Data and data exchange for market transactions

Genesis Energy Limited (Genesis) welcomes the opportunity to provide a submission to the Electricity Authority (the Authority) on the consultation paper “Data and data exchange for market transactions” dated 26 September 2017 (consultation paper).

The Authority is looking to ensure data and data exchange arrangements can manage ‘more’ as the industry moves forward - more parties wanting to interface with the data system, more transactions and more data - to continue to promote competition, reliability and efficient operation of the electricity industry for the long-term benefit of consumers.

Genesis considers it is important to future-proof data exchange systems and processes, including regarding protection of that data, for the benefit of the market and the consumers it serves, and appreciates the Authority proactively exploring what changes might be needed to improve current arrangements.

Let’s walk before we run

We believe the Authority has identified some possible barriers to innovation and market entry: it is true transactions are not (always) settled using the most accurate available data; data systems need to be able to facilitate more participants and transactions; and security and privacy arrangements must best protect consumer privacy and minimise the risk of cyber-attacks.

The consultation paper thinking is heading in the right direction. Unfortunately, it falls short however, in our view, of offering effective means to address these issues. Where it proposes changes to specific data exchange protocols prescribed in the Electricity Industry Participation Code (Code), the consultation paper has missed a fundamental step in the process: that is determining what future market settlement should look like, from which the data system requirements will become obvious.
What this tells us is that the Authority – and industry - need to take a step back and look at the wider framework around the collection, processing, storage and exchange of data, and how this should be structured for the future.

To Genesis this means resisting making minor adjustments to Code provisions for specific data exchange protocols until there is a clear consensus on the market settlement of data, as well as defined parameters for accessing and using that (and other) data:

- We consider settlement using interval data is the clear direction the industry has been and will continue to travel regardless of any intervention. This will be necessary to truly realise the benefits of ‘more’ data and data exchanges for consumers;

- To achieve the best outcomes for consumers it is crucial to take the time to determine the permissions and restrictions that should govern data, which means seeking answers to questions such as: what purpose is it being collected for; who can access it; how can access be limited to parties that have agreed rights; and are rights to access able to be transferred or withdrawn (and if so, when, how etc).

Genesis urges the Authority to fully explore the fundamentals underlying current and future data and data exchanges in collaboration with industry now to ensure the regulatory framework is fit for purpose. We trust this is clear in our responses to the consultation questions, included below as Appendix A.

If you would like to discuss any of these matters further, please contact me by email: margie.mccrone@genesisenergy.co.nz or by phone: 09 951 9272.

Yours sincerely

Margie McCrone
Regulatory Advisor
### Appendix A: Responses to Consultation Questions

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<th>QUESTION</th>
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| Q1: What inaccuracies in data and data exchanges have you experienced, for what reasons, and with what impact? | Genesis believes issues with register content codes – highlighted in the consultation paper – are not a result of the data exchange construct, but the codes themselves. We noted this in our recent submissions to the Authority on this subject.¹  

Rather, our view is that inaccuracies in data and data exchange do not arise from the data exchange construct itself, but rather the Code and the settlement processes it prescribes not having kept up with changes in the industry.  

An example of this is the distribution of unallocated for electricity (UFE). Market share continues to be the key factor in sharing UFE costs, despite the largest traders not necessarily being the largest contributors to UFE as more participants enter the market.  

Another example is where Code requirements for data submission add no value to the settlement process now, despite having served a purpose when global reconciliation was first introduced.  

We also note the difference between inaccuracies and errors, which, as the terms are used interchangeably throughout the consultation paper, is an area of confusion. |

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¹ See Genesis Energy submission on Operational Review of Register Content Codes; Genesis Energy submission on Proposed Minor Amendments to ICP Status Reasons and Register Content Codes.
Inaccuracies occur as an expected result of an existing process e.g. during the initial allocation run, the end of month consumption data is not yet known so is estimated then subsequently washed-up. An error is a mistake that can occur in any process e.g. a human error made entering consumption data into a file.

While an inaccuracy can be anticipated and accounted for, an error is problematic and can have significant effects on any modelling and forecasting.

An example of this is where data received from the Authority via the automated file transfer protocol shows negative electricity load for some grid exit points, but the same dataset downloaded from the Authority website does not correspond. In this instance, the data cannot be used in order to reduce modelling errors at the cost of reducing model accuracy. This is a process error that could be resolved by improving data quality control prior to the data being transferred to the electricity market participants.

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<th>Q2: What are the types of benefits and the costs of being able to reduce settlement periods between industry participants?</th>
<th>At this point in time, we consider the costs of moving to weekly settlement would far outweigh any benefits.</th>
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<td>This is because without fundamentally changing the allocation of data - i.e. having all participants submit interval consumption data – you will simply get the same data, more often; three out of four weeks of which will need to be estimated, increasing the inaccuracy and the costs therein.</td>
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<td>Further, moving to weekly settlement of data in this operating environment will incur four-times the costs: where this is presently a once per month cost to serve,</td>
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it would become a four-times per month cost to serve.

These costs could be justified if they were offset by benefits for consumers via a more reliable, efficient and competitive electricity market.

While we can see that, as per section 4.17 (a) there may be an advantage in reduced prudential requirements for some retailers, we cannot see how it would (b) reduce the costs of doing business, or (c) enable participants to bill consumers more regularly using actual consumption unless, as above, all participants settled using interval data. We also note that as it stands customer billing cycles do not necessarily align with settlement and all the inputs (consumption, spot price etc) required for a retailer to bill a customer more frequently are available irrespective of the settlement date.

