29 October 2021

Gas Industry Company
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Advanced Gas Metering Infrastructure - Issues Assessment

Intellihub would like to thank Gas Industry Co (GIC) for the opportunity to comment on the comprehensive set of issues discussed in the consultation paper.

As a meter owner, Intellihub acknowledges the importance of GIC revisiting the governance settings of the gas metering market now that AGMI has begun to be deployed. The introduction of AGMI offers a number of advantages over legacy meters and it is timely to consider whether accompanying improvements are required. We also note that the electricity industry has already worked through issues regarding the introduction of advanced meters. Acknowledging that there are differences between the electricity and gas markets, we encourage GIC to review the work of the EA in this area and capitalise on the experience gained thus far.

While the market for the supply of gas metering equipment is contestable, supply continues to be dominated by distribution network owners. Intellihub notes that any changes to the current governance settings should be aimed at improving competition or, at least, ensuring the market remains contestable. The availability of AGMI at competitive prices relative to legacy metering could pave the way for non-network meter owners to increase market share by rolling out modern equipment at scale. At a minimum, the governance settings should ensure that non-network meter suppliers enjoy open access for installation of their equipment.

Intellihub would welcome leadership from the GIC to work with all relevant parties to open the way for implementation of remote disconnection and reconnection technology for the benefit of retailers and their customers.

Intellihub is happy to work with the GIC to ensure the governance arrangements are appropriate and proportionate and is available to assist if GIC needs further input from a meter owner point of view. As a practical matter, Intellihub supports TArMAC being revitalised and is willing to continue its membership.

Yours sincerely

Lindsay Cowley
CEO

Questions

Advanced Gas Metering Infrastructure - Issues Assessment

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Question		Comment
Q1	Do you agree with the Gas industry Co's conclusions from the 2017 Review that the advanced gas metering market should be allowed to develop without regulatory intervention, to ensure that innovation is not hampered, while also determining that some minimum standards would be a pragmatic step toward ensuring a common understanding of what market participants want from advanced metering?	The conclusions of the 2017 review in respect of the lack of competition in the metering space remain true today. The issues paper notes that the share of metering owned by organisations other than the network owner has increased. However, that change has not come about because of any change in the metering market, it is simply a side-effect of Vector divesting networks to First Gas, whilst retaining ownership of the meters. The 2017 conclusions in relation to advanced metering were reasonable given the nascent state of AGMI in the NZ gas industry at that time. However, now that advanced meters are beginning to be deployed in significant numbers it is important to review the minimum standards from 2017 and develop a set of metering guidelines that are more appropriate. Given that recommending regulation is a less preferred option for Gas Industry Co, it is also essential that the desired policy settings are identified and published promptly to make the regulator's views transparent and create a benchmark against which the introduction of AGMI can be measured. It would be useful to build on the experience from the roll out of advanced metering in the electricity sector. For example, as most gas retailers also retail electricity there will likely be efficiencies in aligning file formats wherever practical.
Q2	Do you agree with the above list of identified issues, and Gas Industry Co's priority categorisation of the same? Please identify and explain any issues not identified, and explain your reasons	**High priority issues** 1. **Costs and benefits to consumers** While GIC correctly notes some stakeholders' concerns regarding the costs of AGMI, the countervailing issue is that the market is contestable with numerous retailers and AGMI will only

