



Mandatory Half-Hourly Settlement: aims and timetable for reform

Consultation

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Contact: James Earl, Senior Policy Manager
Team: Settlement Reform
Tel: 020 7901 7000
Email: HalfHourlySettlement@ofgem.gov.uk

Overview:

Settlement reconciles discrepancies between a supplier's contractual purchases of electricity and the demand of its customers. Generators and suppliers trade electricity in the wholesale market in half-hourly periods. Currently, most customers are settled on a 'non half-hourly' basis, as they do not have meters that can record consumption in each half-hour period. They are settled using estimates of when they use electricity, based on a profile of the average consumer (within a given Profile Class).

Smart meters can record the amount of energy consumed or exported within every half-hour of the day. This is an opportunity to make the settlement process more accurate and timely, and to deliver positive outcomes for consumers by facilitating lower bills, reduced environmental impacts, enhanced security of supply and a better quality of service. We expect that we will need to mandate all suppliers to settle their customers on a half-hourly basis to realise the full benefits.

This consultation sets out our plan for moving to mandatory half-hourly electricity settlement. It outlines the aim of the reforms, timing considerations, the regulatory interventions to consider before implementing half-hourly settlement, and who should design and approve such interventions. We welcome views from interested parties on this plan and more widely on the move to mandate half-hourly settlement.

Context

Our principal objective is to protect the interests of existing and future gas and electricity consumers. Therefore, we have an important role to play in helping consumers to realise the benefits of smart and advanced metering.

Energy suppliers are required to take all reasonable steps to install smart meters in every home and small business premises by the end of 2020. In order to enable the benefits of the transition to smart meters, we have agreed with government to take forward a project to reform the electricity settlement arrangements in Great Britain. It is part of broader collaborative work with the Department for Business, Energy and Industrial Strategy (BEIS) to move towards a smarter, more flexible energy system that delivers lower bills, lower carbon emissions and enhanced security of supply.

In its investigation into Great Britain's energy market, the Competition and Markets Authority (CMA) found that the absence of a firm plan for moving to half-hourly settlement for domestic and smaller non-domestic electricity customers is a feature of the market that gives rise to an Adverse Effect on Competition (AEC). It made a number of recommendations on half-hourly settlement, one of which is to publish and consult on a plan setting out the aim of the reform for half-hourly settlement, to include a list of proposed regulatory interventions and relevant considerations, the relevant entity in charge of designing and/or approving such interventions, and an estimated timetable for the completion of each necessary intervention. This consultation implements this CMA recommendation.

Associated documents

Smart, Flexible Energy System - a call for evidence, November 2016

<https://www.ofgem.gov.uk/publications-and-updates/smart-flexible-energy-system-call-evidence>

Open letter on mandatory half-hourly settlement: intention to launch a Significant Code Review, June 2016

<https://www.ofgem.gov.uk/publications-and-updates/open-letter-mandatory-half-hourly-settlement-intention-launch-significant-code-review>

Open letter - Half-hourly settlement (HHS): the way forward, December 2015

<https://www.ofgem.gov.uk/publications-and-updates/half-hourly-settlement-way-forward>

Update on electricity settlement project, January 2015

<https://www.ofgem.gov.uk/publications-and-updates/update-electricity-settlement-project>

Electricity settlement: Moving to half-hourly settlement, April 2014

<https://www.ofgem.gov.uk/publications-and-updates/electricity-settlement-%E2%80%93-moving-half-hourly-settlement>

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Executive Summary

We have agreed with government to take forward a project to reform the electricity settlement arrangements in Great Britain. It is part of broader collaborative work with the Department for Business, Energy and Industrial Strategy (BEIS) to move towards a smarter, more flexible energy system that delivers lower bills, lower carbon emissions, enhanced security of supply and a better quality of service.

Our first step is to identify and seek to remove the barriers facing suppliers wishing to settle their domestic and smaller non-domestic electricity customers on a half-hourly basis ('elective half-hourly settlement'). Our ambition is to enable elective half-hourly settlement for domestic and smaller non-domestic customers in early 2017.

Settling customers using their half-hourly consumption data will expose the true cost of supplying that customer in any given half-hour, putting incentives on suppliers to help customers move their consumption to periods when electricity is cheaper (or export in periods when it is beneficial to the system). Half-hourly settlement will therefore:

- promote innovation and competition in the energy market
- help to create the right environment for more demand-side response (DSR), leading to a more efficient energy system
- help suppliers to forecast demand more accurately, strengthening competition and reducing costs
- make the settlement process faster and more efficient, reducing barriers to entry to the energy market.

We expect that we will need to mandate all suppliers to settle their customers on a half-hourly basis to realise the full benefits.

In its final report after its investigation into competition in the energy market, the Competition and Markets Authority (CMA) made a recommendation to consult on a plan setting out timescales and responsibilities relating to the introduction of mandatory half-hourly settlement. This consultation represents this plan.

Our proposed plan to reach a decision on mandatory half-hourly settlement is set out in Chapter 5. This decision will be supported by a comprehensive Impact Assessment, and a Target Operating Model for how the settlement arrangements will operate.



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Decisions on a number of interventions will be needed to change the settlement arrangements in a way that delivers the best outcome for customers. These interventions broadly sit in the following categories:

- Roles and responsibilities: Considering the arrangements for the institutions that support settlement through data collection and aggregation, data estimation and metering
- Settlement process design: Considering changes to the settlement process to enable half-hourly settlement for domestic and smaller non-domestic customers, and make sure they are efficient for the long term
- Policy enablers: Changes to policy needed to facilitate moving to mandatory half-hourly settlement
- Consumer-facing issues: Considering how to engage and protect consumers in innovation enabled by half-hourly settlement

Through this consultation, we are interested in your views on the plan and interventions categorised above. We are seeking views on the timetable for reform, the risks, constraints and dependencies, and the engagement we will be looking for from stakeholders.

The main purpose of this consultation is to gather feedback from stakeholders on our initial planning for the project so that we can develop a final plan to progress mandatory half-hourly settlement. You are welcome to share initial views on the policy issues related to mandatory half-hourly settlement, but there will be more opportunities at a later time for stakeholders to comment on the details.

Please send consultation responses to HalfHourlySettlement@ofgem.gov.uk. This consultation closes on 6 January 2017. Unless you mark your response confidential, we'll publish it on our website, www.ofgem.gov.uk, and put it in our library.

1. Background

Chapter Summary

This chapter explains how the electricity settlement arrangements currently operate, the work we have done to date on settlement reform, and the Competition and Markets Authority's findings and recommendations on electricity settlement.

The current electricity settlement arrangements

- 1.1. Suppliers are charged for the difference between the volume of energy that they buy in the wholesale market and what their customers consume in each half-hour period. The process for comparing contracted and metered positions, and determining the charges to be paid for any imbalance, is called settlement. This process therefore places incentives on suppliers to match as accurately as possible the volume of energy that they procure to their customers' demand in each half-hour of the day.
- 1.2. At present, the vast majority of meters in Great Britain cannot record half-hourly (HH) consumption and are metered on a non-half-hourly (NHH) basis.¹ To match the supply of electricity with volumes procured in HH intervals on the wholesale market, an estimate of consumption at a HH granularity needs to be made. This is achieved through a process called profiling, using an average demand profile for different customer types². These averages are used to calculate energy apportioned to individual settlement periods for each consumer.
- 1.3. The balancing and settlement arrangements and governance are defined in the Balancing and Settlement Code (BSC)³, introduced as part of the New Electricity Trading Arrangements (NETA) in 2001. The BSC defines the obligations on the code administrator ELEXON to operate the arrangements efficiently, outlining responsibilities and establishing the BSC Panel.

The aim of settlement reform

- 1.4. Smart meters can record the amount of energy consumed or exported within every half-hour period and send this data to energy suppliers remotely. This presents an opportunity to make the settlement process more accurate and

¹ The industry is currently migrating customers in Profile Classes 5-8 to half-hourly settlement under BSC modifications P272 and P322.

