



Making a positive difference
for energy consumers

Feedback Form

Electricity retail market-wide half-hourly settlement: consultation

The deadline for responses is 14 September 2020. Please send this form to HalfHourlySettlement@ofgem.gov.uk once completed.

Organisation:

Contact:

Is your feedback confidential?

NO

YES

Unless you mark your response confidential, we will 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 will 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 General Data Protection Regulation (EU) 2016/679 and Data Protection Act 2018, 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.

Target Operating Model (TOM)

1. We propose to introduce MHHS on the basis of the Target Operating Model recommended by the Design Working Group last year. Do you agree? We welcome your views.

AIMDA agree that MHHS is the way forward for the Electricity Market and will bring significant benefit to Suppliers and Consumers thus enabling a more flexible and innovative market.

We see many benefits of the proposed Target Operating Model and agree with many of the groupings of services that have been formed. We have however identified 2 key areas of improvement which has brought about an alternative TOM which AIMDA have collaboratively worked on. Within this we have suggested the use of a decentralised data lake to support MHHS; thus alleviating the main concern from Ofgem around access to dis-aggregated data in order that non-settlement functions could be performed by parties out with the BSC. A secondary feature of the alternative TOM is that each Data Service has an Aggregation function within it to support continued efficiency in core settlement processes. We provide further detail on this within Attachment A and also in Question 2.

The AIMDA strongly agree that any organisation who would manage access to the non-aggregated data should in no way be able to profit from this detailed view and should be prevented from expanding their role in any way which may lead to a commercial offering being developed.

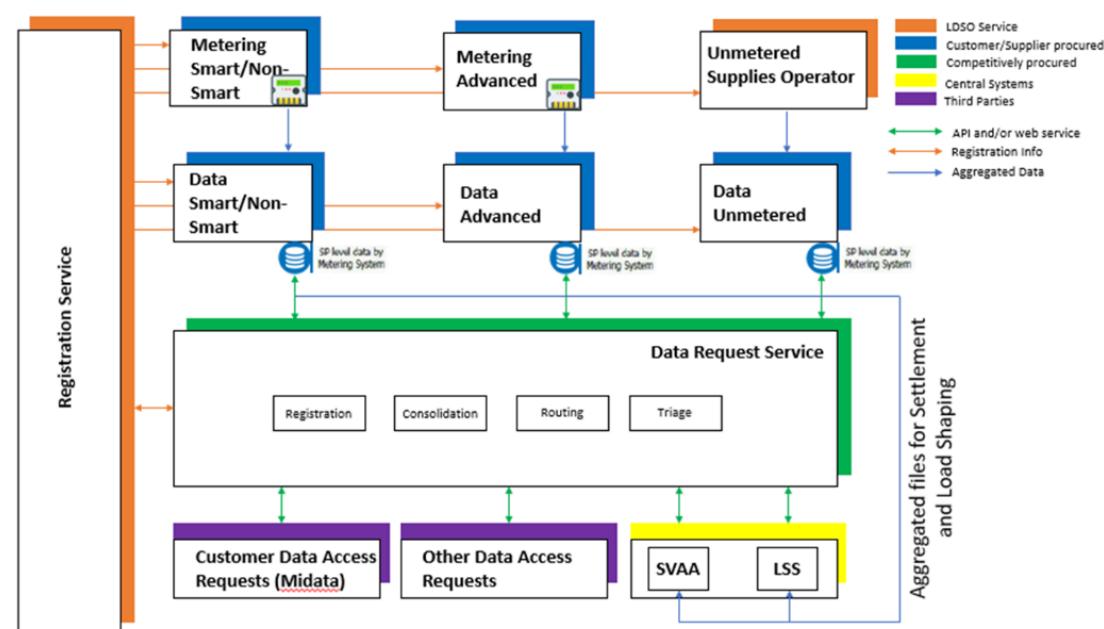
AIMDA cannot understand any benefit that could be achieved through removing competition from Data Aggregation and instead moving this function to be a centralised service. AIMDA has on several occasions expressed views of the importance of the Data Aggregation role and the benefits this brings to Suppliers and Consumers. We have also previously stressed that Elexon does not require non-aggregated data to perform settlement or deliver a “flexible, scalable and open platform which will ensure data is available to the market”. We also believe that the cost of passing non-aggregated data to BSC Central Settlement Services would increase costs to all significantly, not to mention the storing and processing of data on both sides.

Our proposed alternative solutions is detailed further in Question 2 and in Attachment A.

2. Ofgem's preferred position is that HH electricity consumption data should be sent to central settlement systems in non-aggregated form. Do you agree?
We welcome your views.

AIMDA does not agree that HH data should be sent to central settlement in a non-aggregated form. We firmly believe that that HH data should be available to the central settlement services but does not need to be held by these services and systems.

AIMDA has proposed an alternative Target Operating Model, attached to this response, which articulates our views in a greater level of detail. Our alternative TOM (shown diagrammatically below) would secure greater benefits through reduced costs, improved efficiency and ease of implementation, whilst maintaining open access to non-aggregated consumption data for settlement and other purposes.



The removal of data aggregation as a function leads to a fundamental inefficiency. Settlement does not need to know about 30 million metering systems to perform its calculations. Currently, central systems only needs to know about meter specific HH data on a very small percentage of sites at any one time (currently less than 0.01% of the market). Even with massive increases in this need, it still does not justify the creation of market-wide data store. The proposed solution from the DWG is not only highly wasteful in terms of data transport and storage costs it also creates a single vulnerability from a security and privacy perspective.

Ofgem acknowledges that data will always need to be pre-aggregated in some form before being used in settlement calculations. AIMDA's view is that this should be left as-is, and data aggregation should continue as an agent-delivered activity.

HH data will already be collected, validated, reported and stored by the preceding function, the data service. The data service should continue to provide a data aggregation function to make settlements more efficient.

In addition to supporting the core settlement process, the data service aggregation function would also support:

The load shaping service, by providing a summary file of the average load shapes for that data service's meter points, which can be quickly, and at a low-cost, be processed across all data service providers to create industry average load shapes

Real-time access to metering-point level validated half-hourly data for use in secondary settlement calculations by the central settlement systems

Transparent and unencumbered access to metering-point level validated half-hourly data to other parties and institutions with legitimate processing needs through a common industry API.

On this last point, to support an open and common access to half-hourly data, the AIMDA alternative TOM proposes a new service, the Data Request Service (DRS). This service enables any valid request to be distributed to the individual Data Service agents holding the data and collates their responses back to the data requester. Triage of data requests for privacy, consent, security and confidentiality purposes would be a feature of the DRS, just as it is for the MDS under the DWG's TOM. Through synchronisation with the Registration Service, the DRS could identify the correct combination of Data Services it needs to forward that request to. Upon receipt of such a request, each Data Service would be required to output the result to the DRS within a defined SLA timescale. The DRS would consolidate responses from individual Data Services to return to the requesting party. API access would be available to industry participants.

Overall, this means that for Settlement purposes, consumption data is only transferred in aggregated form but is accessible non-aggregated or in different configurations depending on the requirement. In terms of the meter-to-bank settlement process, the alternative TOM more closely resembles the existing market model and therefore represents a simpler, less intrusive and more proportionate means of achieving Ofgem's policy objectives under the SCR.

