouldn't be an issue. However, the percentage of misallocated energy would tend to be higher for individual sites than is shown here for the average profile for this reason.

Assumption 3: The profiles calculated are representative of the profiles of all sites of that technology.

Description of Tables

Table 2.1 shows the energy misallocated when using each profiling solution. The left hand side of the table shows the energy misallocated for each of the average profiles and the total misallocated energy. The total percentage figure is calculated using the total volumes. On the right hand side of

the table the data is weighted in the same proportions as the table taken from the government's microgeneration strategy above.

Table 2.2 shows the imbalance costs associated with the misallocated energy when the volumes are related to the system prices. The Settlement error cost in £/MWh is calculated by dividing the net charge by the appropriate total volume taken from table 2.1.

Outcomes

The percentage of misallocated energy when using separate Standard Settlement Configurations (SSC) is the current level of profiling error under the P81 solution. The increase in error if switching to the PC8 unrestricted solution is 7.4%. However, as stated above, the fact that these are averaged profiles means that the error of individual sites may be higher (or in some cases lower) in reality and so the difference between the two solutions may also differ. The analysis is based on the assumptions above.

Regarding the imbalance costs calculated, the fact that the separate SSCs solution comes out at a higher cost is again counter intuitive. The reason for this anomaly is that the system prices are highly variable and the outcome will just depend on the price allocated to those half hours where more energy is misallocated. Presumably more error will be misallocated over night using the PC8 unrestricted solution when prices would be on average lower. These costs would vary depending on which time period and therefore prices were used. The analysis also make assumptions that a Supplier is perfectly in balance before the inclusion of the microgeneration sites and also that they're the only Supplier operating in that GSP Group (as the misallocation will come out in the GSP Group Correction Factor).

ATTACHMENT 1 P218 ANALYSIS SPREADSHEET

Appendix 5: P218 Scenarios

The following scenarios detail the process that would be required for Change of Supplier and for switching between the arrangements under P218 (portfolio MPAN) and P81 (two-MPANs plus physical meter).

It should be noted that the scenarios do not separate out situations under P81 where the site has one meter compared to the site having two meters as this is not impacted by the implementation of P218. Therefore reference to meter under P81 could also be taken to refer to meters.

The scenarios detailed below are based on the Proposed Modification i.e. one portfolio MPAN per Supplier, per GSP Group, per Distributor. Alternative Solution 1 would be very similar although only one of the Suppliers portfolio MPANs in the GSP Group would be impacted by any change. This would introduce added complication as the parties would need to ensure that the correct portfolio MPAN was affected.

The scenarios are listed below:

- a) P218 solution (portfolio MPAN) to P81 solution (actual MPAN) **no** Change of Supplier (CoS);
- b) P218 solution (portfolio MPAN) to P81 solution (actual MPAN) **with** Change of Supplier (CoS);
- c) P081 solution (actual MPAN) to P218 solution (portfolio MPAN) no Change of Supplier;
- d) P081 solution (actual MPAN) to P218 solution (portfolio MPAN) **with** Change of Supplier;
- e) P218 solution with Change of Supplier;

- f) P218 solution to Microgeneration Export not registered no Change of Supplier; and
- g) P218 solution to Microgeneration Export not registered with Change of Supplier

1. P218 – P81 no CoS

A single site would need to be removed from the Supplier's portfolio Export MPAN in the relevant GSP Group. The Supplier would need to inform the MEO so that a new EAC is calculated for the relevant portfolio MPAN and submitted into Settlements.

The Supplier would have to set up a new MPAN and appoint a MOA, NHHDC and NHHDA of its choice. The NHHDC would need to be provided with an appropriate EAC for the MPAN. The initial EAC would be zero in line with the rules set out under P81 where the Profile Class Average EAC for new Export MPANs is set to zero until actual metered data is received. The Supplier may also need to install a Meter if there is not already an appropriate Meter on site. If there is only one Meter recording Import and Export separately, then the Supplier would need to ensure that the same MOA is appointed to both Import and Export MPANs.