² See 'Load Profiles and their use in Electricity Settlement': https://www.elexon.co.uk/wp-content/uploads/2013/11/load_profiles_v2.0_cgi.pdf

³ Where the Transmission Licence in condition C3 requires the licensee to ensure there is and remains a BSC in place <https://epr.ofgem.gov.uk/Content/Documents/Electricity%20transmission%20full%20set%20of%20consolidated%20standard%20licence%20conditions%20-%20Current%20Version.pdf>



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timely, and to deliver positive outcomes for consumers by supporting the move to a smarter, more flexible energy system.

- 1.5. We consider that it is in consumers' interests to be settled using their HH consumption data. Using HH data for settlement will strengthen incentives on suppliers to help customers move their consumption to periods when electricity is cheaper (or export in periods when it is beneficial to the system). It will also make market arrangements more efficient and speed up the settlement process, which should promote competition by reducing the risks of entering the market.
- 1.6. The aim of the electricity settlement reforms are therefore to:
 - promote innovation and competition in the energy market;
 - help create the right environment for more demand-side response (DSR), leading to a more efficient energy system;
 - help suppliers forecast demand more accurately, strengthening competition and reducing costs; and
 - make the settlement process faster and more efficient, reducing barriers to entry to the energy market.
- 1.7. Taken all together, these will help the energy market to deliver the outcomes we wish to see for consumers: lower bills, reduced environmental impacts, enhanced security of supply and a better quality of service.

Building on previous work on half-hourly settlement

- 1.8. We have a long-standing interest in half-hourly settlement (HHS), having developed our thinking on this through the Smarter Markets Programme⁴, which began in 2012. In 2014, we established the Electricity Settlement Expert Group (ESEG) and held a series of meetings as a first step towards informing the case for mandating HHS. These meetings considered a number of important issues, such as the role of supplier agents for HH metered sites, the Change of Measurement Class (CoMC) process, the smart metering Data Access and Privacy Framework, data estimation and distributional issues. The Expert Group also discussed the integration of HHS with other market developments, such as the Switching Programme, the Data Communications Company's (DCC) 'go live' date, and the timing of the transition to HHS.

⁴ <https://www.ofgem.gov.uk/gas/retail-market/market-review-and-reform/smarter-markets-programme>

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- 1.9. We published a summary of the conclusions⁵ from this work in early 2015, and followed this with an open letter⁶ in late 2015 outlining the proposed way forward for our HHS work.
- 1.10. Previous work on HHS has also been taken forward through the industry-led Profiling and Settlement Review Group (PSRG). The PSRG was a sub-group of the Supplier Volume Allocation Group (SVG) from 2010-15. The PSRG reported to the Balancing and Settlement Code Panel and was tasked with maintaining the integrity of the settlement arrangements in the short to medium term as smart meters are rolled out. The PSRG reported to the SVG on a number of potential settlement improvements, including HHS⁷.

Half-hourly settlement for Profile Classes 5-8: P272 & P322

- 1.11. We have approved two modifications to the BSC to implement HHS for customers in Profile Classes 5-8 – first P272⁸ in October 2014, followed by P322⁹ in June 2015. P272 requires suppliers to settle customers in Profile Classes 5-8 (generally medium and larger businesses) using their actual HH consumption data by 1 April 2017. P322 requires suppliers to settle affected customers on a HH basis within 45 business days of acquiring that customer or renewing their contract. P322 therefore provides a phased and orderly transition to HHS for these customers over the period from November 2015 to April 2017.
- 1.12. We continue to work with ELEXON and industry on the transition to HHS and will apply what we've learned from this process to our work on mandatory HHS for the remaining domestic and smaller non-domestic customers in Profile Classes 1-4.

Elective HHS

- 1.13. Our first step towards HHS for domestic and smaller non-domestic customers has been to focus on removing barriers to cost-effective HHS of domestic and smaller non-domestic customers on an elective basis. Our ambition is to enable elective HHS for these customers in early 2017.
- 1.14. Enabling cost effective elective HHS has been considered extensively through ELEXON's Settlement Reform Advisory Group (SRAG). The SRAG convened four meetings throughout 2015 and was stood down by the BSC Panel in

⁵ https://www.ofgem.gov.uk/sites/default/files/docs/2015/01/settlement_final_doc.pdf

⁶ https://www.ofgem.gov.uk/sites/default/files/docs/final_open_letter_on_hhs.pdf

⁷ <https://www.elexon.co.uk/wp-content/uploads/2012/01/Profile-Class-1-4-HH-Settlement-Final-Report-v1-0.pdf>

⁸ <https://www.ofgem.gov.uk/publications-and-updates/balancing-and-settlement-code-bsc-p272-mandatory-half-hourly-settlement-profile-classes-5-8>

⁹ <https://www.ofgem.gov.uk/publications-and-updates/balancing-and-settlement-code-bsc-p322-revised-implementation-arrangements-mandatory-half-hourly-settlement-profile-classes-5-8>

February 2016 having delivered a report on a number of barriers to elective HHS to be addressed. To supplement the work of the SRAG, we consulted on further barriers to elective HHS through our open letter in December 2015. This consultation resulted in a paper¹⁰ published in May 2016 summarising our conclusions on issues raised and indicating how industry could address them.

- 1.15. Since then, code administrators, suppliers and other industry parties have been working together to raise and progress the changes coming out of the SRAG and our conclusions paper. This industry-led process is working towards an early 2017 timeline to enable cost-effective elective HHS. As noted in our conclusions paper, the precise implementation timing will depend on practical factors such as the BSC release schedule. Information on the current status of each proposed change is available through the tracker on our website.¹¹
- 1.16. Our work on elective HHS adopts a market-led approach, where, by reducing barriers, we are enabling suppliers to identify commercial opportunities to offer time-of-use and other smart tariffs. Although elective HHS involves making relatively minor changes to the existing arrangements to make HHS for domestic and smaller non-domestic customers more cost-effective, mandatory HHS will involve change of a different scale, with every supplier (and other parties) upgrading their IT systems and a coordinated, programme-managed approach.
- 1.17. A number of issues examined through the work on elective HHS will need to be built upon or examined again in the process of developing mandatory HHS. The work advanced by the ESEG and the SRAG, alongside issues raised by stakeholders through consultation, will be used to inform the policy and design decisions that will need to be made.

The Competition and Markets Authority's investigation

- 1.18. The CMA published its final report¹² in June 2016, after its investigation into competition in the energy market. Its remedy package sets out a number of recommendations to BEIS and Ofgem about reform of the electricity settlement arrangements, including conducting a full cost-benefit analysis of the move to mandatory HHS and consulting on the plan for the reform.
- 1.19. Specifically, the CMA recommended that this consultation include:
 - i. the aim of the reform for HHS;
 - ii. a list of proposed regulatory interventions (including code changes), and the relevant entity in charge of designing and/or approving such

¹⁰ https://www.ofgem.gov.uk/system/files/docs/2016/05/elective_hhs_conclusions_paper.pdf

¹¹ <https://www.ofgem.gov.uk/publications-and-updates/elective-hhs-tracker>

¹² <https://assets.publishing.service.gov.uk/media/5773de34e5274a0da3000113/final-report-energy-market-investigation.pdf>



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interventions that are necessary in order to implement the HHS reform;

- iii. an estimated timetable for the completion of each necessary intervention; and
 - iv. where appropriate, a list of relevant considerations that will be taken into account in designing each regulatory intervention.
- 1.20. The CMA's report is an important milestone towards making the market more competitive and fair. The aim of its remedies package in this area is to ensure that, within a reasonable timetable, HH consumption data is used to settle electricity customers falling into Profile Classes 1 to 4.
- 1.21. The CMA considered that in order to deliver this aim, the implementation of HHS will need sufficient planning and strong project management, learning lessons from earlier projects.
- 1.22. We agree with the importance that the CMA and other stakeholders have attached to careful and realistic planning to deliver these reforms. This consultation presents our plan, and we are seeking feedback from stakeholders at a high level, as well feedback on specific questions outlined in each of the chapters of this consultation.

2. Proposed approach

Chapter Summary

This chapter explains how we propose to manage and deliver settlement reform, and the key products that need to be developed to do so.

Question 2.1 Do you have views on our proposed approach?

Question 2.2 Our Impact Assessment will evaluate the costs and benefits of mandatory HHS for domestic and smaller non-domestic consumers. We will be seeking evidence of costs and benefits as part of that process. Do you have initial views on the costs and/or benefits? If so, please provide these with your supporting evidence.