Comparison of the costs between the alternative TOM and the DWG's TOM is hampered by the lack of detail around the breakdown of "central costs" in the IA. However, the AIMDA alternative TOM will clearly be lower-cost and faster to implement, as well as lower-cost to operate.

Settlement timetable

3. We propose that the Initial Settlement (SF) Run should take place 5-7 working days after the settlement date. Do you agree? We welcome your views.

We agree that exceptions should not be the basis for developing the settlement timetable but caution that they must be factored into any consideration of accompanying performance targets. Reduced settlement accuracy is not the desired outcome of this SCR and so these targets will have to be set suitably high. The risk, as highlighted by several respondents to the RFI, is the additional cost this may attract from increased frequency of manual read visits and the potential for this to outweigh the benefits of a shorter SF Run.

The IA only gives a qualitative description of the benefits to an earlier SF Run. Ofgem should try to quantify this benefit in order to conduct more robust analysis around the suitability of shortening the SF run. There is a link between increased estimated data and higher Trading Charges. If there is a greater proportion of estimated data at the SF run under the new timetable would this therefore actually increase the level of credit cover required despite being calculated over a shorter period? Or could any benefits be subsequently nullified? We would expect this sort of analysis to support any reduction in the timing of the SF Run.

The shorter timing also reduces resilience to potential market-wide issues like DCC service downtime and Mobile Network outages. Given the reliance on both for large segments of the market, we feel it would be better to have an SF run that takes place at least 7WDs after the settlement date to allow for a full recovery from either event.

4. We propose that the Final Reconciliation Run (RF) should take place 4 months after the settlement date. Do you agree? We welcome your views.

We have observed that at industry level there is little variation in overall energy and proportion of actual to estimated volumes between each Reconciliation Run (R1-RF) under the existing timetable for HH settlement. This appears to support reducing the RF Run to 4 months as in most cases settlement positions are final within a month of consumption.

5. We propose that the post-final (DF) settlement run should take place 20 months after the settlement date, with the ratcheted materiality proposals described in chapter 4. Do you agree? We welcome your views on this

proposal, and in particular about its potential impact on financial certainty for Balancing and Settlement Code parties.

The proposal for the DF Run to take place up to 20 months after the settlement date with ratcheted materiality is an appropriate balance between allowing opportunity to correct genuine errors and ensuring financial certainty for relevant Parties. An additional benefit is the incentive it places on Parties to ensure settlement is accurate in the first place, which will hopefully boost the overall health of the market.

Export-related meter points

6. We propose to introduce MHHS for both import and export related MPANs. Do you agree? We welcome your views.

Yes

7. We propose that the transition period to the new settlement arrangements should be the same for import and export related MPANs. Do you agree? We welcome your views.

Yes

Transition period

8. We propose a transition period of approximately 4 years, which at the time of analysis would have been up to the end of 2024. This would comprise an

initial 3-year period to develop and test new systems and processes, and then 1 year to migrate meter points to the new arrangements. Do you agree? We welcome your views.

On review of the Draft Impact Assessment and Ofgem's description of the information received from the RFI, we can see why Ofgem would prefer option 2 above those of 1 and 3, however we would question what the rationale was behind limiting the options to three? Options covering import/export and Import only over the two timescales look to be missing from the Draft IA and therefore, presumably the RFI.

In a direct answer to Ofgem's proposed transition period, we do not believe that 3 years is an adequate period to design, build and test the new systems.

Figure 2 'Ofgem Settlement Reform Programme Plan', indicates a 6-month period to implement the Code and License changes, considering the continuing affect and longevity of the covid-19 pandemic and over-lapping code change projects (Retail Energy Code version 2), will the resources be available within the Code and License bodies to ensure that the updates are complete within a 6-month period?

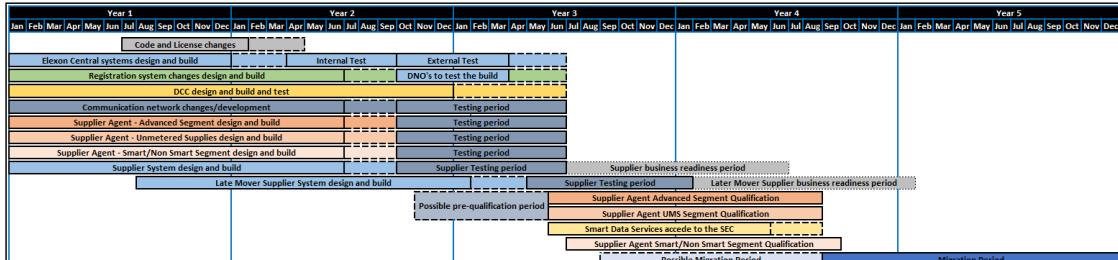
The 18-month Design and Build period currently heavily overlaps with both the Faster Switching programme and Retail Energy Code version 2; this will stretch the resources of industry parties, whether they are completing this task for one or more of the TOM roles, and especially in the post-covid 19 climate. Covid-19 has meant that businesses have focused on essential business-as-usual activities and cost saving measures, how quickly this focus can be lessened is yet to become clear. We propose that the timeline detailed in figure 2 is updated to build in contingency periods to allow for delays; shown in the revised programme plan below (response attachment B).

Regarding the 1-year migration period, this needs to be viewed in terms of the tasks expected to be completed within 12 months. The DWGs transition model is based on four stages, if all stages were to be equal in duration then each stage would be running for 3 months before the new stage is introduced. Is 3 months per stage enough time to ensure that the operating model is performing as it should be? It could be argued that the first few stages do not need a 3 month run period, therefore increasing the period that stage 4 will run, however, again the question remains, does this give each stage the required amount of time for issues to be identified and rectified before cut-over? AIMDA represents eight of the Supplier Agents working in the existing Settlement structure and from our combined experience, at the current rate of industry issue correction, we have strong concerns that 12 months is not long enough. Again, we propose that the timeline detailed in figure 2 is updated to build in a contingency period to allow for an extended migration period; shown in the revised programme plan below.

At the time of analysis the 4 year period came to the end of 2024, one of the DWG's four minimum requirements for MHHS transition is 'a reasonable percentage of Smart meters rolled out', which we can only deduce would be the 85% required saturation by completion of the Smart meter roll out programme. We are all aware that the smart meter rollout deadline has now been extended, optimistically, to mid-2025, the continuing covid-19 pandemic and consumer acceptance of smart meters, could result in further delays to the reasonable percentage being reached. Frontier Economics' recent research on behalf of Energy UK found

at pre-covid19 installation levels only 54-68% of relevant premises are likely to have a smart meter by the previous 2024 deadline. This all needs to be factored into the transition period.

With the responses that we have given to this question, our current view is that the transition period for the DWG preferred TOM will take 5 rather than 4 years, we have detailed this extended timeline in the figure below (response attachment B);



9. We have set out high-level timings for the main parties required to complete a successful 4-year transition to MHHS. Do you agree? We welcome your views, particularly if your organisation has been identified specifically within the timings.