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for disagreeing with any of the issues raised or priorities assigned.	become ubiquitous if it lowers overall costs, or adds significant benefit for retailers and their customers. If GIC were considering regulations to mandate installation of AGMI then this would be a high priority issue. But, as the roll out of AGMI is a commercial decision for retailers this issue warrants a lesser priority. It is also important to understand that, once a significant proportion of meters are 'smart', the ability to capture and process more detailed information can provide benefits to market participants beyond retailers and their customers. 2. **Minimum data standards and file formats** The key word here is "minimum". Retailers can always request other file formats from their meter owners, but there should be a small set of standard formats that meets most needs (e.g. half-hourly data for easy alignment with existing systems for electricity, and daily reads for retailers who don't require greater granularity). Given that the gas transmission codes are based on NZ Standard Time year round it would also make sense for the metering data to match that convention as this would enable them to easily take advantage of the same data when consolidated. Having a product that runs in NZ local time (NZDT and NZST where appropriate) also makes the solutions that generate and process the data more complicated, adding cost to the businesses using them. We are not convinced that minimum standards should extend to converting measured volumes to standard conditions as not all advanced meters will have the necessary pressure and temperature transducers to support that. Where the metering infrastructure has the necessary data (pressure, temperature, flow rates) a meter owner will be incentivised to offer more advanced services. A number of other suggestions, e.g. CSR interrogation of meter status, should be approached cautiously given that, unlike electricity, AGMI is battery-powered and battery life will be reduced as the frequency of communications rises. Similarly, provision of daily data to the allocation agent for D+1 should be under the control of the retailer so as to ensure conversions are accurate (pressure, temperature, CV, etc) and the D+1 algorithm correctly accounts for ICPs with actual data as well as those for which it must estimate. A key reason for communications access sitting solely with the meter owner is the fact that the meter owner will have SLAs with its customers (retailers and, possibly, network owners) and nothing can be allowed to interfere with the provision of those services. We agree that access to AGMI must be highly secure and suggest that restricting access to only the meter owner may be the best way to ensure that security. Where other industry participants, e.g. network owners, may have uses for that data they can obtain it on commercial terms from the retailer and/or the meter owner, subject to satisfying any privacy obligations (it is possible that the

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	network owners will be most interested in capturing data on events relating to network performance). 3. **Access to, ownership, use and security of, customer data** Agree that this issue needs further analysis, particularly with regard to customer privacy. The model used in the electricity industry recognises that the consumption data is owned by the consumer, but the data is retained by the MEP, available to retailers for their respective periods of ICP ownership, and the MEP has commercial incentives to make metering data available to network owners if they seek it. It is also worth noting that no network owner, who is generally also the metering owner, has initiated replacement of legacy meters with smart meters for the purposes of capturing non-consumption meter data. 4. **Potential process and registry changes (including switching procedures)** Agree that some registry changes will likely be required. An example of that may be the need for a flag to indicate whether an advanced meter is/isn't communicating (and we would favour an additional flag rather than, as was done in electricity registry, repurposing the existing flag). We question the wisdom of adding certain data to the registry given the public nature of the gas registry (anyone can search for ICP details via GIC's website). Identifying make, model, and remote disco/reco functionality could enable more accurate targeting of cybersecurity attacks. 5. **Downstream Reconciliation Rules** Agree that the apparent uncertainty in the DR rules regarding allocation groups should be clarified. In addition, as allocation group 5 is unused there may be value in allowing retailers to use that group to submit daily data for sites that would otherwise be in allocation group 6. Such a change would ensure that daily consumption data from advanced meters was correctly allocated across the month (rather than using the gas gate residual profile). 6. **Alignment of GMSAs** We don't support alignment of GMSAs, considering that the content of those contracts is best left to the parties to address in their commercial negotiations. That freedom allows for innovation and, given that retailers typically have GMSAs with all meter owners, such innovation is likely to spread if valued more broadly. However, GIC may wish to consider signalling its expectations in the form of

guidelines or benchmarks as it has done previously for retail contracts and distribution use of system agreements.

7. **GMSA payment provisions**
More analysis of this issue is required to identify the appropriate allocation of risk. For the residential sector gas can be seen as a discretionary fuel and, unlike electricity, disconnections can become permanent. If charges automatically cease on disconnection, meter owners may be more reluctant to install such devices. At a practical level, the responsible retailer retains the obligation to monitor for unauthorised gas use and, unless removed, the meter is the means of providing that information reliably. Even if data is only being gathered intermittently in such a case, batteries have a finite life and we see no good reason for charges to be waived. This is likely to be an area best left to the parties to negotiate mutually acceptable arrangements.

8. **AGMI redundancy risk**
We consider this falls into the same category as issue 1. Retailers will only be contracting for AGMI installations if there is a net benefit to them. In addition, meter owners need to ensure that the services they provide meet the needs of retailers or risk those retailers looking elsewhere.