Significant Code Review

- 2.1. In our Draft Forward Work Programme 2015/16¹³, we outlined our intention to launch a Significant Code Review (SCR) on mandatory HHS. We set out the scope of the potential SCR, with timescales and proposals for how the work should progress.
- 2.2. Following this consultation, and after we had considered responses, we published a letter¹⁴ in June 2016 to confirm our decision to launch an SCR, but only once the work involved has been thoroughly scoped and planned. This letter summarised the feedback we had received from stakeholders to the consultation and outlined our reasoning for using our SCR powers to deliver mandatory HHS.
- 2.3. We consider that a combination of our SCR and licence modification powers are the best tools we currently have available for examining the issues to be addressed before migrating all domestic and smaller non-domestic customers to HHS and for successfully managing the changes that will be needed across multiple industry codes and licence conditions.
- 2.4. Our Code Governance Review (CGR3) set out three options that could be followed under an SCR process¹⁵. We will consider which option will deliver

¹³ For consultation and responses, see: <https://www.ofgem.gov.uk/publications-and-updates/draft-forward-work-programme-2016-17>

¹⁴ <https://www.ofgem.gov.uk/publications-and-updates/open-letter-mandatory-half-hourly-settlement-intention-launch-significant-code-review>

¹⁵ Our Code Governance Review (CGR3) outlined two extra options for the SCR process beyond the current process, whereby we direct a licensee (or licensees) to raise modifications at the end of an SCR. The first of these options is for us to raise a modification proposal (or proposals) at the end of an SCR, and the second is for us to lead an end-to-end process to develop a code modification (or modifications). Our Final Proposals can be found here: https://www.ofgem.gov.uk/system/files/docs/2016/03/code_governance_review_phase_3_final_proposals_2.pdf

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the best outcome for consumers and expect to consult with stakeholders on this.

2.5. We expect the scope of the SCR to cover:

- the preliminary work we carried out through the ESEG;
- other issues which need to be addressed to deliver mandatory HHS; and
- issues which can be tackled efficiently as a by-product (e.g. shortening settlement timescales).

Section 3 of this consultation goes into more detail on the issues that we anticipate will need to be addressed through this SCR and how we propose they will be sequenced.

2.6. The government has published draft legislative provisions that would give Ofgem the means to progress these reforms more effectively than through an SCR. The Energy and Climate Change Select Committee conducted pre-legislative scrutiny of these draft legislative provisions earlier this year and the government responded to the Committee's recommendations in July¹⁶. If these powers were provided we would expect to stop the SCR and use the new powers for the remainder of the process.

Key products

2.7. Any decision on how and when to implement mandatory HHS will need to be built on a robust evidence base. To this end, we intend to produce a number of key products. These are:

- a business case, based on the Treasury's Five Case Model¹⁷;
- a Target Operating Model (TOM), outlining how the settlement arrangements and supporting institutions will deliver reform; and
- an Impact Assessment, including analysis of the distributional impacts of mandating HHS. The Impact Assessment will form one of the five cases of the business case (the economic case).

Business case

2.8. Mandating HHS for domestic and smaller non-domestic customers will involve fundamental changes to industry IT systems and a transitional period for

¹⁶ See: www.parliament.uk/business/committees/committees-a-z/commons-select/energy-and-climate-change-committee/inquiries/parliament-2015/pre-legislative-energy-15-16/

¹⁷ The Five Case Model is a methodology for producing business cases for spending proposals. See Green Book guidance: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/469317/green_book_guidance_public_sector_business_cases_2015_update.pdf

moving customers over to HHS. Planning, managing and controlling this transition is therefore critical to the success of the project, helping to mitigate against any difficulties with implementation.

- 2.9. The Five Case Model for business cases is a way to structure and manage this change, setting out the case for change and how to deliver it. It will set out the strategic rationale for reform, an economic analysis of the costs and benefits of mandatory HHS (the Impact Assessment), how to ensure there are appropriate incentives on parties to design and implement the necessary changes to systems, and the way that the implementation of mandatory HHS can best be financed and managed to ensure success. It is an iterative process, with the business case refined and developed over time.
- 2.10. Using this approach will allow us to set out clearly how the transition will work and who will be responsible for delivering each part. It is intended to provide clarity at an early stage so that industry can plan and sequence changes in a way that works and in a way that consumers and industry stakeholders support. As we develop the business case we will be engaging closely with stakeholders and sharing our key findings.

Target Operating Model

- 2.11. Introducing HHS for domestic and smaller non-domestic customers will need the settlement arrangements to be changed significantly. This presents an opportunity to design changes that provide optimal benefit for consumers. The TOM will set out how the new arrangements supporting HHS will operate, and will be realised through detailed design work which we envisage will be carried out by a joint Ofgem and industry group. We will consult on our proposals, which will give other parties an opportunity to give their input.
- 2.12. Ofgem's ESEG considered a number of issues and identified areas to consider further before final options are identified:
- Change of Measurement Class – the ESEG identified that the current process is not suitable for migrating millions of customers to HHS.
 - Settlement timetable – the accuracy provided by HHS could make settlement more efficient and allow the final settlement run to be brought forward. An associated piece of work would need to be done on how volumes are corrected where necessary after the final settlement run.
 - Data estimation – the current process for HHS data estimation may not be suitable for sites in Profile Classes 1-4, as it was designed for larger sites with different meter types and technologies.
 - Central Agent – the Supplier Agents' roles are at the heart of the settlement process. There could be potential for a central agent to improve efficiency, although this would need to be balanced against impact on business including a potential reduction in competition in this part of the market. The CMA's Energy Market Investigation

recommended we consider the cost-effectiveness of alternative design options for HHS such as a centralised entity responsible for data collection and aggregation.

- Transition timetable – the ESEG identified that the approach taken to the transition (e.g. phased vs. 'big bang') will have a significant impact on the cost assessment.

2.13. The scope of the policy options we will consider are discussed in detail in Chapter 4. The final set of options will be used to inform development of the TOM.

Impact Assessment

2.14. In its final report, the CMA recommended that Ofgem conduct a full cost-benefit analysis of the move to mandatory HHS. Through consultation, stakeholders stressed to us the importance of robust, thorough analysis to quantify costs against the potential benefits, and felt that this cost-benefit assessment needs to inform decision-making as the SCR progresses.

2.15. We agree that careful evaluation of costs and benefits of mandatory HHS is needed to ensure that the model delivers the best outcome for consumers. In line with our usual practice, we will be carrying out a full Impact Assessment. This will form a central part of our early work as we launch the SCR, building the economic case within the Five Case Model.

2.16. We will need to work with industry to develop an evidence base for this Impact Assessment, and to test our cost benefit framework and underlying analysis. We expect to be issuing requests for information to support the Impact Assessment in 2017, and consulting on the draft Impact Assessment when appropriate.

Distributional analysis

2.17. HHS will strengthen incentives on suppliers to offer tariffs which reward their customers if they shift their electricity consumption away from times of peak demand. There are potentially substantial benefits to consumers and the system from peak load shifting, but these rely on consumers responding to incentives to exploit within-day price differentials.

2.18. Such tariffs, known as smart tariffs, are currently not widely available on the market, apart from Economy 7, where electricity is charged at a higher rate during the day and is cheaper overnight. However, the combination of smart/advanced meters, HHS and new technologies offering automation and electricity storage are likely to significantly increase the number of smart tariffs on the market.



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- 2.19. Smart tariffs can benefit consumers through lower bills. Consumers who shift their electricity consumption from peak times stand to gain. There is an opportunity for consumers to reduce bills by using less electricity at peak times, for example by using appliances such as washing machines and dishwashers during off peak periods. Over the next decade, innovative technologies, automated appliances or in-home storage which enable consumers to more easily manage smart tariffs are expected to become more widely available.
- 2.20. There may however be distributional effects arising from how smart tariffs affect different types of consumer, based on consumers' lifestyle and their ability to shift their usage at peak times.
- 2.21. Ofgem has commissioned analysis to help us understand these distributional effects. The work covers analysis of how smart tariffs may affect different sociodemographic groups, and the potential for behavioural change in consumers with different characteristics. Conclusions of the work will feed into the Impact Assessment.