The high-level timings Ofgem have set out in Figure 2 ‘Ofgem Settlement Reform Programme Plan’ do raise concerns with the members of AIMDA;

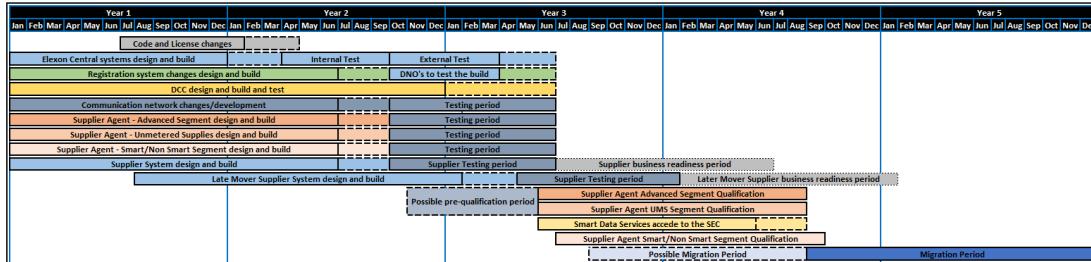
Figure 2 shows a 3-month lead time between the AWG Design Recommendation being delivered and the start of the 18-month design and build period. At what point in the transition period will the Programme Party Coordinators be introduced? Many parties will look to start the process of reviewing the design prior to the designated design and build period and will need a contact point within the programme management structure to contact where clarification is required.

The design and build period indicated covers all TOM roles, many of the AIMDA members will be looking to progress in multiple roles and this would therefore need to be completed in parallel, during a period which heavily overlaps with both the Faster Switching programme and Retail Energy Code version 2; this will be resource intensive. In addition to system design, build and test, operations training for the TOM will commence within this period to meet the start of the qualification period. Covid-19 has meant that businesses have focused on essential business-as-usual activities and cost saving measures, how quickly this focus can be lessened is yet to become clear.

Though the TOM structure is very different to the present Settlements structure, many of the new roles are adapted from or bear a similarity to current roles. The members of AIMDA have systems and experiences to build upon to meet the new criteria, and yet we are concerned about the allotted timeframe; is 18 months a realistic timeframe for Elexon to build a completely new central system? In their response to the IA, they state that they can complete the design, build and test in a 2-year period, which has been reflected in Figure 2, however, Figure 2 does not allow for any delays in this process. We propose that the timeline detailed in figure 2 is updated to build in contingency periods to allow for delays; shown in the revised programme plan below.

The high-level timings indicate a 12-month qualification period. Will there be enough auditors to complete the qualifications across all the market segments and participants within these 12 months? Qualification is generally a lengthy process involving site visits and witness testing by Elexon and auditors KPMG. The ongoing covid-19 pandemic has meant a reduction in on site visits, changes to normal business operations, travel restrictions and local lockdowns, this could result in qualification taking much longer than expected. There is concern that without significant contingency in the qualification timelines, one or more participants could be left without qualification through no fault of their own. Adding to the uncertainty of whether these timings are possible, is that there has yet to be an indication of the scale of the qualification process. Will qualifications for the current settlements model be considered when qualifying against the adapted roles, almost as a ‘light’ qualification or will the qualification into the new TOM require everyone (new and existing Agents) to go through the same level of rigorous testing? For those going through multiple TOM role qualifications, this will be a resource intensive time and may push companies to reconsider the roles they look to qualify for. Due to our genuine concerns over the qualification period,

we have updated Ofgem's high-level timings within the Settlement Reform Programme Plan to build in additional time that will be required; shown in the revised programme plan below (response attachment B).



10. What impact do you think the ongoing COVID-19 pandemic will have on these timescales?

Covid-19 will have a major and lasting negative impact on timescales; while the exact extent of the impact will only truly become known with the benefit of hindsight, it has changed businesses, roll out plans and end user behaviour dramatically. Moreover, the recent increase in Covid-19 cases is placing additional restrictions on specific industries and geographical areas; should the infection rate continue to rise the UK may suffer another lockdown.

MHHS is reliant on the SMETS 2 rollout, which has been drastically affected by the Covid lockdown. Aside from the lockdown, where only essential work could be carried out, the MO effectiveness (install success rates) have decreased significantly due to a change in customer behaviour. Businesses have focussed on essential business-as-usual activities and cost saving measures, with only emergency site visits taking place as per government guidelines. We do not expect this trend to reverse significantly in the short term. The medium-term impact is harder to forecast. With the introduction of local lockdowns, job cancellation rates could be very high. We anticipate customer resistance, particularly from micro-businesses, where customers are unwilling to accept the power outage during a meter exchange.

Having fewer SMETS 2 meters in the market than anticipated could be mitigated by allowing the use of AMR meters, which deliver equal benefits to SMETS. Restrictions imposed on the market result in a lack of choice for microbusiness customers despite AMR having a far greater penetration rate over that of all other non-dumb technologies in that market. Additionally, the lack of enough user roles makes the installation and maintenance of SMETS2 meters impossible without the use of a supplier adaptor, resulting in sub-par economic solutions and reduced roll out effectiveness. We strongly suggest that either AMR be allowed within the microbusiness market or that additional user roles are created with urgency to allow for independent SMETS2 installation and data retrieval.

There is a possible Covid-19 impact on the ability of all market participants to become qualified within the Ofgem timeframe. Qualification is generally a lengthy process involving site visits and witness testing by Elexon and auditors KPMG. The reduction in on site visits, changes to normal business operations, together with travel restrictions and local lockdowns, could result in qualification taking much longer than expected. There is concern that without significant contingency in the qualification timelines, one or more participants could be left without qualification through no fault of their own.

Data access and privacy

11. We propose that there should be a legal obligation on the party responsible for settlement to collect data at daily granularity from domestic consumers who have opted out of HH data collection for settlement and forecasting purposes. Do you agree that this is a proportionate approach? We welcome your views.

Yes

12. Existing customers currently have the right to opt out to monthly granularity of data collection. We are seeking evidence about whether it is proportionate to require data to be collected at daily granularity for settlement and forecasting purposes for some or all of these consumers. We welcome your views.

AIMDA believe that it is proportionate to require customers to allow daily granularity of data consumption collection for settlement and forecasting.

Ideally, real half-hourly data should be used as far as possible, as this will encourage the most efficient operation of the entire energy system, including customer behaviour. However, privacy concerns around the use of half-hourly data are real issues for some customers. Dropping back to daily meter readings in place of half-hourly data and synthesising the half-hourly data using the average load shapes is the next best option: it means that settlement is reasonably accurate, whilst preserving the privacy of the consumer.

13. Should there be a central element to the communication of settlement / forecasting and associated data sharing choices to consumers? For example, this may be a central body hosting a dedicated website or webpage to which suppliers may refer their customers if they want more information. If yes, what should that role be and who should fulfil it? We welcome your views.

Yes. AIMDA believe that this should be a 'low touch' role and that the ideal solutions would be an information page on either the Ofgem or citizens advice website; the body carrying out this service should be an impartial body and removed from the electricity industry.