One option that is not considered in the consultation paper would be to fully transition to settlement via interval data. This is the direction the industry is and should be heading regardless, and Genesis at least has made the investment necessary to facilitate this.

Q3: What are the types of benefits and costs of more standardisation in data and data exchanges?

More standardisation in this area may prove to be challenging considering the data exchange processes discussed in the consultation paper are already among the most standardised and format-defined in the industry.

That said, s. 4.29 of the consultation paper notes issues with inconsistent datasets resulting from some participants choosing to use non-half hourly data in reconciling consumption with generation data, and at s. 4.30 the consequence of this being...
traders estimating missing values for up to 14 months.

Again, this is a product of having an operating environment where not all participants settle via interval data. The issues discussed could be largely (but not entirely) addressed if all participants settled on interval data as a standard practice.

Q4: What are the types of costs and the benefits of using more accurate available data for settling transactions?

In Genesis’ experience, there is no doubt that using half-hour interval data increases the accuracy of the allocation process, as illustrated by the comparison below:

- Bi-monthly reads = estimation of volume for up to seven weeks, calendar month volume spread to trading periods with industry shape, large swings in wash-up volumes (refining estimations);
- Monthly reads = estimation for up to three weeks, calendar month volume spread to trading periods with industry shape, moderate swings in wash-up volumes (refining estimations);
- Daily or month-end reads = actual calendar month volume, calendar month volume spread to trading periods with industry shape, small swings in wash-up volumes (adjustments to industry shape);
- Half-hour consumption = actual calendar month volume, volume spread on actual consumption, minimal movement in wash-ups.

We consider the decision to move to half-hour reconciliation is a trade-off between accuracy and the cost of implementing the system. We chose to make the investment and as a result have enjoyed wash-up movement in the range of 0.5-1.5 per cent.
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<th>Q5: What changes may be required to allow more buyers and sellers of products and services to access the industry’s data systems in the future?</th>
<th>The key change required in our view is all participants transitioning to settlement on interval data. The ability to access data in real-time (or as near to real-time as possible) will enable the delivery of new products and services for the benefit of consumers: essentially this is the foundation to underlay innovative customer solutions for all ICPs. To the extent advanced metering is available some retailers are already taking advantage of real-time data to offer value for consumers, but until interval data is available industry-wide, mass participation in the electricity market will continue to be limited. We also believe a review of whether the extent of data required under the Code now is still required in current and future data systems is needed. For example, the Authority should consider if some of the control reports and supporting files we send in addition to consumption data are fulfilling a purpose.</th>
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<td>Q6: What are the risks to security of data exchange and consumer privacy from more participants exchanging more data?</td>
<td>The consultation paper specifically refers to security in respect of cyber-attacks, and Genesis agrees robust security is needed to protect data exchanges from such risks. We suggest learning from international examples (e.g. stock exchanges including NASDAQ and CAC) that facilitate complex and high frequency data exchange. More generally, Genesis is of the view protecting unauthorised access to and use of consumer data is important now and will continue to be as more participants exchange more data.</td>
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The industry needs to carefully consider whether the current regulatory framework is able to ensure there is always an express purpose for collection of customer data, and clear parameters around how that data may be subsequently used.

Having proper systems and processes in place is crucial if the industry is to have a social licence to operate and keep the trust of consumers.

Q7: What is your view of the Authority’s overall impact assessments of the potential problems facing the electricity industry today and in the future (Table 3)? Use the Impact Assessment template in Table 10 ( Appendix A ) to note any changes.

Genesis agrees the Authority has recognised some matters worth considering now and in the future in table 3 – particularly that settling transactions using more accurate data would have a high efficiency impact and ensuring the data system can deal with more participants and transactions will have a high competition impact.

That said, we note several mistakes throughout the consultation paper that we believe are confusing matters:

- 4.12 – a content code does not indicate communication functionality of meters: there is a defined flag on the registry that indicates whether a meter is communicating or not;
- 4.16 – offering time-of-use pricing or real-time pricing is not dependent on settlement timeframes;
- 4.19 – customer billing cycles and billing a customer based on actual consumption is also not dependent on settlement timeframes;
- 4.30 – not all retail propositions are aligned to wholesale inputs;
**Q8: What other potential problems do you think impact data and data exchanges for market transactions? Use the Impact Assessment template in Table 10 (Appendix A).**

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<td><strong>4.33</strong> – aggregate half-hourly data is actual data: there is no estimation;</td>
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<td><strong>4.35(a)</strong> – customers can (and are) still able to be billed actual consumption from non-half-hourly data. Further, customers can enjoy benefits of advanced metering(^2) independent of whether a retailer also uses half-hourly data for market settlement;</td>
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<td><strong>4.38</strong> – retail prices do not differentiate based on the type of meters installed, and footnote 22 seems to wrongly suggest mass market time-of-use pricing would be the only efficient pricing model;</td>
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<td><strong>4.48</strong> – this is an example of a limitation in the Code process, not the data exchange system (as per our response to Q1).</td>
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\(^2\) Benefits including no meter reads, bills based on actual consumption and ability to manage consumption via applications (e.g. Genesis’ *My Account*).