

Target Operating Model Design Principles

1. Purpose of the Design Principles

- 1.1. The SCR Launch Statement sets out our plan to implement an enduring process for HHS for domestic and smaller non-domestic consumers' electricity usage that delivers benefits for consumers by maximising the opportunities smart metering provides in enabling a smart, flexible, energy system.
- 1.2. Ofgem's outcomes for the market-wide half-hourly settlement (HHS) project are set out in the project objectives, which form part of the Business Case. These are as follows:
 - incentivise all retailers and suppliers (current and future) to encourage customer behaviour in their electricity demand that contributes to a more cost-effective electricity system;
 - promote the efficient use of, and investment in, energy infrastructure that delivers the Government's objectives of a flexible, safe and secure low-carbon electricity system; and
 - minimise undesirable distributional effects on consumers.
- 1.3. The Design Principles, set out below, provide guidance and strategic direction to the Design Working Group (DWG) and Design Advisory Board (DAB) whose respective roles are to develop and review products for the Target Operating Model (TOM) to realise reforms towards HHS¹. Ofgem will also use these Design Principles to inform its decision-making when considering whether to accept or reject recommendations from the DWG.
- 1.4. Design Principles are provided for a number of processes that will require consideration within the TOM design work. They set out our desired strategic outcomes for market-wide HHS, in the context of the high-level objectives set out in 1.2 above.
- 1.5. Once finalised, these Design Principles will ensure there are agreed criteria for delivering various processes within the settlement arrangements. They will provide transparency and clarity around achievable aims, agreed by both those participating and not directly participating in the design work. This is important to the governance of the project to ensure there is clear and efficient decision-making.
- 1.6. The Design Principles are to be read in conjunction with the following strategic objectives for the TOM, which set out that settlement arrangements should be designed to:
 - introduce HHS processes for profile class 1-4 customers with advanced or smart metering;
 - implement, maintain and operate an efficient, economic and coordinated settlement processes;
 - promote an electricity system that delivers the Government's objectives as simply and cost-effectively as possible, minimising the costs to current and future consumers of moving to a low-carbon electricity system while maintaining security of supply, system efficiency and system reliability;

¹ The Target Operating Model will outline how the settlement arrangements and supporting institutions will deliver reform.

- incentivise current and future suppliers and other energy service providers to help customers to shift or adapt their consumption behaviour, contributing towards a more cost-effective electricity system;
- promote effective competition in energy markets, including by reducing the barriers to entry. This includes suppliers and future market participants offering new products and services;
- promote the interests of consumers, for example being mindful of potential customer impacts and experience including interactions with their supplier and other relevant parties;
- not impede the entry and development of new energy technologies and business models (for example, those listed in paragraph 2.14) and facilitate their interaction with the settlement process;
- be consistent with Ofgem decisions made as part of this SCR on policies relating to access to half-hourly data for settlement purposes, consumer protection and the question of whether or not to centralise functions currently performed by supplier agents; and
- take account of relevant Ofgem and Government change programmes and policy decisions, and be flexible to deal with future policies and initiatives;
- update the safeguards in place to deal with the catastrophic failure of settlement arrangements.

1.7. The TOM design work should be consistent with Ofgem’s principal objective and general duties.

2. Detailed Design Principles

Settlement timetable

- 2.1. The TOM design work provides an opportunity to consider how to reduce the settlement timetable to maximise the opportunities provided by smart metering and to achieve the strategic goals of HHS. In particular, consideration should be given to the extent to which a reduced settlement timetable would reduce credit cover costs for existing suppliers and new entrants.
- 2.2. Full consideration is to be given to how reduced timings (including post reconciliation dispute runs if needed) of each settlement run and a reduced number of runs will create a settlement system which benefits all parties and maintains robust performance assurance.

Data retrieval, processing and validation

- 2.3. The TOM design work will seek to maximise efficiency and realise consumer benefits to deliver the best achievable balance between speed, accuracy and minimisation of data errors within reduced settlement timescales. To achieve this, the TOM design work will consider:
- which enduring roles and responsibilities for data retrieval and processing promote a relatively simple model whilst avoiding the potential to stifle innovation and competition in delivering these benefits; and
 - as a starting point, consider how best to build upon the changes to data validation and processing introduced under elective HHS.

For the avoidance of doubt, Ofgem will take the policy decision on whether or not to centralise functions currently performed by supplier agents.

Data estimation

- 2.4. To maximise the opportunities provided by smart metering and arrangements for accurate settlement, the TOM should only provide for estimation where necessary. In particular:
- the decision on profiling and estimation should balance reducing costs with retaining adequate accuracy for robust performance assurance²;
 - where applied, the process of estimation should be transparent, and as simple and cost-effective as possible, lowering barriers to entry for new entrants;
 - it should limit manual intervention in the estimation process; and
 - the contingency for a catastrophic failure of settlement arrangements will also need to be updated.