Consumer impacts

14. Do you have additional evidence which would help us refine the load shifting assumptions we have made in the Impact Assessment?

AIMDA is not able to provide any additional evidence in relation to load shifting assumptions.

AIMDA does have a few observations:

- The lack of data suggests there is high probability that benefits are overestimated because the number of people who look for TOU tariffs and load shift will be limited
- The lack of data is even more problematic when considering the non-domestic market
- In domestic households it is probably safe to assume that decision maker, bill payer and person actively engaging in load shifting are all the same person. This will not be true for large numbers of non-domestics. Accordingly, even limited data to support nondomestic load shifting is likely to be overestimated given it will not be drawn from all those with an interest
- Non-domestics are more likely engage in expenditure forecasting and therefore stable rates and ability to forecast future expenditure are more important than load shifting
- The range of SMEs and Microbusinesses in the UK makes it difficult to identify anything that will have universal appeal to encourage load shifting
- SMEs and Microbusinesses are time poor, which means messaging them about the benefits will have limited impact

AIMDA believe that in order for SMEs and Microbusinesses to secure the maximum potential benefits of load shifting, there needs to be a competitive market for those technologies that is free to innovate and develop a variety of solutions that meet the diverse requirements of businesses.

AIMDA would like to see more detail on how the benefits have been calculated and whether consideration has been given to how benefits are being calculated in relation to the Smart Metering programme overall. Without this detail and breakdown there is a concern the benefits of the programmes are being double counted.

15. Do you have any views on the issues regarding the consumer impacts following implementation of MHHS? Please refer to the standalone paper we have published for more detailed information.

The standalone paper (“Paper”) does demonstrate several concerns about how and where the benefits of MHHS will be achieved in relation to consumer impacts. Without understanding this in greater detail the industry could develop a solution that provides sub-optimal or even negative impacts for consumers.

To take one example is the analysis around consumer load shifting and what it “could” deliver. It is assumed that load shifting will lead to direct savings on energy bills. However, there are so many dependencies and variables that it is difficult to imagine a great deal of benefit flowing all the way to consumers. First, A model would need to be developed that enables load shifting. Second, Participants (presumably suppliers) would need to come up with innovative products. Third, Consumers would need to be able to load shift. Fourth, Consumers would need to be sufficiently engaged to do this.

None of this is certain and furthermore it cannot be demonstrated that the new behaviours will endure even if all the other elements are in place. Evidence is lacking in both segments but appears to be worse in the non-domestic segment - to give one example (to quote the Paper) “there is some domestic consumer interest” and “There is less firm evidence about small non-domestic consumers’ attitudes towards flexible usage”

All the research to date has demonstrated that:

- It is hard to draw quantitative conclusions from the research to date (as indicated in the Paper – pg. 1 and 3) which presumably has an impact on the values associated with benefits.
- The research to date only provides possible outcomes. The word “could” is used 104 times which indicates while some outcomes could be achieved there is no certainty of them achieving anything or at least not enough to demonstrate the perceived benefit
- The Paper distinguishes between Domestic and Small Non-Domestic segments demonstrating that outcomes are different between the segments which will need careful consideration when finalising proposals. It would be inappropriate to hide behind the refrain that microbusinesses purchase energy like domestics when confronted with this information.
- This is further compounded by the acknowledgement that there is such wide diversity between each segment that e.g. understanding load shift potential (Paper – pg. 7) or communication forms for SMEs (Paper – pg. 10) is difficult to do
- Changing consumer behaviour will be important but the Paper reveals that making sure this is enduring will be a challenge given that those monitoring usage decline over time (pg. 13) and that the evaluation from the BEIS reports will be published later this year

The observations above lead AIMDA to believe that:

- Maximum choice, competition and flexibility needs be provided (particularly to SMEs and Microbusinesses) to ensure that maximum benefits can be gained
- Monopolising/centralising of services will detract from the ability of the industry to provide flexible services to meet the needs and requirements of consumers from both segments but certainly in the non-domestic segment
- Extrapolating concepts from the domestic market will not have the same impact within the non-domestic market

MHHS IA Consultation – AIMDA Response - Attachment A: An Alternative TOM for MHHS



Programme management

16. Do you agree we have identified the right delivery functions to implement MHHS? We welcome your views.

We agree with the delivery functions as set out in 9.3 of the MHHS Draft IA. Ensuring that the overall view and end-to-end project co-ordination stays within one office (Programme Management Office) will result in both Ofgem SRO and the qualifying parties, such as the members of AIMDA, having confidence in the project staying on track and progressing at the required pace.

We also agree that having a Systems Integrator will be beneficial for those market participants who will need to interface with the new central settlement system and its service components; this will ensure that any new or adapted systems are able to function as required and assist with the smooth cut-over to the TOM. Confirming that all systems can successfully integrate is hugely important in the qualification process.

As we have stated in other answers throughout this consultation response, moving into MHHS under the TOM will require large amounts of resources on the side of the qualifying parties; the fewer parties that we need to report to/co-ordinate with will ensure a timely turnaround of communication, information and updates. Therefore, dealing with a dedicated PPC would be advantageous.

17. We have set out some possible options for the management of the delivery functions, and a proposal on how these would be funded. We welcome your views on this.

We can see the merits of the each of the possible delivery functions Ofgem have highlighted, but have similar concerns as stated in 9.16, over an industry party taking responsibility for some or all the programme management functions.

Management and Operations to sit with Ofgem: as the SRO, having a holistic view of the programme, its stages and the parties progressing through the various stages of work would ensure the smooth management of what will be a huge undertaking for the electricity industry. As a non-industry party, there will be no conflict of interest either internally or externally throughout the process. This is AIMDA's preferred option.

Some or all of the programme management functions to sit with an Industry Party; yes, we can see that having an 'overseer' who has relevant knowledge of the current industry and this programme would have its advantages, however as a group made up of industry agents, we can also see huge issues surrounding conflict of interests. Not only could there be possible conflicts of interest between the different parties all progressing into the operating model, but also within the overseer's company as well. What assurances/agreements would be put in place to ensure that any conflicts of interest do not arise or if they do, then what 3rd party would step in to help to resolve them? We don't not believe that any industry party would want to have to report their progress to a direct competitor.

A third party to take on the roles on behalf of Ofgem; we see this approach as very similar to Ofgem taking on the management roles, almost as an extension of Ofgem. The third party would report into Ofgem and there would be no conflict of interests or competition between the industry parties and the third party.

To summarise, our preferred option would be for Ofgem to oversee the management and operations of MHHS, followed closely by the option of a third party taking on the role on behalf of Ofgem. At no point would we agree to the programme management function sitting with an Industry Party. This view holds firm, despite Elexon's recent 'petitioning for votes' and subsequently raised BSC modification P413.

We agreed with Ofgem's proposal that the costs should be met under the current funding structure.

Other

18. Do you have any comments on the Impact Assessment published alongside this document, or any additional evidence that you think we should take into account?

As highlighted in our response to Q8, the Impact Assessment does not appear to consider all potential options for implementing MHHS. For instance; implementing it based on existing HH settlement arrangements, with a 5 year transition period for all MPANs or continuing with EHHS whilst making non-aggregated consumption data more widely available. It is important that the accompanying rationale for why these options weren't considered in the IA is transparent to improve confidence in the assessment overall.