3. Proposed plan

Chapter Summary

This chapter sets out the areas that will need to be considered for reform to enable the transition to mandatory HHS. It also sets out how the delivery plan will work alongside our work to enable cost-effective elective HHS.

Question 3.1 Do you think we have identified the necessary reforms? Are there other reforms that should be listed? If so, what are they and how would they fit in the proposed plan?

Question 3.2 What industry expertise is needed to deliver these reforms in the timetable we have given?

Question 3.3 How much expertise and time can your organisation provide? How does this interact with other Ofgem initiatives?

Question 3.4 What are the key risks and constraints to delivering to the timetable outlined?

Question 3.5 Do you agree with the dependencies in Figure 1? If not, what changes would you suggest and why?

Question 3.6 What are the barriers to making changes to central systems and industry rules by the first half of 2018?

Question 3.7 Do you have any other comments on the proposed plan?

Proposed reforms

3.1. To deliver mandatory HHS, a number of interventions will be needed to change the settlement arrangements in a way that delivers the best outcome for consumers. We anticipate that these interventions will form the scope of the SCR, in addition to the use of our licence modification powers, as necessary. They fit under the following categories:

- Roles and responsibilities: Considering the arrangements for the institutions that support settlement through data collection and aggregation, data estimation and metering.
- Settlement process design: Considering changes needed to how the settlement process works in order to enable HHS for domestic and smaller non-domestic consumers and optimise the enduring efficiency of these arrangements.
- Policy enablers: Changes to policy needed to facilitate the transition to mandatory HHS.
- Consumer-facing issues: Consideration of how to engage and protect consumers in innovation enabled by HHS.
- Transition to HHS: Planning a timely transition to mandatory HHS which balances the need to realise the benefits of HHS with the costs of implementation, while maintaining the robustness of the settlement system.



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- 3.2. The table overleaf shows the proposed regulatory interventions needed to implement mandatory HHS, with responsibilities and timing considerations, as well as other considerations to take into account. We discuss the areas for reform in more detail in Chapter 4. We welcome feedback from stakeholders on the reforms we have listed, and any others which stakeholders consider will be necessary.

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Reform		Aim	Proposed interventions	Entity responsible	Timetable for completion	Key considerations (non-exhaustive)
Roles and responsibilities	Data Collector and Data Aggregator (DC/DA) roles	Institutional arrangements that: <ul style="list-style-type: none"> • are cost-effective and efficient • promote continual improvement • promote innovation • adapt to industry change 	BSC modifications	Ofgem lead (input from ELEXON, Gemserv and industry)	Solution to issues on roles needed first to feed into draft Impact Assessment and settlement process work.	<ul style="list-style-type: none"> • Interaction with smart rollout, DCC and Switching Programme • Processes for SMETS1/advanced meters • Evaluation of a central agent model for these functions
	Meter Operator (MOA) role					
	Data retrieval					
Settlement process	Settlement timetable	Appropriate and proportionate arrangements that incentivise high performance and an efficient settlement process, both for HH and NHH	BSC modifications	Ofgem lead (input from ELEXON, Gemserv and industry)	To follow work on roles and responsibilities. Direction of travel by the first half of 2018 to inform decision on mandatory, with detailed design through modifications and changes after this.	Benefits of earlier certainty for suppliers and interactions with settlement performance
	Data estimation					
	HH requirements (proving tests, performance requirements etc.)					
	Disputes and corrections					
	Treatment of NHH consumers					
	Change of Measurement Class		BSC modifications and MRA changes			Changes made for elective HHS
			Freezing or continuing profiling, data access, take up of smart & advanced meters, smart meter comms availability, consumer issues			
			Changes made for elective HHS			

Mandatory Half-Hourly Settlement: aims and timetable for reform

Reform		Aim	Proposed interventions	Entity responsible	Timetable for completion	Key considerations (non-exhaustive)
Policy enablers	Network charging (transmission)	Charging arrangements that are appropriate for domestic and smaller non-domestic consumers when settled half-hourly	CUSC	Ofgem lead (with National Grid and Electralink)	Solution to transitional charging issues needed in time for HHS rollout	Targeted review of network charging, outcomes of industry review of the distribution charging methodologies, changes made for elective HHS, consumer issues
	Network charging (distribution)		DCUSA			
	Settling export	Settlement arrangements that accurately measure and allocate all electricity volumes (including export).	BSC export rules and Feed-in Tariff (FiT) rules	Ofgem for BSC, BEIS for FiT policy	Direction of travel to feed into draft IA and settlement process work, with detailed design through modifications and changes after this.	Cost and scale of systems changes needed. Benefits of greater accuracy. Interaction with policy on FITs/small scale renewables

Reform	Aim	Proposed interventions	Entity responsible	Timetable for completion	Key considerations (non-exhaustive)	
Consumer issues	Data access	A data access regime that provides appropriate consumer safeguards and enables delivery of HHS benefits.	Governed by the Data Access and Privacy Framework (<i>contained in the supply licence, and the Smart Energy Code</i>)	BEIS and Ofgem	High level approach needed first to inform work on roles and responsibilities and settlement process. Solution by the first half of 2018 to inform decision on mandatory, with detailed design of any changes to follow.	Privacy and consumer issues, benefits delivery, interaction with the smart meter rollout, EU regulation, timing.
	Consumer engagement and protection	Protect and engage consumers in innovation enabled by HHS, with particular consideration of distributional effects and consumer vulnerabilities.	To be informed by analysis	Ofgem and/or BEIS as appropriate	In time for HHS rollout, and ongoing. Data on distributional effects to feed into IA.	Interaction with smart meter rollout, other consumer work and wider retail regulatory policy
Transition to HHS		A transition to mandatory HHS which realises the benefits in a timely way but maintains the robustness of the settlement system and takes account of costs imposed	To be informed by analysis	Ofgem	By the first half of 2018 (see para 3.4)	Distributional impacts, systems changes, learnings from P272, Impact Assessment.

Proposed timetable for mandatory HHS

- 3.3. The issues within scope of the SCR are wide-ranging and complex, so the plan for this needs to be realistic, pragmatic and have deliverable timescales. The timeline should take into account experience from elective HHS and consider other major changes in the industry, such as the smart meter rollout, the Switching Programme, the move to principles-based regulation and market design work under the flexibility project.
- 3.4. We envisage that the decision on if, when, and how to implement mandatory HHS should be taken by the first half of 2018 following our policy and design work. Figure 1 overleaf shows the order in which we propose to resolve the issues under consideration. It sets out which pieces of work depend on progress in other areas, and as such maps out the proposed sequencing of work required. Reaching a decision by the first half of 2018 will depend on reaching conclusions on these issues, which will in turn depend on the solutions identified as our preferred options. We welcome views from stakeholders on the dependencies we have identified and factors which will impact the timeline.
- 3.5. We stated in our December 2015 open letter that it is currently too early to fix an end date for the transition of small sites to mandatory HHS. This should be considered in the context of other industry changes, the knowledge that we will develop from policy and design work on mandatory HHS, the Impact Assessment and from observing the effects of elective HHS.
- 3.6. We also explained that our ambition was that by the first half of 2018 the industry rules and central systems would be in place to facilitate mandatory HHS. We recognise that this ambition poses significant challenges, and depends on the decisions taken about the Target Operating Model. In addition, as we said in our December 2015 and June 2016 letters, the timetable for mandatory HHS should take into account the timetable for other major industry reforms. We welcome stakeholder views on the merits and achievability of our proposed timetable for rules and central system changes to enable mandatory HHS, including in relation to the timing of other major industry reforms.
- 3.7. Following a decision to proceed with mandating HHS, the project would move into the implementation phase. This phase would begin with code modifications and rule changes to implement the conclusions of the design work before changes to ELEXON's central systems and suppliers' own systems to manage the data changes brought about by mandatory HHS.