2. P218 – P81 with CoS

A single site would need to be removed from a Supplier's portfolio and hence removed from the Supplier's portfolio Export MPAN in the relevant GSP Group. The old Supplier would need to inform the MEO so that a new EAC is calculated for the relevant portfolio MPAN and submitted into Settlements.

The new Supplier would have to set up a new MPAN and appoint a MOA, NHHDC and NHHDA of its choice. The NHHDC would need to be provided with an appropriate EAC for the MPAN. The initial EAC would be zero in line with the rules set out under P81 where the Profile Class Average EAC for new Export MPANs is set to zero until actual metered data is received. The new Supplier may also need to install a Meter if there is not already an appropriate Meter on site. If there is only one Meter recording Import and Export separately, then the new Supplier would need to ensure that the same MOA is appointed to both Import and Export MPANs.

It is assumed that the Import MPAN would also be transferred, however this process would be carried out separately following the current CoS rules.

3. P81 - P218 no CoS

Under this scenario the Supplier would need to disconnect the Export MPAN and ensure that the site is added to its portfolio Export MPAN. Note that this is only logical disconnection, there is no requirement for the Meter to be physically removed. The Supplier would need to obtain information regarding the Microgenerator capacity and possibly the type of technology and inform the MEO so that the EAC for the portfolio MPAN can be recalculated taking into account the new site.

4. P81 – P218 with CoS

Under this scenario the old Supplier would be responsible for disconnecting the Export MPAN, therefore only the Import MPAN would be transferred to the New Supplier using the current CoS process. The old Supplier would disconnect the Export. The new Supplier would need to obtain information regarding the Microgeneration Capacity and possibly the type of technology from the customer. The new Supplier would provide this information to the MEO for calculation of the EAC.

5. CoS only – under P218

A single site would need to be removed from the old Supplier's portfolio and hence removed from the old Supplier's portfolio Export MPAN in the relevant GSP Group. The old Supplier would need to inform the MEO so that a new EAC is calculated for the relevant portfolio MPAN and submitted into Settlements. The new Supplier would need to obtain information regarding the Microgeneration Capacity and possibly the type of technology from the customer.

The new Supplier would need to inform the MEO so that the EAC for its portfolio Export MPAN is recalculated taking into account the new site.

It is assumed that the Import MPAN would also be transferred, however this process would be carried out separately following the current CoS rules.

6. P218 – Microgeneration Export not registered

Under this scenario the Supplier would decide not to register the Microgeneration Export within Settlements any longer. The Supplier would simply need to inform the MEO who would remove the site from its portfolio Export MPAN in the relevant GSP Group. The MEO would also need to calculate a new EAC for the relevant pseudo MPAN and submit it into Settlements.

7. P218 – Microgeneration Export not registered on CoS

Under this scenario the new Supplier would decide not to register the Microgeneration Export within Settlements and take no action other than transfer the Import MPAN using current processes. The old Supplier would need to remove the site from its portfolio Export MPAN in the relevant GSP Group. The old Supplier would need to inform the MEO so that a new EAC is calculated for the relevant portfolio MPAN and submitted into Settlements. If the new Supplier were not aware of the site having Export then this process could accidentally happen on CoS.

Key to diagrams:

The diagrams show three streams; the main process steps in the centre; the key issues on the right and indication of either new or existing process on the left of the page. Significant issues are shown in red. DTC flows are shown in green.