9. **Centralised data provider**
Whilst we are not opposed to this in principle, any move towards a centralised data provider needs careful analysis so as to ensure that such an approach yields clear net benefits. The paper cites the UK example, and we note that the revenue for the UK provider (Smart DCC) for the year ended March 2020 was over £430 million. Given the economies of scale that organisation should be achieving, the costs per ICP would likely be much higher in NZ. Note that, as a monopoly provider, Smart DCC is also subject to economic regulation.
Separate from the cost of a centralised data provider, the creation of such an entity risks stifling innovation, potentially reducing the pace of change to that of the slowest member(s). While it is possible that those who wish to move faster will enter into separate, bilateral arrangements, that requires them, effectively, to be paying twice. Given that the gas market is relatively small (in terms of both numbers of customers and retailers), we believe that the data collection and delivery risks are best managed at a commercial level between the parties.

10. **Advanced meter displacement**
We consider this issue is best managed via the commercial agreements between the parties. It is

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	also hard to see why retailers would sanction such inefficient behaviour as it confers no advantage to them. 11. **Open access AGMI systems** We are opposed to such a move due to the associated cybersecurity risks and the increased costs associated with requiring "…*all advanced gas meters* [to] *interface with all GMS communications and meter management … systems*". The increased efficiencies would need to be identified and certain before embarking on further analysis in this area. It is also worth noting that such a move may increase the risk of consumer data being collected by someone other than the responsible retailer and any such open access regime would need to have highly secure arrangements to ensure access to data was only granted to the responsible retailer for an ICP (and only for periods corresponding with their ownership of that ICP). Similar to our response to issue 2, open access also impinges on the ability of the meter owner to be able to meet its SLA commitments. 12. **Technology standards** Standardising has significant risks in a small market such as New Zealand. We consider that retailers and meter owners are well placed to compare the benefits and costs of available systems and make choices that suit their customers and their business model. The mandated roll out of advanced electricity meters in the state of Victoria is a salutary lesson on the risks of imposing outcomes rather than allowing the market to find solutions[1]. Similarly, the mandated rollout of smart meters in the UK has been beset with problems, with many first-generation meters losing functionality when customers switch suppliers[2]. We would prefer to see guidelines developed as noted in our response to issue 2. With regard to future-proofing meters to allow for changes to the constituents of the gas stream, that seems unrealistic given the future uncertainties. The gas will still need to meet the gas specification to avoid triggering a mass upgrading or replacement of appliances and other equipment, suggesting that meters designed for the current standard will continue to be useful for some time to come. If there were to be a switch to, say, reticulating pure hydrogen rather than

[1] See https://www.energy.vic.gov.au/electricity/smart-meters/reports-and-consultations/advanced-metering-infrastructure-cost-benefit-analysis.

[2] See https://www.forbes.com/uk/advisor/personal-finance/2020/11/27/smart-meters-continue-roll-out-but-many-not-serving-purpose/

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	natural gas/biomethane, that would require significant changes, including changes to metering technology. 13. **GMS ownership and works** Any change allowing distribution network companies "*to have ownership of the entire GMS at all ICPs on their networks*" would need to be matched with economic regulation of those metering assets (because of the monopoly created). This would seem to be a retrograde step from the current arrangements. Also, the suggestion that an incumbent MSP should receive compensation for legacy GMS equipment being replaced risks reducing competition. All MSPs have the opportunity to offer competitive pricing, including those whose equipment may be being displaced. The issues paper put forward a view from distribution network companies that owning "… *the entire GMS at all ICPs on their network … might deliver … safety benefits*." We find that view surprising given the requirement to use qualified personnel for installation/removal/maintenance of GMS components and that different meter owners are often outsourcing field work to the same contractors. If there really are efficiency gains of any significance that would suggest that the party who stands to receive those benefits would be well placed to make a commercial offer for the asset(s) it wished to acquire. Given the Gas Act and GPS objectives of efficiency and reducing barriers to competition, it makes sense to pursue an ownership model that is most likely to result in a vibrant, competitive market that, in turn, will flow through to better retail competition. Having all meters owned by the distributor may mean there is no incentive for the meter owner to innovate as all its customers are captive. It is worth noting that no network owner has installed advanced metering of its own volition, that change has been driven by retailers. 14. **Advanced metering consumer education** Agree this is likely a role for GIC, although retailers may also have preferences in this area. **Lower priority issues** 15. **Market competition** We acknowledge GIC's concerns about apparent low levels of competition in the gas metering space. To a large extent that outcome simply reflects that the gas industry has developed from vertically integrated monopolies. However, with the availability of gas smart meters there is the opportunity