We disagree with the portrayal of Data Aggregation as a transitional cost in Table 1. This is because under the DWG's TOM the same Data Aggregation activities will continue to occur within central systems and will therefore be an ongoing cost.. Thus, by labelling Data Aggregation as a transitional cost, Ofgem are suggesting a cost saving that is unlikely to materialise.

Some key cost information is either missing or too high-level to be useful. "Central Costs" in Table 4 covers costs for DCC, Elexon, Electralink, the ESO and LCCC. These are estimated to be £39.9m for transitional and £0.6m for ongoing. However, there is no detailed breakdown of what comprises those costs and each section of the IA relevant to the parties listed above is lacking in detail. This is disappointing considering the vital and central roles many of them are to play under MHHS. We understand that this is a draft IA, however; we would have expected something more substantial by this point, considering the DWG published their TOM in February 2019. We are concerned that i) industry will not be given sufficient opportunity to scrutinise the costs provided by these parties in the final IA next year and ii) Ofgem's decision-making will be hampered by inaccurate/insufficient cost information.

We also observe that ongoing costs average ~£1 per MPAN per annum (£31m p.a. / 30m elect meters) and that this seems extremely low in comparison to current system costs. To ensure that no cost category has been missed we recommend that Ofgem map the costs against the specific services and functions in the TOM on a per meter and system basis.

We are also concerned by the degree to which Ofgem appear to have adjusted the costs provided by respondents. This is amplified by a lack of justification and methodology where such adjustments are made. For instance, paragraph 3.12 refers to "adjustments we have made to some suppliers" without further explanation. Similarly, where Independent Agents costs have been increased by 25% there is no accompanying rationale for why this number was chosen, which Ofgem acknowledge is likely to be overstated. When submissions already included uncertainty margins, the above creates so much ambiguity that confidence in the assessment is undermined.

Finally, the IA assumes there will be sufficient penetration of Smart meters (85%) by the end of 2024. Whilst this is consistent with policy, we think it would be prudent to include an assessment on the impact of lower penetration rates to both the costs and benefits. Long-term impacts of Covid-19 are unclear and combined with declining demand and success rates of installations it is difficult to imagine the 85% target being achieved by 2025.

Attachment A - An Alternative Target Operating Model (TOM) for Market-Wide Half-Hourly Settlement (MHHS)

1. Introduction

- 1.1. The purpose of this document is to propose an alternative TOM, which we believe would secure greater benefits through reduced costs, improved efficiency and ease of implementation, whilst maintaining open access to non-aggregated consumption data for settlement and other purposes. We outline the key issues we've identified with the Design Working Group's (DWG) TOM, describe the differences in the alternative TOM, address Ofgem's arguments for central systems using non-aggregated data for settlement calculations, provide an assessment against the TOM evaluation criteria and highlight the anticipated costs of the alternative solution.
- 1.2. The Association of Independent Meter and Data Agents (AIMDA) represents seven of the largest independent Data Collectors and Meter Operators in the non-domestic market. Our members have a combined experience of 150 years in supporting the HH settlement arrangements, and in terms of meter points, collectively manage 80% of the existing HH market and 70% of the NHH 03-04 market.
- 1.3. This expertise has proven instrumental in the development and delivery of large-scale industry change programmes like P272 and the Smart meter roll-out. The metering installation and maintenance, data collection, processing and aggregation services provided by our members ensure that approximately £10bn of electricity trades between suppliers and generators are settled accurately, efficiently and promptly every year.
- 1.4. The electricity settlement reform Significant Code Review (SCR) is both an essential ingredient of the Net Zero ambition and an opportunity to align the meter to bank process with a world where Smart metering systems (AMR & SMETS) are standard. Ofgem's IA suggests that there are significant potential benefits to MHHS but they are difficult to quantify and highly sensitive to unpredictable external dependencies.
- 1.5. Therefore, selecting a TOM and supporting technical architecture that is optimised for cost, efficiency, security and innovation is vital to ensuring the enduring success of the SCR.
- 1.6. Ofgem's minded-to position on the TOM, as summarised in paragraph 3.67 of the IA Consultation is that, "*Under MHHS, non-aggregated data should be made available to BSC Central Settlement Systems for the purpose of calculating the settlement imbalance*".
- 1.7. We believe this minded-to position on the DWG's TOM is not the optimal solution. This is because it would require the delivery of HH data to a central settlement service for all 30 million meter points in the market. However, central systems only needs to know about SP level data on a very small percentage of sites at any one time (e.g. those participating in TERRE, currently <0.01% or those that are subject to a trading dispute). This is therefore highly wasteful in terms of data transport and storage costs as well as creating a single vulnerability from a security and privacy perspective.

1.8. This alternative TOM addresses these points whilst maintaining the benefits of making access to non-aggregated consumption data open. This could be to assist policymaking, innovation and switching; or to support subsidiary settlement processes such as disputes, secondary calculations and performance assurance.

2. Issues with the DWG's TOM and Ofgem's minded-to position

2.1. We have previously shared our concerns about the potential impacts to competition of the DWG's TOM and Ofgem's minded-to position, and those remain. We would welcome a stronger statement from Ofgem that Mod P390 will not be used to unduly circumvent scrutiny of proposals to expand Elexon's commercial operations and remit (paragraph 3.53 in consultation). We still view the DWG TOM and Ofgem's minded-to position as an unnecessary expansion of an existing monopoly and would look to Ofgem under any model to impose the necessary controls around Elexon's activity to prevent unfair competition.

2.2. Removing the Data Aggregation function that occurs outside of central systems will introduce unnecessary inefficiency into the settlement arrangements. The Settlement imbalance is calculated with aggregated data, the SCR does not seek to change this. Therefore, for the purposes of calculating that imbalance, central systems does not need to know the SP-level data for 30 million metering systems.

2.3. Similarly, transferring and storing market-wide non-aggregated data is costly. Where the preceding function, each segment's data service, is already collecting, validating and storing that data, it is an unnecessary duplication of cost and inefficient for central systems to also store it. Especially when their actual uses for meter point SP-level data are limited.

2.4. Paragraph 3.56 of the IA suggests that Ofgem and Elexon view the design of the Load Shaping Service (LSS) as justification for performing total aggregation within central systems, "*The design of the load shaping service as part of the TOM would require central systems to process large amounts of meter point level HH data so as to create the load shapes. There would, therefore, be no significant cost saving from storing less data if data were to be aggregated outside central systems for settlement*". This ignores the possibility of the LSS itself receiving data that is aggregated in the required categories. Therefore, if both the LSS and the Supplier Volume Allocation Agent (SVAA) and/or Market-wide Data Service (MDS) receive aggregated data there is indeed a cost saving from transferring and storing less data comparative to the DWG's TOM.

2.5. Non-aggregated data would be accessible under the alternative TOM but would not need to be shared on a market-wide basis at any one point in time, and therefore will be more efficient and cost-effective.