Mandatory Half-Hourly Settlement: aims and timetable for reform

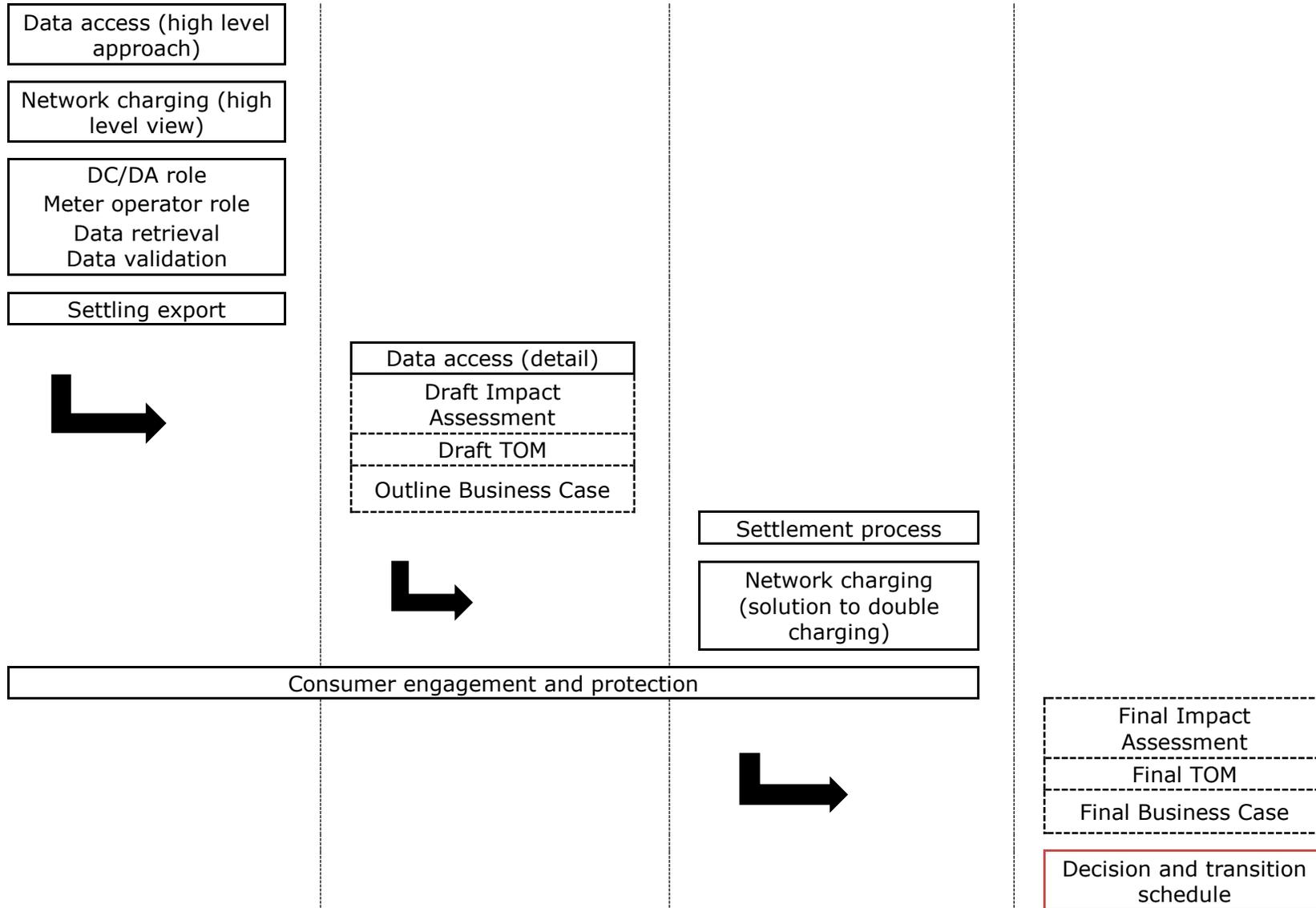


Figure 1

Managing the transition

- 3.8. The schedule for implementing mandatory HHS must recognise the scale of IT systems change that will be needed and how reform of the settlement arrangements fits with other industry obligations over the next few years. Stakeholders have highlighted this to us in a previous consultation, and we will seek to ensure that the transition timing takes account of other industry changes.
- 3.9. We will need to balance the amount of concurrent change with our aim of realising the benefits of mandatory HHS in a timely and cost-effective way.

Interaction with elective HHS

- 3.10. The CMA noted in its Final Report that, in its view, elective HHS is unlikely to be an effective substitute for mandatory HHS. This is because under mandatory HHS, all suppliers bear the full costs that their customers impose on the electricity system. This, in turn, will both reduce overall costs per head and give stronger financial incentives to suppliers to engage all of their customers, as they seek to shift their consumption to cheaper periods.
- 3.11. However, we consider that elective reform is an important step towards mandating HHS. To successfully implement mandatory HHS, the settlement process will need to work effectively for small sites. Elective HHS will provide useful evidence on how the HHS process works for domestic and smaller non-domestic customers in practice. In addition, elective HHS will help us learn about the types of products that suppliers offer in response to the new arrangements and how consumers react to them. This will be one source of evidence to inform our decision on mandatory HHS.

4. Policy scope

Chapter Summary

This chapter details the scope of the work that will be conducted through the SCR. The issues outlined have been gathered from our previous work on settlement, the work of the SRAG, ESEG and PSRG, and our work on enabling cost-effective elective HHS.

Question 4.1 Do you agree with the conclusions of the ESEG and the PSRG (see paragraphs 1.8 – 1.10.)? Do you think anything has changed since they considered these issues?

Roles and responsibilities (see paragraphs 4.2. – 4.7.)

Question 4.2 Do you agree with the scope of issues identified in this section? Are there any others we should be considering?

Settlement process (see paragraphs 4.8. – 4.17.)

Question 4.3 Do you agree with the scope of issues identified in this section? Are there any others we should be considering?

Policy enablers (see paragraphs 4.18. – 4.27.)

Question 4.4 Do you agree with the scope of issues identified in this section? Are there any others we should be considering?

Consumer issues (see paragraphs 4.28. – 4.38.)

Question 4.5 Do you agree with the scope of issues identified in this section? Are there any others we should be considering?

- 4.1. The issues below are those within scope that will need considering in order to successfully transition to mandatory HHS. This isn't intended as a comprehensive list of all issues, and we are seeking stakeholder feedback on the scope that we have set out.

Roles and responsibilities

- 4.2. Previous industry consideration suggests that the current settlement arrangements are unlikely to be wholly appropriate for millions of domestic and smaller non-domestic consumers. The objective of our work in this area will be to design enduring institutional arrangements which support HHS for domestic and smaller non-domestic consumers. These arrangements should be cost-effective and efficient, promote continual improvement and innovation, and adapt to future industry change.
- 4.3. We do not have a view currently on the best design for the settlement systems and underlying institutional arrangements under mandatory HHS, but we will be looking to explore this with stakeholders early on in the process in order to inform the Impact Assessment and other dependent policy work.

Supplier agent functions

- 4.4. Under the BSC, electricity suppliers appoint supplier agents to carry out certain functions related to settlement. There are three HH supplier agent roles: Meter Operator (MOA), Data Collector (HHDC) and Data Aggregator (DA). The HHDC role can be broken down further into data retrieval and data processing, including data validation.
- 4.5. HHS requires many more meter readings to be taken and processed through settlement than the current system. The move to mandate HHS therefore presents an opportunity to review the arrangements in the market for collecting and processing this data, and consider how this would work best for consumers. The rollout of smart meters and the infrastructure to support this, with the centralisation of some functions under the DCC, is a further driver for re-examining the arrangements and responsibilities underpinning the settlement process.

Central agent

- 4.6. In responses to the CMA's Final Report, and in previous work, stakeholders have raised the idea of a centralised system for data collection and aggregation. The DCC will retrieve data centrally but there may be merit in centralising data processing, including data validation, and data aggregation. Potential advantages of a central agent include efficiency savings from increased scale and consistency in the standard of data quality for all suppliers. These advantages would need to be balanced against business impact including a loss of competition and a potential reduction in innovation and supplier choice.
- 4.7. Some stakeholders have suggested that in the event that all other supplier agent functions are carried out by the DCC and a central agent, we may want also to consider the future role of the MOA. In addition, some functions that are traditionally carried out by MOAs (e.g. configuring the meter) will be carried out by suppliers for smart meters.