Terms:

MPANI	= Import only MPAN
MPANE	= Export only MPAN
S1	= Old Supplier
S2	= New Supplier
MEO	= Microgeneration Export Operator
MOA	= Meter Operator Agent
NHHDA	= Non Half Hourly Data Aggregator
NHHDC	= Non Half Hourly Data Collector
SMRS	= Supplier Meter Registration Service

Key assumptions:

- The diagrams have assumed that the same Supplier is taking both the Import and Export site. However the same process would be followed if the Import and Export are transferred to different Suppliers.
- It is assumed that one central MEO will be created. This MEO can therefore check whether a site is already registered to another Supplier when it receives a request to register an Export site. If it is registered to another Supplier, the MEO can check that the other Supplier is requesting removal of this site from its portfolio MPAN.
- There will be an obligation on Suppliers to remove an Export site from its portfolio MPAN when it is no longer responsible for that site. It is therefore assumed that the MEO will not do any additional checks when it receives a request from a Supplier to remove a site from its portfolio MPAN i.e. the MEO will not check that the site is being registered elsewhere.

- It is assumed that the rules relating to the registration of Export MPANs will not change e.g. a new Export MPAN will be assigned a zero EAC until actual metered date is received.

ATTACHMENT 2 P218 SCENARIO DIAGRAMS

Appendix 6: MEO Processes for Registration/Deregistration

Microgeneration Registration (and Change of Supplier)

The microgeneration registration process described below is based on the current process followed by SMRS for registering MPANs. However, the process has been simplified in places due to the lower number of microgeneration sites expected to be registered by the MEO compared to the number of MPANs registered in SMRS. This section sets out the process to be followed by the MEO. Appendix 2 shows the high level registration process to be followed in various scenarios e.g. change of Supplier.

- A Supplier wishing to register a new microgeneration site would need to send details to the MEO using a new DTC flow (Microgeneration Registration Details). It is envisaged that this flow would include the registration details listed in section 2.1.1 above together with an 'event indicator' field, stating that the flow relates to a new registration. As the Supplier may not know whether the site is a completely new registration, or a change of Supplier registration then these are given the same event indicator and treated the same by the MEO.
- A new site can only be registered with the MEO for effective days between 1 and 28 calendar days into the future. No retrospective registrations would be allowed. The MEO should initially check that this requirement has been met, and if not, then the MEO would reject the registration flow.
- The MEO would then:
 1. Check that a site with the same address⁹ and Import MPAN¹⁰ (where provided) was not already registered within its database to a different Supplier.
 - If the site was registered to a different Supplier then the MEO would contact that Supplier (using a new Deregistration Notification flow) to inform the current Supplier that the site is being transferred to a new Supplier.
 - Within 5 Working Days the current Supplier should either send a new 'Microgeneration Registration Details' flow to the MEO deregistering the site or an 'Objection' flow stating that it does not believe the site should be transferred. An objection can only be made if the current Supplier believes that they have a commercial contract in place with the Customer.
 - Should the MEO receive nothing from the current Supplier within 5 Working Days, then the MEO would progress the transfer i.e. the new Supplier would be assigned to the microgeneration site from the relevant effective from date. The MEO would also recalculate the EAC for both the old Supplier and the new Supplier's MPANs and send the revised EACs to the relevant NHHDA.

⁹ The Group agreed that only one Supplier could register microgeneration for one specific address. Therefore if there are a number of microgenerators at one address, they could only be registered under the P218 solution if they have the same Supplier.

¹⁰ The technology and capacity information will be available if additional information is required.