3. Alternative TOM

3.1. The alternative TOM outlined in this paper shares many elements of the DWG's TOM. The market is segmented by meter type; Smart, Advanced and Unmetered, with corresponding Metering and Data services. The constituent elements of the Smart Data service (MDR, MRS and PSS) are not shown for simplicity.

- 3.2. The first key difference is that the model includes a recommendation for how non-aggregated data could be held in a distributed fashion and shared with central systems, for legitimate settlement related purposes, and other interested parties. Unlike the DWG's TOM it also makes some architectural recommendations around this specific feature.
- 3.3. **Data Request Service (DRS):** this would be a new service that is competitively procured by Industry. It would receive requests for data from several sources; Industry participants, Consumers or those acting on their authority and other interested parties, such as policymakers or academia. Different access rules would apply depending on the source and nature of the request. Therefore, triage of data requests for privacy, consent, security and confidentiality purposes would be a feature of the DRS, just as it is for the MDS under the DWG's TOM. Through synchronisation with the Registration Service, the DRS could identify the correct combination of Data Services it needs to forward that request to. Upon receipt of such a request, each Data Service would be required to output the result to the DRS within a defined SLA timescale. The DRS would consolidate responses from individual Data Services to return to the requesting party. API access would be available to industry participants.
- 3.4. The second difference is that each Data Service has a Data Aggregation function within it. This would be a formal consolidation of the Data Collection and Aggregation roles that the market has naturally tended towards historically. It also ensures that data is collected, processed and aggregated in the same place, reducing transfer and storage costs. This is aligned with the original Skeleton TOM C.
- 3.5. The key Data Aggregation requirements of the Data Services would be;
 - 3.5.1. Generation and output of consumption data aggregated by Consumption Component Class, Supplier and GSP Group (optionally by Balancing Mechanism Unit) and adjusted for losses to the Supplier Volume Allocation Agent (SVAA) for Settlement calculations
 - 3.5.2. Ad-hoc provision of data in the required configuration/format to fulfil requests from the DRS
 - 3.5.3. For the Smart Data Service; generation and output of consumption data aggregated by load shape category to the LSS for market average load shapes to be created for estimation purposes
- 3.6. The third difference is that there is no requirement for the Market-Wide Data Service (MDS) and thus less development of central systems. The Supplier Volume Aggregation Agent (SVAA) can continue in its current form.
- 3.7. Overall, this means that for Settlement purposes, consumption data is only transferred in aggregated form but is accessible non-aggregated or in different configurations depending on the requirement. In terms of the meter-to-bank settlement process, the alternative TOM more closely resembles the existing market model and therefore represents a simpler, less intrusive and more proportionate means of achieving Ofgem's policy objectives under the SCR.

Figure 1: Alternative TOM Diagram

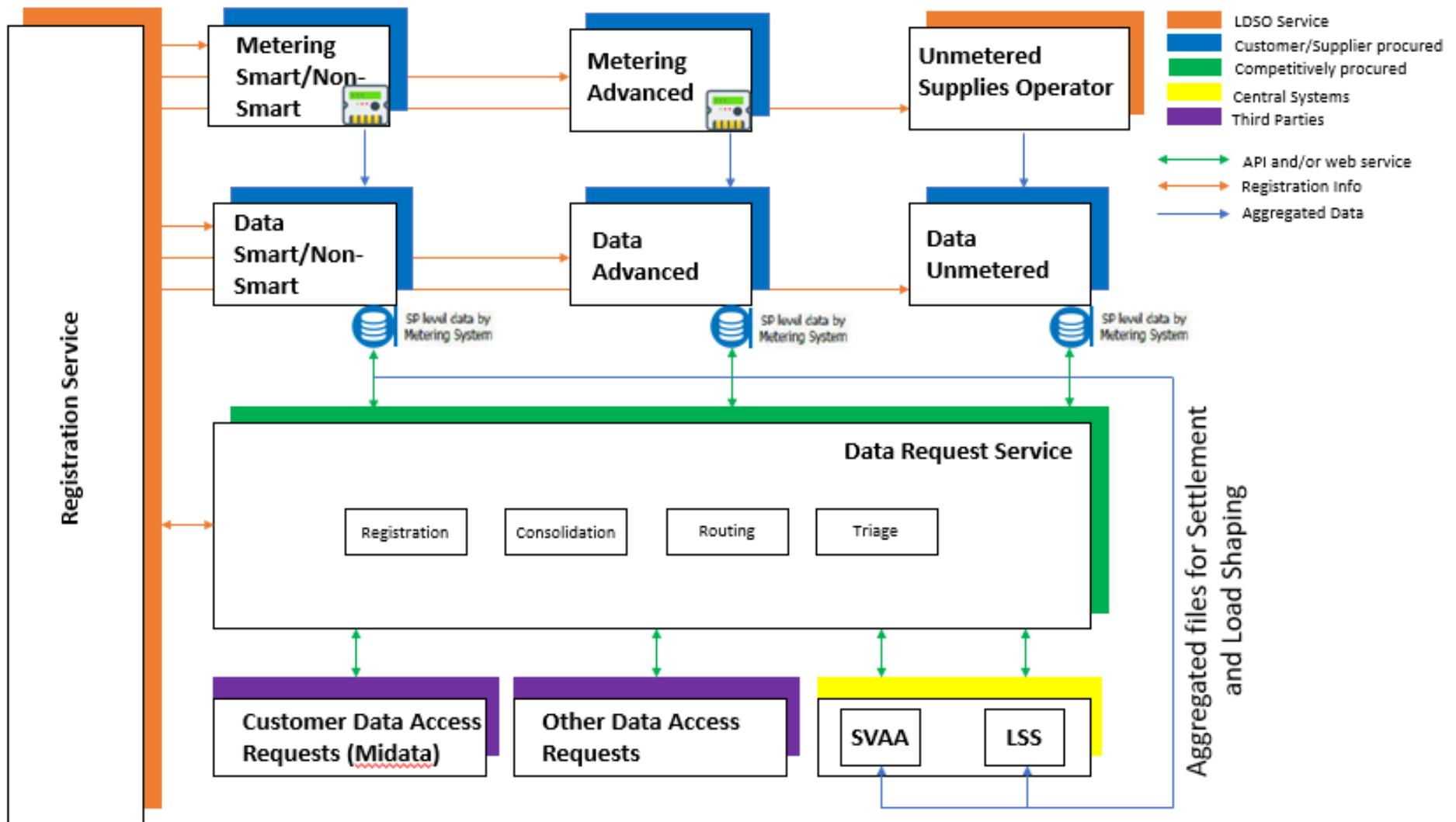
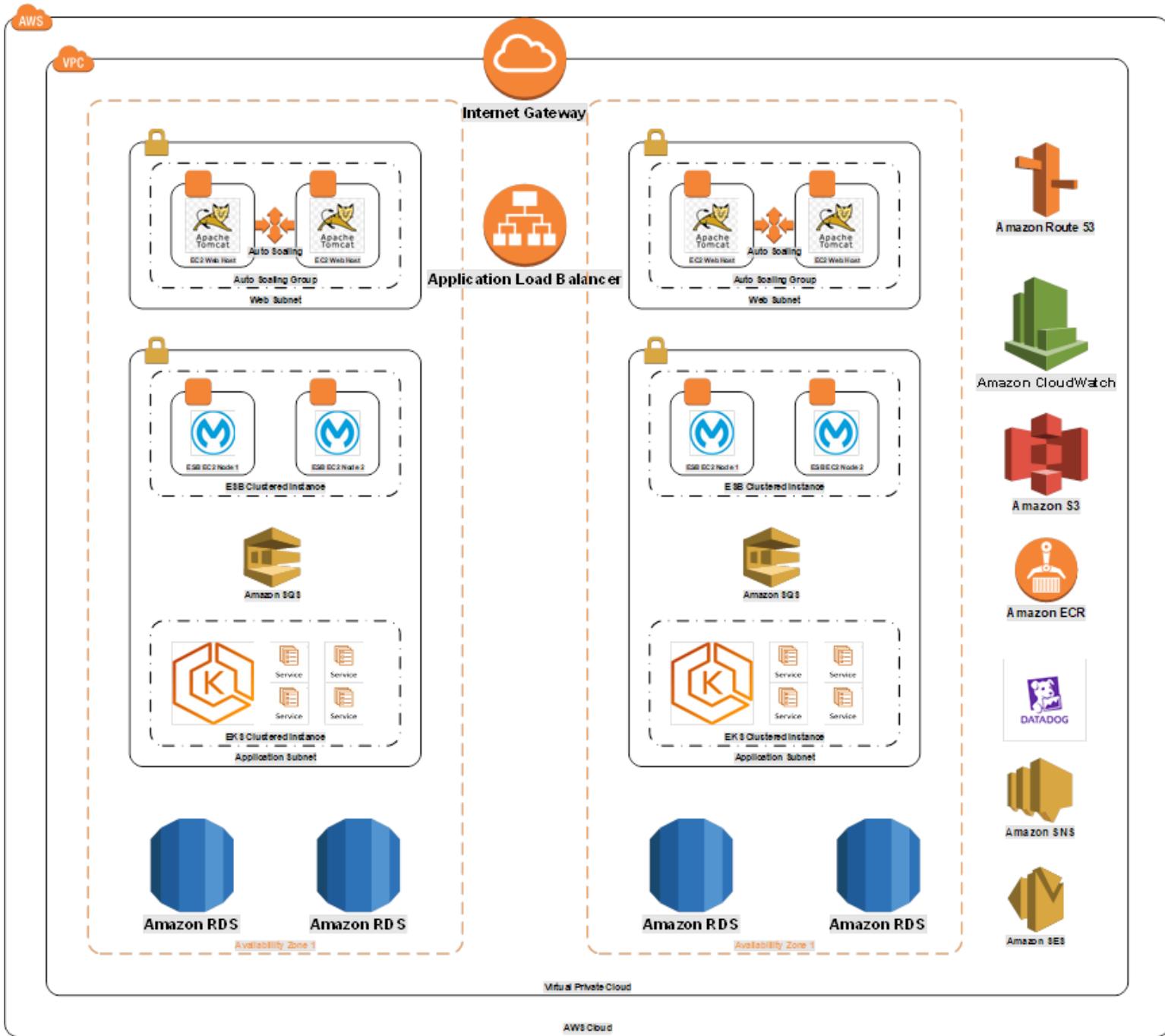