Treatment of non half-hourly settled customers

- 2.5. A number of customers may not have transitioned to HHS. The TOM design work will need to consider how to settle these consumers in the most cost-effective manner whilst limiting impacts on the accuracy of settlement. Full consideration should be given to how to apply reformed HHS arrangements to any remaining non half-hourly sites, to examine the impacts and to ensure appropriate treatment.

Change of Measurement Class (CoMC)

- 2.6. The TOM design work will need to address the transition period involving the mass migration of sites to HHS. It should consider how best to develop an effective and efficient CoMC process (or other method for migration to HHS) in light of any experience gained from the expected increased migration to HHS arising from changes introduced by elective HHS. This includes who should hold Meter Technical Details for installed smart meters, any necessary changes to relevant industry codes and, if required, how to accommodate change of supplier and/or metering system alongside the CoMC. This will require robust processes for CoMC (or other method for migration to HHS) to be in place. Solutions should aim to realise significant efficiency and consumer benefits.

Settlement of export

- 2.7. The TOM design work should consider the potential benefits of including export in market-wide HHS. Specifically:
- At a minimum, improvements to the process for settlement of export should provide solutions for elective take-up;
 - Any settlement arrangements including export should facilitate accurate measurement and allocation of electricity volumes;
 - The solutions to the settlement of import and export should align in the long term to realise the full benefits of settlement reform. This will improve the accuracy of balancing at distribution network level into the mid-2020s to support the increased uptake of micro-generation; and

² The TOM design work should be mindful of any outcomes which arise from ELEXON's current review of the Performance Assurance Framework. More information about the Performance Assurance Framework can be found on ELEXON's website at <https://www.elexon.co.uk/reference/performance-assurance/performance-assurance-framework-review/>.

- The enduring settlement arrangements for export should facilitate the implementation of future policy on small-scale low-carbon generation.

Unmetered supplies

- 2.8. The TOM design work should consider HHS of unmetered supplies (both for non half-hourly and existing half-hourly unmetered supplies). The potential to reduce the amount of inaccurate data processed at each settlement run should be considered to provide improvements to settlement performance whilst limiting the burden of change where potential benefits are limited.

Network Charging

- 2.9. The TOM should facilitate changes aimed at improving the accuracy of data used for the billing of, and determining charges for, distribution and transmission networks. These changes should be appropriate for delivering benefits for domestic and small non-domestic consumers settling on a half-hourly basis.
- 2.10. The TOM design work should also take account of and accommodate any changes to the network charging regime which have an impact on HHS.

Transition

- 2.11. As part of the Business Case, Ofgem will develop an approach for the transition to HHS with the aim of providing certainty to industry on the timeframe for change and expectations on them. This will consider the costs and benefits of different implementation timeframes based on the commercial decisions that affect organisations in the transition, including the resources required to manage concurrent industry changes. The work on the transitional approach will need to be informed by the design of the TOM as it develops.
- 2.12. The TOM design work will include the design of settlement arrangements which will give effect to the transitional approach outlined by the Business Case. The TOM design work will also provide information for the Business Case on the costs and benefits of different timeframes for and approaches to the transition.

Innovation

- 2.13. It is expected that new technologies and energy businesses models will offer customers a range of new energy services and smooth the transition to a smarter energy market. The TOM should enable, and not impede the entry of these new energy services into the market.
- 2.14. Specific consideration should be given in the TOM design work to how settlement arrangements could interact with, and facilitate new technologies and business models. For example, demand side response, peer to peer networks, micro-generation, storage and electric vehicles.
- 2.15. Consideration should also be given to how the new arrangements will be monitored and adapted as needed in response to future innovation (such as distributed ledger technology).

Specific measures of success

Ofgem will use the measures below as a guide when taking decisions on options and recommendations for the TOM design. Arrangements should:

- make the cost of supplying customers more reflective of actual half-hourly consumption, thereby:
 - promoting the efficient use of, and investment in, energy infrastructure to minimise system costs for all consumers;
 - creating opportunities for consumers to benefit from increasing the granularity of their metering data;
- reduce the elapsed time required to complete the settlement of any given consumption period;
- reduce the settlement error (i.e. the difference between generation and consumption) that has to be smeared across suppliers and reduce post final reconciliation runs changes;
- minimise the costs of data collection and settlement processing³;
- ensure appropriate customer treatment across all types of supply point by suppliers regardless of meter type;
- promote effective competition in energy markets;
- ensure the solution is robust and flexible to accommodate change;
- minimise delivery risks for participants;
- ensure that customers are moved across to market-wide HHS in accordance with the transition approach set out by the Business Case;
- reduce the Balancing and Settlement Code (and other codes where relevant) credit cover costs to participants; and
- not impede the entry and development of new technologies and energy business models which may offer new energy services to customers and smooth the transition to a smart, flexible energy system.

³ For the avoidance of doubt, Ofgem will take the policy decision on whether or not to centralise functions currently performed by supplier agents.