- Should the MEO receive a request from the current Supplier to deregister the site, then the MEO would progress the transfer i.e. the new Supplier would be assigned to the microgeneration site from the relevant effective from date. The MEO would also recalculate the EAC for both the old Supplier and the new Supplier's MPANs and send the revised EACs to the relevant NHHDA.
 - Should the MEO receive an 'Objection' flow, then the MEO would not progress the transfer. The MEO would forward the 'Objection' flow to the new Supplier and the Suppliers would be responsible for resolving the issue. There would be no requirement for the Supplier to withdraw the objection; the new Supplier would simply submit a new registration flow once the issue was resolved.
2. If a site with the same address and Import MPAN was not already registered within its database, then the MEO would check whether an Export MPAN has been registered on ECOES with the same address.
- If an Export MPAN is already registered on ECOES then the MEO would contact that Supplier (using a new Deregistration Notification flow) to inform the current Supplier that the site is being registered to a new Supplier.
 - Within 5 Working Days the current Supplier should de-energise the Export MPAN or send an 'Objection' flow stating that it does not believe the site should be transferred. An objection can only be made if the current Supplier believes that they have a commercial contract in place with the Customer.
 - Should the MEO receive nothing from the current Supplier within 5 Working Days, then the MEO would register the site to the new Supplier. The MEO would also recalculate the EAC for the new Supplier's MPAN and send the revised EAC to the relevant NHHDA.
 - Should the MEO receive an 'Objection' flow, then the MEO would not progress the transfer. The MEO would forward the 'Objection' flow to the new Supplier and the Suppliers would be responsible for resolving the issue. There would be no requirement for the Supplier to withdraw the objection; the new Supplier would simply submit a new registration flow once the issue was resolved.
3. If a site with the same address and Import MPAN was not already registered within its database or on ECOES, then the MEO would add the site and calculate a new EAC for the relevant MPAN and submit this to the relevant NHHDA.
- In addition to the above, on receipt of a registration flow for a site, the MEO would 'lock' the record to prevent a potential third Supplier from attempting to register the site whilst the MEO checks are being carried out. The record would be 'locked' to prevent further registration requests from being processed within 10 Working Days of the initial request. Any registration requests received within the 'locked' period would be rejected by the MEO with the reason for rejection provided.
 - Also whilst a Supplier's registration is pending, the MEO would reject any further registration requests with an effective date up to and including the effective date of the initial registration for the same site. For example if Supplier A submits a registration flow to become effective in 28 days time; Supplier B cannot register the same site with the same (or earlier effective date).

Microgeneration Deregistration

- A Supplier wishing to deregister a microgeneration site would need to send details to the MEO using a new DTC flow (Microgeneration Registration Details). It is envisaged that this flow would include the registration details listed in section 2.1.1 above together with an 'event indicator' field, stating that the flow relates to deregistration. The Supplier should include an Effective To Date on the flow to indicate that it relates to a deregistration. The Supplier can not deregister a site more than 28 days in the future. In addition the Supplier must include a reason for deregistration in the 'Additional Information' field.
- The MEO would confirm that the relevant site was registered to that Supplier.
- If the site was not registered to that Supplier then the MEO would reject the flow.
- If the site was registered to that Supplier then the MEO would remove reference to the Supplier from the relevant microgenerator record for the effective from date specified in the deregistration flow – the Supplier and MPAN fields would be set to the given Effective To Date.
- The MEO would also confirm whether there are any pending registration requests in relation to the specific site. If there are pending registrations, then the MEO would forward the deregistration flow to the potential new Supplier. The new Supplier could then check that they are still in a position to take over responsibility for the site.
- The MEO would then calculate a new EAC for the relevant MPAN and submit this to the relevant NHHDA.

Registration Updates

Suppliers may, from time to time, send updated registration details to the MEO via the new microgeneration registration flow. The MEO would be required to update the registration data within 1WD and if necessary send updated EACs to the NHHDA. Changes to data can only be made retrospectively to cover the last 14 months. Changes would only be made to registration data relating to the Supplier informing the MEO of the change. If the site has been the subject of a change of Supplier, then the records relating to other Suppliers would not be amended.

Appendix 7: Alternative Solutions Discarded by the Group

Portfolio MPANs for technology type:

Proposed Modification P218 allows Suppliers to register a single portfolio MPAN for each GSP Group and Distributor. This means that a single EAC would be calculated estimating the Export for one or more microgenerators, and that a single set of registration data would be assigned to the MPAN. Part of the registration data for any MPAN is the Profile Class, the SSC and the Time Pattern Regime (TPR). Together these pieces of information allow the SVAA to profile the energy for a particular MPAN across different half hourly periods. Under Proposed Modification P218 a single portfolio MPAN is created which may have microgenerators with different technologies assigned to it. However these would all have to have the same Profile Class, SSC and TPR as they are aggregated together under a single MPAN.