Settlement process

- 4.8. The objective of our work in this area will be to design an enduring settlement process that incentivises high performance and optimises efficiency when settling domestic and smaller non-domestic consumers on a HH basis.

Settlement timetable

4.9. The availability of HH data and the remote capability of smart meters creates a potential opportunity to shorten the current settlement timetable.¹⁸ A shorter settlement timetable would provide a number of benefits, including reducing the amount of credit cover suppliers need to hold. This would be especially beneficial to small suppliers and new entrants and could ultimately reduce customer bills. The ESEG considered the possibility of bringing forward the settlement timetable¹⁹ and identified the following potential changes:

- the information run could be carried out at three working days compared to one week at present;
- the first settlement run could be carried out at 10 working days compared to one month; and
- the final settlement run could be carried out after one, three or six months, compared to 14 months now.

4.10. We recognise that bringing forward the final settlement run may also have implications for the time available for correcting errors, which is currently limited to 28 months for extra settlement runs. In addition, there is currently no backstop for extra settlement determinations. The ESEG was keen to avoid litigation to resolve errors if possible.

4.11. The industry-led PSRG²⁰ also considered the potential of reducing settlement timescales. In December 2014 it concluded that:

- The final settlement run could be brought forward to seven months and the last date for extra settlement runs could be changed to 12 months.
- Introducing these changes should depend on a performance trigger such as achieving 94% settled on actual energy by R3 in three consecutive months.
- The industry would have 12 months to transition to the new arrangements.

4.12. We recognise that any changes to the settlement timescales depend on a critical mass of customers being migrated to HHS, in order to minimise any impact on settlement performance. We will undertake further work to build on that already done by the ESEG and the PSRG.

¹⁸ The current settlement timetable is explained here <https://www.ofgem.gov.uk/ofgem-publications/88230/14settlementtimetable.pdf>

¹⁹ For information on the current settlement timetable and the case for reform see: <https://www.ofgem.gov.uk/ofgem-publications/88226/slidesexon.pdf>

²⁰ https://www.elexon.co.uk/wp-content/uploads/2014/11/03_PSRG37_01a_Attachment_A_PSRG_Reducing_Settlement_Timescalesv0.3.pdf

Data estimation

- 4.13. Even with the introduction of mandatory HHS for domestic and smaller non-domestic consumers, there will still be situations where actual HH consumption data will not be available for entry into settlement, for example where there is a fault with metering or communications or a consumer opts not to have a smart meter. The ESEG concluded that the current HH estimation process (set out in BSC502) might not be appropriate for sites with smart meters because it was developed for a small number of large sites with different metering systems. For example, domestic sites will not have 'check' meters to enable actual data to be retrieved should the main meter fail.
- 4.14. In addition, profiling will still be required for customers who remain NHH settled. The ESEG considered that 'smart profiling', which creates profiles based on smart meter data, or freezing existing profiles were options that merited further consideration.

Treatment of NHH consumers

- 4.15. The Grid Supply Point Group²¹ Correction Factor (GCF) currently allocates all settlement error to NHH customers. As the number of NHH settled customers declines over time, this means that individual NHH customers could face increasing costs if this aspect of the process is not amended. We may therefore need to consider introducing rules to manage the transition to HHS, for example including requiring that costs are socialised to minimise the impact on those who have not yet migrated.
- 4.16. NHH customers will also face an increasing share of settlement process costs. The ESEG suggested that it may be necessary to change the BSC error allocation rules so error is shared between NHH and HH customers. We note that allocation of error is being considered by the P339²² work group and we will use the conclusions from P339 to inform our proposals.

Change of Measurement Class process

- 4.17. The ESEG identified that the current CoMC process is not wholly suitable for migrating millions of sites to HHS. An ELEXON-led working group has developed proposals for a revised CoMC process to enable elective HHS. Depending on the wider mandatory HHS solution (e.g. any changes to roles and responsibilities), and in light of the larger number of sites that would be affected by mandatory HHS compared to elective, we will consider whether further change is required.

²¹ There are 14 Grid Supply Point Groups, which correspond to the electricity distribution regions

²² <https://www.elexon.co.uk/mod-proposal/p339/>

Policy enablers

- 4.18. The objective of our work in this area will be to find the solutions to policy issues that best enable mandatory HHS and realise its benefits, whilst keeping costs proportionate.

Treatment of advanced meters

- 4.19. The issues considered by the ESEG and discussed above assume that the smart meters are enrolled with the DCC²³. However, there will also be a group of customers in Profile Classes 1-4 who have non-enrolled advanced meters. Some stakeholders have suggested that the most straight forward solution is to HH settle advanced meters under the current arrangements (i.e. the arrangement used for Profile Class 5-8 customers). We will consider this further, through the SCR process.

Settling export

- 4.20. The majority of microgeneration export is currently not included in settlement. This is partly due to the rapid deployment of Feed-in Tariff (FiT) generation (where exports from installations of 30kW and less are not required to be metered) since 2010. The scale of the issue is set to increase, at least in the short term, as the amount of FiT generation grows.
- 4.21. Currently the majority of microgeneration export is spilled onto the distribution network without being metered. This electricity must still be accounted for in settlement though, as it has an impact on the amount of electricity allocated to parties through settlement. This issue is being considered in the elective HHS work, and some work to quantify this issue has also been conducted previously through the SRAG.
- 4.22. If export from all FiT generation was metered and settled there would be no impact on the GCF and the arrangements would better reflect the impact that that generation has on the grid. It would rely on these sites having smart meters to record export, and BEIS (DECC at the time) has previously consulted on two options for moving to fully metered exports. It decided against taking immediate action, although its response to the consultation reiterated its aim of ending deemed exports in favour of metered exports for all sizes of FiTs installation²⁴.

²³ Suppliers will be able to install and commission SMETS2 meters on the DCC network once it goes live; SMETS1 meters will be enrolled with the DCC at a later date.

²⁴ See: <https://www.gov.uk/government/consultations/consultation-on-a-review-of-the-feed-in-tariff-scheme>

Network charging

Transmission charging

- 4.23. The different legacy arrangements for transmission charging for NHH and HH customers will need to be addressed as the industry moves to mandatory HHS. Our work on P272 and on elective HHS noted that transitioning from NHH and HH settlement will result in overcharging of transmission charges in the year of migration, unless changes are made. On P272, a transitional solution was put in place, and on elective HHS the issue is still under consideration.
- 4.24. This has so far been addressed as a transitional issue. The move to mandate HHS will mean that the long term arrangements for charging HH sites for use of the network will need to be considered, given that the demographic of those sites that are HH settled will change dramatically. While we do not have a presumption as to whether the current charging arrangements will be appropriate for domestic and smaller non-domestic customers when settled HH, we recognise that this is an important question that will need to be answered as we design settlement arrangements to support HHS for Profile Classes 1-4.
- 4.25. National Grid has started scoping a review of commercial arrangements linked to transmission charging, which provides a means for stakeholders to discuss these longer-term issues. Further work from us and others in the future will be required to develop a solution that aligns with mandated HHS and delivers positive outcomes for consumers.

Distribution charging

- 4.26. Work carried out alongside the introduction of P272 introduced new HH metered distribution tariffs.²⁵ These tariffs apply to customers formerly in Profile Classes 1-8, so remain suitable for our work on mandatory HHS.
- 4.27. The industry is currently considering a number of issues that may need to be addressed in order to enable a fully smart grid. These include the treatment of generation credits and changes needed to facilitate storage and other non-traditional business models. As part of this work, industry is reviewing the distribution charging methodologies they use for the setting of charges.

²⁵ https://www.ofgem.gov.uk/sites/default/files/docs/2014/10/dcp179_d_0.pdf

Consumer issues

4.28. The objective of our work in this area will be to design solutions to consumer issues which include appropriate consumer safeguards and can be practically implemented without imposing disproportionate costs or complexity on industry.