Figure 2: DRS Architecture



4. Ofgem's Arguments for central systems using non-aggregated data for settlement calculations

- 4.1. In paragraph 3.21 of the IA Consultation, Ofgem outline their arguments for central systems using non-aggregated data to perform settlement imbalance calculations. We replicate each one below and provide a response.

- 4.2. ***"Efficiency and cost-effectiveness:*** *There would be no need to aggregate data for settlement purposes both at the supplier agent level and in central settlement systems, as it is the case today. Additionally, changes to settlement calculation rules would be more simple and timely to implement (as they only need to change in one system).*
- 4.3. **Response:** At face value, total aggregation in one place under the DWG's TOM appears efficient, however; it requires the daily transfer of settlement period data for 30 million meter points from multiple data stores to another, from each data service to central systems. The same data will need to be stored twice in separate locations; at the Data Service and in central systems. The costs of non-aggregated data transfer and storage will be much greater. By way of comparison, under the alternative TOM, non-aggregated data is only stored in one location, data transfers occur at an aggregated level and therefore is more efficient and cost-effective. Non-aggregated would still be accessible under the alternative TOM but would not need to be shared simultaneously on a market-wide basis.
- 4.4. ***"Greater potential for flexibility in the aggregation of data for settlement.*** *For instance, siloing of aggregated data would no longer occur within different supplier agents systems by supplier and GSP Group. Instead, aggregations could occur across suppliers, GSP Groups and other metrics. This will also allow greater flexibility in the types of data aggregation for settlement that can be carried out, and facilitate adaptation should further changes be required in the future."*
- 4.5. **Response:** The aggregations Ofgem describe cannot be intended for core settlement. How does aggregating across suppliers benefit settlement? This would result in the metered volumes for multiple suppliers being mixed, making effective settlement of each individual supplier's contracted volumes impossible. For the purposes of settlement, data must be aggregated in a certain way. The consultation recognises this in its description of the new Market-wide Data Service (MDS), "*the MDS will aggregate the data by Grid Supply Point and Group and balancing mechanism unit*"¹. The only real variable is the Consumption Component Classes, which might benefit from future adaptation as the drivers for group correction become clearer. Changes to CCCs can be managed just as effectively across multiple systems as in a singular one. Similarly, changes to Load Shape categories can also be easily implemented. There could be benefits of increased flexibility through access to non-aggregated data for purposes outside of core settlement, however; using this as an argument to support central systems using non-aggregated data for the settlement calculations is unnecessary and disproportionate. Under the alternative TOM non-aggregated data can still be accessed by central systems but in a much more targeted and therefore efficient way.
- 4.6. ***"Data quality benefits for settlement:*** *the reconciliation run process could have data drip fed into it as it becomes available, therefore giving earlier sight of completeness and issues before scheduled settlement runs are undertaken. Duplicates/missing/erroneous data can be identified across the whole of the system if all MPAN level data is compared, and final dispute runs would only be run with the data involved in an authorised trading dispute. This removes the opportunity for unauthorised revised data to be re-submitted after the final reconciliation run."*

¹ Ofgem, June 2020, *Electricity Retail Market-Wide Half-Hourly Settlement: consultation*, paragraph 3.18, p37

- 4.7. **Response:** the process described by Ofgem here already occurs at Supplier Agent level; a view of data completeness and accuracy is built up between runs and actions are taken to improve the overall position before the next run is performed. Introducing an additional layer to this process will not provide any benefit and could cause inefficiency, for instance; if central systems raise an exception that the data service is already aware of and investigating. The proposed improvements to the Registration service should eliminate the occurrence of duplicate and missing data as ambiguity over responsibility for data provision to settlement is removed by having a single source of truth. This reduces the potential benefit of an additional market-wide validation step. In the case of dispute runs, under the alternative TOM, data specific to that dispute could be accessed by Elexon via the DRS when required as opposed to being held indefinitely by central systems without purpose in the majority of cases.
- 4.8. ***“Competition benefits:*** *If non-aggregated data used for settlement is also made available to third parties (in accordance with data protection rules) this could enhance competition, not only in Value-Added Services, but also by making it easier for businesses to offer innovative new services to suppliers and/or consumers.”*
- 4.9. **Response:** we agree that this would foster competition in one area but the mechanism proposed by the DWG and Ofgem would hamper it in another. The alternative TOM ensures that competition is promoted and maximised in all areas of the energy market, including metering and data services. The same access arrangements to non-aggregated data can be made under the alternative TOM without removing competition in Data Aggregation services.