The Group therefore considered whether it would be more appropriate to allow separate portfolio MPANs to be created for different microgeneration technologies. These separate MPANs could then be assigned Profile Classes, SSCs and TPRs that more accurately reflect the profile of Export e.g. the portfolio MPAN representing solar energy could be profiled so that there is no Export

during the night. SSCs for different microgeneration technologies already exist in MDD as they are used for registering P081 Export MPANs under the existing process. It was noted that a single Profile Class (8) would still be applied to all portfolio MPANs as this would be the flattest profile available.

The Group carried out analysis to see whether a significant profiling error would be introduced by aggregating a number of different microgeneration technologies together under one portfolio MPAN. The results of this analysis are contained in Appendix 4. The results showed the percentage of energy misallocated when using separate SSCs (i.e. the current level of error under the P081 solution) compared with the percentage of energy that would be misallocated if a flat unrestricted SSC were to be applied to all portfolio MPANs. The Group noted that there was an overall increase in profiling error of 7.4% when moving to an unrestricted SSC, although this was not a significant increase in error considering the profiling error itself was already approximately 50%.

The Group considered a potential Alternative Modification that allows the Panel to determine, at a later date, that separate portfolio MPANs for different microgeneration technologies may be created if more data became available that indicated the profiling error was worse than anticipated. However after the Group had discussed the impact assessments it was agreed to progress with a single Alternative. The Group felt that the Alternative that removed the requirement for portfolio MPANs was more efficient than this solution and agreed to consult on that Alternative only.

Portfolio MPANs with individual registers:

As set out above, the Group were aware that the requirement to have a single portfolio MPAN per GSP Group, per Distributor would mean that only one SSC could be applied to that MPAN. This would therefore increase the profiling error for microgeneration sites compared with the current situation. The Group therefore considered an alternative solution where separate EACs would be created for different technology types. Although these would be assigned to a single portfolio MPAN, they would be treated as if they were individual registers for a single Meter. Therefore the SVAA would be able to identify the EACs for different microgeneration technologies and apply a specific SSC. This SSC would be included in a substitution table which would indicate the actual SSC to be applied to the different EACs. The Group concluded that although this would minimise the profiling error, it would require a change to the SVAA software and therefore the potential cost of this change outweighed the perceived benefit in terms of profiling error. The Group therefore agreed not to pursue this option further.

Appendix 8: Impact on Current DTC Flows

Current flows that would need to be sent to or from the MEO:

- D0019 – EAC/AA Submission flow to submit EACs to the NHHDA;
- D0023 – Failed Instructions flow – should the NHHDA reject a flow provided by the MEO;
- D0155 – DC Appointment flow;
- D0148 ‘Notification of Change to Other Parties’ – to inform the MEO of the registered NHHDA;
- D0205 - Update Registration Details flow;

- D0151 Termination of Appointment or Contract by Supplier' – to inform the MEO that the portfolio MPAN is being deregistered; and
- D0261 – Rejection of Agent Appointment flow should the MEO receive an appointment flow in relation to a non portfolio MPAN.

Current flows where additional guidance is required:

- D0168 'Request for Additional/New MPAN Core(s)'
- D0132 'Request for Disconnection of Supply'

List of Attachments:

Attachment 1: P218 Analysis Spreadsheet

An excel spreadsheet showing the results of the Export Factor Analysis and the Profiling Error.

Attachment 2: P218 Scenario Diagrams

High level diagrams setting out the process for change of Supplier and transfer between the P218 and P081 processes.

Attachment 3: Complete Responses to the BSC Agent Impact Assessment

A complete set of responses are attached as a separate document (Attachment 3).

Attachment 4: Complete Responses to the Party and Party Agent Impact Assessment

A complete set of the non-confidential impact assessment responses are attached as a separate document (Attachment 4).