Data access

4.29. HH electricity consumption data is considered 'personal data' and is subject both to the provisions of the Data Protection Act (1998) and the controls established under the smart metering Data Access and Privacy Framework. This Framework was established by DECC in 2012 and it was subsequently modified by Ofgem. It is enacted through relevant supplier and network operator licence conditions and the Smart Energy Code. The current provisions of the Framework state²⁶ that:

- Suppliers may access monthly (or less granular) energy consumption data, without customer consent, for billing and for the purposes of fulfilling narrowly-defined regulatory obligations.
 - Suppliers may access daily (or less granular) energy consumption data for any purpose except marketing, providing they notify the customer and provide them with a clear opportunity to opt out.
 - Suppliers may only access consumption data which is more granular than daily if they have secured the explicit consent of the consumer to do so (opt-in).
 - Network operators will be able to access domestic consumers' energy consumption data for regulated purposes, provided they have put in place procedures that have been approved by Ofgem to aggregate or otherwise treat the data such that it can no longer be associated with a single premises.
 - Third party DCC users, which may include, for example, price comparison websites, can only access consumption data with the explicit consent of the consumer.
- 4.30. The interaction between the smart metering Data Access and Privacy Framework and proposals for settlement reform was highlighted in the CMA's recent report, which included recommendations regarding changes to the Framework in order to deliver the benefits of HHS.
- 4.31. A number of stakeholders offered views on data access and privacy in response to our open letter in December 2015²⁷.

²⁶ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/43046/7225-gov-resp-sm-data-access-privacy.pdf

²⁷ For a summary of responses: <https://www.ofgem.gov.uk/publications-and-updates/elective-half-hourly-settlement-publication-responses-december-open-letter>

- 4.32. BEIS and Ofgem are seeking to identify design solutions which are compatible with relevant data protection regulations, include appropriate consumer safeguards and can be practically implemented without imposing disproportionate costs or complexity on industry.

Protecting consumers

- 4.33. HHS will incentivise suppliers to offer smart tariffs. Smart tariffs could offer considerable benefit to consumers who have low peak electricity consumption or are in a position to alter their consumption to take advantage of off-peak pricing. However, some consumers have consumption patterns not suited to smart tariffs and will be unwilling or unable to avoid peak periods such as, for example, consumers in vulnerable circumstances with health issues.
- 4.34. Ofgem's consultation on 'helping consumers make informed choices' which closed on 28 September 2016 set out our proposed changes to rules on tariff comparability and marketing. This is part of Ofgem's plan to rely more on principles in the way we regulate the domestic electricity and gas supply markets.²⁸
- 4.35. The consultation included a set of six new 'narrow' principles to achieve this, which would also apply to smart tariffs. These are intended to ensure domestic consumers are able to compare available tariffs and make informed choices about their energy supply. We will consider whether any additional guidance, principles or other protections are needed as a result of mandatory HHS.
- 4.36. In August 2016 we also published our working paper on the Future of Retail Regulation²⁹ setting out our intention to introduce a broad, enforceable principle on vulnerability. Subject to further consultation we will consider whether any further specific protections are needed as a result of mandatory HHS.
- 4.37. It will also be important to ensure that customers signing up to a smart tariff via a third party intermediary, such as a price comparison website, receive the same clear, easy to understand and accurate information as they would have done from a supplier. Ofgem will continue to ensure, through the Confidence Code, that accredited sites do not present information in a way that is deemed to be, or potentially to be, misleading or confusing to consumers.
- 4.38. Ofgem has commissioned distributional analysis, covered in chapter two, which will provide information on how smart tariffs are likely to affect different sociodemographic groups. This will help improve our understanding of the implications of a shift to smart tariffs.

²⁸https://www.ofgem.gov.uk/system/files/docs/2016/08/proposed_changes_to_rmr_clearer_and_sales_and_marketing_licence_conditions_august_2016.pdf

²⁹<https://www.ofgem.gov.uk/publications-and-updates/future-retail-market-regulation-working-paper-broad-principles>

5. Conclusions and next steps

Chapter Summary

This chapter summarises the next steps for the project for this consultation and beyond.

Question 5.1 What is the best way for us to use the expertise of stakeholders? What have you found helpful in the past?

Significant Code Review

- 5.1. Our June 2016 open letter outlined our reasoning for using our SCR powers to deliver mandatory HHS. This letter confirmed our decision to launch an SCR, but only once the work involved has been thoroughly scoped and planned.
- 5.2. We will take into account feedback from stakeholders through this consultation and factor this in to the timelines for the SCR. Once this consultation has closed and we have reflected on the stakeholder feedback, we will publish a response with a revised plan and we anticipate that we will launch the SCR, as outlined in our June 2016 letter.

Stakeholder Engagement

- 5.3. We will be looking to work with stakeholders as we build our approach to mandatory HHS and develop the products outlined in Chapter 2. We need them to provide the necessary information and expertise to inform our analysis.
- 5.4. We will draw on stakeholder expertise to inform the design options work and other policy development. These will be through workshops, consultations, conference calls, or any other suitable medium. If you would like to be notified of workshops or other events, please email HalfHourlySettlement@ofgem.gov.uk.

Appendices

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3	Feedback Questionnaire	42

Appendix 1 - Consultation Response and Questions

We want to hear from anyone interested in this document. Send your response to the person named at the top of the front page.

We've asked for your feedback in each of the questions throughout it. Please respond to each one as fully as you can.

Unless you mark your response confidential, we'll publish it on our website, www.ofgem.gov.uk, and put it in our library. You can ask us to keep your response confidential, and we'll respect this, subject to obligations to disclose information, for example, under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004. If you want us to keep your response confidential, you should clearly mark your response to that effect and include reasons.

If the information you give in your response contains personal data under the Data Protection Act 1998, the Gas and Electricity Markets Authority will be the data controller. Ofgem uses the information in responses in performing its statutory functions and in accordance with section 105 of the Utilities Act 2000. If you are including any confidential material in your response, please put it in the appendices.

CHAPTER: Two

Question 2.1 Do you have views on our proposed approach?

Question 2.2 Our Impact Assessment will evaluate the costs and benefits of mandatory HHS for domestic and smaller non-domestic consumers. We will be seeking evidence of costs and benefits as part of that process. Do you have initial views on the costs and/or benefits? If so, please provide these with your supporting evidence.

CHAPTER: Three

Question 3.1 Do you think we have identified the necessary reforms? Are there other reforms that should be listed? If so, what are they and how would they fit in the proposed plan?

Question 3.2 What industry expertise is needed to deliver these reforms in the timetable we have given?

Question 3.3 How much expertise and time can your organisation provide? How does this interact with other Ofgem initiatives?

Question 3.4 What are the key risks and constraints to delivering to the timetable outlined?

Question 3.5 Do you agree with the dependencies in Figure 1? If not, please explain what changes you suggest and why.

Question 3.6 What are the barriers to making changes to central systems and industry rules by the first half of 2018?

Question 3.7 Do you have any other comments on the proposed plan?

CHAPTER: Four

Question 4.1 Do you agree with the conclusions of the ESEG and the PSRG (see paragraphs 1.8 – 1.10.)? Do you think anything has changed since they considered these issues?

Roles and responsibilities (see paragraphs 4.2. – 4.7.)

Question 4.2 Do you agree with the scope of issues identified in this section? Are there any others we should be considering?

Settlement process (see paragraphs 4.8. – 4.17.)

Question 4.3 Do you agree with the scope of issues identified in this section? Are there any others we should be considering?

Policy enablers (see paragraphs 4.18. – 4.27.)

Question 4.4 Do you agree with the scope of issues identified in this section? Are there any others we should be considering?

Consumer issues (see paragraphs 4.28. – 4.38.)

Question 4.5 Do you agree with the scope of issues identified in this section? Are there any others we should be considering?

CHAPTER: Five

Question 5.1 What is the best way for us to use the expertise of stakeholders? What have you found helpful in the past?

Appendix 2 - Glossary

A

Advanced Meter

The electricity supply licence defines an advanced meter as one that must be capable of recording half-hourly consumption data and of providing suppliers with remote access to this data.

B

Balancing and Settlement Code (BSC)

The BSC contains the governance arrangements for electricity balancing and settlement in Great Britain.

Balancing and Settlement Code (BSC) Panel

The Balancing and Settlement Code (BSC) Panel is established and constituted pursuant to and in accordance with Section B of the BSC. It is responsible for ensuring that the provisions of the BSC are given effect: fully, promptly, fairly, economically, efficiently, transparently and in such a manner as will promote effective competition in the generation, supply, sale and purchase of electricity.