4. Assessment against TOM Evaluation Criteria

4.1. The alternative TOM shares many elements of the DWG's TOM and therefore shares many of its benefits. Assessment of the alternative TOM against the evaluation criteria used by the DWG towards the end of their Stage 1 work demonstrates this. Where relevant, a comparative assessment with the DWG's TOM is provided to highlight the additional advantages of the alternative TOM.

Criterion	Key Considerations	Alternative TOM	Comment
Coverage	Meets requirement in the Key Roles and Responsibilities document	✓	The alternative TOM covers the entire meter to bank process. By closely mirroring the existing market model, there is assurance that there are potential participants to fulfil each role. Moreover, the TOM covers an adapted Data Service role to include Aggregation activities and outlines an entirely new Service, the Data Request Service, to facilitate access to non-aggregated data. All meter types are covered and arrangements remain in place for Export and UMS supplies. Whilst customer billing is not a settlement consideration, suppliers will continue to be able to obtain data for billing through a number of avenues.
	New or adapted role types	✓	
	Meter Types	✓	
	Export Coverage	✓	
	UMS Coverage	✓	
	Customer billing interaction	✓	
	Potential participants to fulfil role	✓	
	Registration arrangements	✓	
Cost Reflectivity	Quality of data to settlement	✓	Use of SP-level data is maximised across all customers and meter types. Subsequent network charges can be more cost reflective as they will be based on actual time of use consumption data. Consumers who opt-out of HH data for settlement or experience remote communications failures will be able to HH settled using load shapes that are more accurate than today.
	Customers and meter types	✓	
	Network charges	✓	
Timing	Timing of Initial Settlement Run	✓	The alternative TOM would support reduced SF and RF Runs.
	Timing of Final Reconciliation Run	✓	
Design Simplicity	Statement on simplicity of design	✓	The alternative TOM more closely mirrors the existing HH settlement arrangements than the DWG's TOM and would therefore be simpler to implement. It would also require less development of central systems as the MDS is not required. Equally, the LSS would only need to handle aggregated data. Due to its distributed nature, the alternative TOM is more robust from a security and resilience perspective.
	Impact of supporting smart and traditional solutions	✓	
	Robustness and ease of upgrading	✓	
	How adaptable the TOM is and why?	✓	

Design Flexibility	How will it handle bulk CoS events	✓	The alternative TOM can accommodate potential changes to Data Privacy, Consumption Component Classes, Aggregation for Settlement, Load Shape categorisations and any other external factors that might impact settlement. Bulk CoS and Supplier of Last Resort events can be handled in a similar way to the DWG TOM. Data hand-offs are significantly reduced under the alternative TOM as market-wide non-aggregated data is not passed to central systems and the Data Aggregator role is formally consolidated with the Data Collector to form an integrated Data Service.
	Supplier of last resort	✓	
	Number of data hand-offs	✓	
Data Privacy	Is the TOM compatible with Ofgem's Policy Decision on Data Privacy?	✓	The alternative TOM would support Ofgem's policy decision on Data Privacy – that domestic consumers can opt-out to daily granularity of data. As outlined above, if this were to change in the future there is nothing in the TOM that would preclude this.
		✓	
		✓	
Solution costs	A relative assessment of the likely costs of the TOM for all stakeholders (not including implementation costs)	✓	AIMDA provide an estimation of the solution's costs in section 5 of this document. We believe that overall implementation costs for the solution would be equivalent to those provided by Elexon in the IA and that ongoing costs would be lower through more efficient data storage and transmission.
Ease of Implementation	Summary plan with appropriate allocation of roles & responsibilities	✓	The transition approach developed by the DWG and Ofgem's proposals for Programme management can be applied to the alternative TOM.
	A practical transition approach	✓	
Impact on small suppliers & new entrants	Identifying specific issues for small suppliers/new entrants stemming from an assessment of other criteria	✓	The alternative TOM doesn't present any barriers to new entrants in retail supply, metering or data services.
Supports New Technologies and Innovation	Identify how access to different levels of meter and aggregation could support new technologies or other innovation such as DSR, Peer-to-Peer and Smart Grids	✓	The Data Request Service will provide a level playing for those with legitimate interest to access consumption data for innovation purposes.

4.2. Additionally, a clear advantage of the alternative TOM is that it does not remove competition in the supplier agent market, which is more consistent with Ofgem's reliance on Administrative Exclusion "D" - "*Deliver or replicate better competition-based outcomes in markets characterised by market power: Pro-competition document*" for the Impact Assessment.

5. Cost Comparison

- 5.1. Comparison of the costs between the alternative TOM and the DWG's TOM is hampered by the lack of detail around the breakdown of "central costs" in the IA. Given that the main difference between the TOMs are the "central" aspects.
- 5.2. However, there are clearly substantial cost benefits to be derived from efficient data storage and data transport.
- 5.3. There is an inefficiency in the Data Services copying the data to the MDS for all 30 million (or more) metering points. The Data Services will need to keep a copy of the data that they provided for auditing purposes, so there is data duplication. This is a substantial data set, estimated at over 750 billion records per annum for the market. Duplication of this data will incur additional costs in storage, back-up, archiving, processing and transport. Having investigated the operational costs associated with the alternative target architecture contained within this document we can confirm that data transfer costs make up a significant proportion of the ongoing costs even considering the vastly reduced size of data transmission associated with our model.
- 5.4. The costs of processing the data for pre-aggregation into settlement, for load-shaping, and for providing access to data requests will be similar across the two arrangements. Centralisation will not reduce these costs but will incur additional costs due to its inefficient architecture. AIMDA have conducted an initial investigation into the costs of implementing a decentralised data store, facilitated by the creation of a data request mechanism and application layer and can confirm that the associated costs are not more than those stated by Elexon in the Draft Impact Assessment.
- 5.5. Implementing the revised architecture reduces ongoing cost by being efficient with data storage and data transmission. Inclusions of various access methods (web calls and API's) allow cost efficient methodologies for third parties to access the data in a controlled and secure manner while 'request tokens' can temporarily store data access requests for a short period to avoid placing stress on end user systems with unnecessary repetitions.
- 5.6. Additionally, distributing the storage of market-wide data across competitive data services agents will increase cost pressure on this activity in the long-term, leading to lower overall costs for these services to the industry.
- 5.7. The alternative TOM provides the best in current architecture to provide cost efficiency both now and in the future. It provides the same access to data without the potential for misuse and does it in a highly scalable and cost-effective manner.

Attachment B – MHHS Ofgem TOM – AIMDA Suggested Timeline