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	for retailers to make different choices for smart meter deployment and, thereby, reduce the level of market concentration. The comment regarding price/quality regulation for meters ignores the fact that the metering market is, at least, contestable. In the event that one or more meter owners choose to extract monopoly rents, retailers always have the option of choosing a different meter owner. Incumbents would recognise that and would not want to price in a manner that risks their assets being displaced. 16. **Preferred supplier provisions in legacy GMSAs** GIC is right to be concerned about contractual arrangements that appear to be aimed at lessening competition. Although we are opposed to arrangements that inhibit competition or limit retailers' rights to choose suppliers, we are also not in favour of GMSAs being regulated and, as noted in our response to issue 6, there is scope for GIC to develop a set of expectations regarding GMSAs, including its views on preferred supplier provisions. 17. **Streamlined process for customer requests for consumption data** We consider this is an issue for retailers and their consumers and note that the EA has already considered this issue. 18. **Ensure distributors have access to smart meter data on reasonable terms** The paper doesn't define the data to which distributors seek access. If consumption data, then that is best dealt with between the distributor and the retailer who has the relationship with the customer(s). If, however, distributors are seeking information on events recorded by the meter then that information may, more appropriately, be obtained from the meter owner. We expect that mutually reasonable terms can be negotiated, and the existence of guidelines may help to inform those discussions. (refer to responses to issues 2 and 6). Additionally, the EA has already canvassed this issue with stakeholders and that model may be able to be adopted in a suitably modified form. 19. **Remote disconnections and reconnections** The existing protocol that governs disconnection and reconnection of consumer installations does not allow for these to be completed remotely. However, the existence of such functionality could confer benefits for customers who may require temporary disconnections (e.g. during building works) or in emergency situations such as leaks following an earthquake (provided the communications facility still works).

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		It would seem that this is an area in which GIC could liaise with retailers, distribution system owners, GANZ, WorkSafe, etc to explore the feasibility of implementing remote disconnection/reconnection and what changes would be required to the existing protocol and any standards, regulations, or related documents. Given the existence of smart prepayment meters in other jurisdictions, it would appear that the safety issues associated with electronically interrupting and restarting the flow of gas safely have already been addressed by smart meter suppliers. 20. **D+1** If there is any intention to use AGMI data for the D+1 system it would be useful to clarify the timing arrangements for delivery of such data by retailers to the allocation agent (as that will impact when meter data needs to be delivered to the retailer). This would likely be a task for TArMAC (or possibly the daily allocation working group). **Non-relevant issues** No comment
Q3	Is the TArMAC group the appropriate working group to work with Gas Industry Co to develop solutions for AGMI issues identified through this workstream?	We would favour such a group being used to assist GIC to evaluate the issues and to work through solutions. It is important that GIC's proposals are technically sound and evidence-based.
Q4	Do the objectives of the TArMAC group need to be revised (extended or reduced) and if so, how?	The "scope of work" needs to be reviewed in light of the number of issues identified in the consultation paper, particularly as AGMI is already being deployed. Broadly speaking TArMAC should be used to assist GIC to assess the issues with a view to identifying those that need to be addressed, developing practical solutions, and supporting GIC with any further consultation on solution design.
Q5	Does the TArMAC group membership need to be revised and if so how (noting (a) the efflux of time since its establishment in 2017 and (b) any	The group membership needs to be refreshed to ensure that members are the right people from their respective organisations (i.e. have the technical knowledge to provide meaningful input) and to ensure that members are able to commit time to the group. Also, a significant number of the original members have moved to other positions or have left the gas industry.

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	changes to its objectives necessary to address issues identified through this workstream?	It might be expedient to send out a revised ToR and selection criteria and invite stakeholders to nominate (or reconfirm) members for the Committee. Selection criteria should be sufficiently narrow as to ensure the Committee is a working group and runs efficiently.