C

Change of Measurement Class (CoMC)

Process used to change the measurement class of a metering point. The measurement class of a metering system are the following three categories, above 100kW, below 100kW, unmetered.

Confidence Code

The Confidence Code is a code of practice that governs independent energy price comparison sites. It insists that its members follow key principles for how they must operate their service. So using a site with the Confidence Code logo means that the process of switching energy supplier should be easier, more reliable and reassuring for you. Further information on the rules Ofgem-accredited sites must stick to can be found in the Confidence Code code of practice.

D

Data Aggregator (DA)

As part of the settlement process, the party appointed by an electricity supplier to package up consumption data to meet the requirements set out in the Balancing and Settlement Code.

Data Access and Privacy framework

The government has developed a data access and privacy policy framework to determine the levels of access to energy consumption data from smart meters that suppliers, network operators and third parties should have. It also establishes the purposes for which data can be collected and the choices available to consumers.

Data Collector (DC)

As part of the settlement process, the DC is the party appointed by an electricity supplier to retrieve and process meter readings to meet the requirements set out in the Balancing and Settlement Code.

Data and Communications Company (DCC)

This is a company that manages the data and communications to and from domestic consumers' smart meters.

Demand-side response (DSR)

Actions taken by consumers to change the amount of energy they take off the grid at particular times in response to a signal, such as a price.

Distribution network operator (DNOs)

DNOs are the companies that are licensed by Ofgem to maintain and manage the electricity distribution networks in Great Britain.

Dynamic time-of-use tariff

A dynamic time-of-use tariff is one that provides for price or pricing structures to vary at short notice in response to market events, subject to contractual terms.

E

Electricity supplier

A company licensed by Ofgem to sell energy to and bill customers in Great Britain.

Electricity Settlement Expert Group (ESEG)

As part of Ofgem's work to identify options for using half-hourly data in settlement, we convened an [expert group](#) of stakeholders. This served to leverage members' industry expertise and to benefit from their diversity of ideas and viewpoints. Seven meetings were held between June and November 2014.

ELEXON

This is the organisation responsible for administering the Balancing and Settlement Code (BSC). The role and powers, functions and responsibilities of ELEXON are set out in Section C of the BSC.

Energy and Climate Change Select Committee

The Energy and Climate Change Committee was established by the House of Commons in 2008 to scrutinise the work of the Department of Energy and Climate Change.

F

Feed in Tariff (FIT)

The Feed-in Tariffs scheme is a government programme designed to promote the uptake of small-scale renewable and low-carbon electricity generation technologies. The scheme requires participating licensed electricity suppliers to make payments on both generation and export from eligible installations.

G

Gemserv

Gemserv was established in 2002, growing out of a Special Purpose Vehicle (SPV) established to govern the domestic retail electricity market in 1998. Gemserv is a market design, governance and assurance service provider.

Grid Supply Point Group Correction Factor (GCF)

GSP Group Correction Factors are used to ensure that the total energy allocated to suppliers in each settlement period in each GSP Group matches the energy entering the GSP Groups from the transmission system, adjoining GSP Groups and through embedded generation.

I

Imbalance charge

These are charges that suppliers (and other market participants) pay for any difference between contracted and metered volumes. See also settlement process.

M

Master Registration Agreement (MRA)

The Master Registration Agreement (MRA) provides a governance mechanism to manage the processes established between electricity suppliers and distribution companies to enable electricity suppliers to transfer customers. It includes terms for the provision of Metering Point Administration Services (MPAS) Registrations.

N

New Electricity Trading Arrangements (NETA)

The arrangements under which electricity is traded in the UK wholesale electricity market. NETA has been in place for England and Wales since 2001, and changed its name to the British Electricity Trading and Transmission Arrangements (BETTA) in 2005 with the addition of Scotland.

National Grid Electricity Transmission (NGET)

NGET is the System Operator for the electricity transmission system in Great Britain, with responsibility for making sure that electricity supply and demand stay in balance and the system remains within safe technical and operating limits.

Non-half-hourly settlement (NHH)

As part of the settlement process, NHH settlement is the arrangement for estimating how much energy a supplier's customers use in each settlement period based on meter readings spanning longer intervals. These consumers are not settled using half-hourly consumption data.

O

Ofgem

The Office of Gas and Electricity Markets (Ofgem) is responsible for protecting gas and electricity consumers in Great Britain. It is governed by the Gas and Electricity Markets Authority.

P

Performance Assurance Framework (PAF)

Under the Balancing and Settlement Code (BSC), the PAF is in place to provide that: energy is allocated between suppliers efficiently, correctly and accurately; suppliers and the agents they appoint to support the settlement process transfer metering system data efficiently and accurately; and calculations and allocations of energy and the associated trading charges are performed in line with the requirements set out in the BSC.

Profile Class

Consumers that are not settled using actual meter readings for each settlement period are grouped into one of eight Profile Classes. For each Profile Class, a load profile is created that estimates the consumption shape of the average consumer. This load profile (or variations of it) is used to determine the consumption in each half hour for all consumers assigned to the Profile Class. See also non-half-hourly settlement.

Profiling and Settlement Review Group (PSRG)

The PSRG was a sub-group of the Supplier Volume Allocation Group (SVG) from 2010-15. The PSRG reported to the Balancing and Settlement Code Panel and was tasked with maintaining the integrity of the settlement arrangements in the short to medium term as smart meters are rolled out.

R

[Retail Market Review](#)

The Retail Market Review was an Ofgem project with the aims of making the retail energy market work better at serving the interests of consumers and enabling individual consumers to get a better deal from energy suppliers.

S

[Settlement period](#)

The period over which contracted and metered volumes are reconciled. This is defined as a period of 30 minutes. See also settlement process.

[Settlement process](#)

Settlement places incentives on generators and suppliers to contract efficiently to cover what they produce or their customers consume respectively. For suppliers, it operates by charging for any difference between the volume of electricity that they buy and the volume that their customers consume.

[Significant Code Review \(SCR\)](#)

The SCR process is designed to facilitate complex and significant changes to a range of industry codes. It provides a role for Ofgem to undertake a review of a code-based issue and play a leading role in facilitating code changes through the review process.

[Smart Energy Code \(SEC\)](#)

The Smart Energy Code (SEC) is a multi-Party agreement, coming into force under the DCC Licence, which defines the rights and obligations of energy suppliers, network operators and other relevant parties involved in the end to end management of smart metering in Great Britain.

[Smart meter](#)

A meter which, in addition to traditional metering functionality (measuring and registering the amount of energy that passes through it), is capable of providing additional functionality, for example recording consumption in each half hour of the day and of being remotely read is known as a smart meter. It must also comply with the technical specification set out by the government.

[Static time-of-use tariff](#)

A time-of-use tariff that fixes in advance the peak and off-peak periods and the prices applied at these times.

[Supplier Volume Allocation \(SVA\) arrangements](#)

Within the Balancing and Settlement Code, the SVA arrangements are for allocating energy volumes to suppliers in each half hour of the day.

System Operator

The entity charged with operating the Great Britain high voltage electricity transmission system, currently National Grid Electricity Transmission Plc.

T

Time-of-use (ToU) tariffs

Energy tariffs that charge different prices at different times of the day, week, month or year are known as time-of-use tariffs. See also dynamic time-of-use tariff and static time-of-use tariff.

Appendix 3 - Feedback Questionnaire

1.1. Ofgem considers that consultation is at the heart of good policy development. We are keen to consider any comments or complaints about how this consultation has been conducted. We are also keen to get your answers to these questions:

1. Do you have any comments about the overall process adopted for this consultation?
2. Do you have any comments about the overall tone and content of the report?
3. Was the report easy to read and understand, or could it have been better written?
4. To what extent did the report's conclusions provide a balanced view?
5. To what extent did the report make reasoned recommendations for improvement?
6. Please add any further comments.

1.2. Please send your comments to:

Andrew MacFaul

Consultation Co-ordinator
Ofgem
9 Millbank
London
SW1P 3GE
andrew.macfaul@ofgem.gov.uk