Format for submissions

Complete the submission form below and email your completed submission to digitalisation@ea.govt.nz with 'Digitalisation paper' in the subject line.

Terms and Conditions

We will publish your name and organisation (if this applies), but not your contact details. If you think we should not publish any part of your survey response, please tell us which part shouldn't be published and why.

Please note, all survey responses, including parts you've asked not to be published, can be requested under the Official Information Act 1982. This means we would be required to release all surveys in full, unless there was a good reason under the Act to withhold it. We would consult with you if this meant releasing information you asked not to be published.

I understand (circle one): (Yes) / ~~No~~

Submitter full name	Terry Paddy
Who are you responding as	Innovator or technology company
Organisation and position (if applicable)	Cortexo

Questions	Comments
Q1. What could stop or slow digitalisation of the electricity system? What would make it successful? How far should digitalisation go?	Digitalisation is being slowed by the absolute inertia shown by participants in collaborating on the exchange of data, because of perceived issues, e.g., affecting their commercial advantage. For example, Cortexo requests a lot of data through the registry messaging hub, and we would often previously see data being delivered to us as late as possible. This is less of an issue now, but the process is so inefficient as to not be useful and could do with improvement. What would make digitalisation successful is the process the Authority is doing - wide engagement and getting people into the same room to talk through the issues. We suggest the Authority is careful to have people involved in this work (not just making the outcomes by

	itself) so that any errors in ways of thinking can be clarified more easily. Use of the international systems already in place would also help make digitalisation successful. The discussion paper referred to open data in the UK context; we would also highlight that Icebreaker One manages authentication of access layer before it is available *en masse* to parties. If we take the best bits out of the UK experience as we move forward with digitalisation in the New Zealand electricity system, that would make digitalisation successful. Digitalisation should go right to the absolute end point, privacy and cybersecurity willing, to enable visibility, transparency, interaction, and reward for the use of data. This is a journey where the actions will change, so if what comes of this consultation is a roadmap, an ideal opening statement would be that "this will change". We should digitalise everything, but we recognise it will not all happen tomorrow.
Q2. Do you agree with how we have defined 'data' and 'information', especially in the context of making data more visible?	We agree: • All data should be available, so it can then be turned into information to make it more useful. • The paper also reflects that some information becomes a little like IP, and that there is reward for adding value to the data that shouldn't be stopped as that is the innovation that will lead to growth. We note some information is for the public good and should be able to be used for that purpose. A good example is price comparison; consumption and tariff data together give information around billing. We think it should be made available to all, anonymised where needed, to allow price comparison. Some parties maintain a hold over data, which should be critically assessed.

Q3. What data do you think needs to be more visible?	Cortexo works consumption data, and considers there are some aspects are easy to fix, and that there is still some data that is not easily visible. Where the data exists, making it available is more of a simple tweak, e.g., specifications around metering information to include specific channel data. Some data that we need is not visible, e.g., ICP-level tariff information. Cortexo can ask retailers to provide generally available tariff plan information in EIEP14 format so that exchange is machine-to-machine or digitalised, but out of the 12-15 requests we might make, only 3 are in EIEP14 format (as it isn't compulsory) and the rest in spreadsheets or PDFs which are impossible to process easily. Even so, none of that is ICP-level pricing information – which is unavailable. Retailers would argue ICP-level information is available on a consumer's power bill every month, but it isn't in a standardised format, which makes it hard to compare over a range of different retailers and therefore make decisions on. The FlexTalk project (we are working on with the EEA and EECA) requires historic data to allow comparison of consumption data as it changes inside the home (eg, solar and heat pump use would show the shift away from peak to off peak). Access to consumption data from retailers isn't difficult but is slow (5 working days). The first request doesn't hold up our work, but if we want to update the analysis in a week or two alongside what is being measured inside the house, it will cost an amount at the retailer's discretion which isn't acceptable for a project, and we must wait 3 months before we can make another free request. We are aware the Authority is increasing that to 12 requests in 12 months. More importantly, for the ~140 ICPs across 12 retailers in the FlexTalk project, we cannot access standardised tariff information for each ICP without dissecting each project participant's energy bill. We would also have to do this monthly/whenever they change retailers or

	plans. There is a lack of standard terminology with plans also, and no explanation of the how the bill breaks down into components. Cortexo need to do this manually, which isn't scalable and therefor stifles innovation. If we digitalised this aspect of data communications, we would have a standardised format, standardised exchange and all the benefits that comes with these. Another area we consider should be more visible is the network connection point – we don't know how big the connection fuse is. This means if a client of ours elects to do a large upgrade to electrify/replace boilers (for example), and are using energy consumption information to work out where they might best upgrade – they may get caught out when a network charges the customer for the upgrade of a transformer or poll fuse change to accommodate the increased load, and the customer hasn't been aware of it as being an issue because the capacity of the network connection isn't visible to them. When we move to a consumer data right (CDR) for the electricity sector, other data products should be visible too. For example, if dynamic operating envelopes end up being used as a tool to manage networks, it should be visible to a consumer (via data) if their connection point is being managed in a way that limits their export. This is so they understand what effect this may have on returns for their future investments in distributed energy, and/or for planning purposes. In that way, network data and how capacity on networks will be managed is also important data.
Q4. What challenges do you think we might face in trying to increase visibility? What considerations need to be given to data privacy or cybersecurity? How could increasing visibility create more opportunities for consumers, participants and innovators?	There are two challenges: • There is an unwillingness by industry to invest in better connectivity and data streams because it costs to change technology/systems • For consumers/third party/aggregators, there is a lack of desire to move too fast because we can expend a lot of time, effort and funds for no return if we cannot connect

	our asset, or there is no data accessible and no means to get it. We also consider there is a need to move technology forward, from file exchange through flat/CSV file via FTP, toward modern API and formatted data objects. These make it more efficient to transfer data, and easier to structure it, maintain it and allow modern users to use the latest tools rather than legacy tools. Privacy and cybersecurity are paramount. Moving forward, the system needs to leverage the expertise of people who focus on cybersecurity and privacy *as change is made*, so that their assistance can ensure others are on the right path in their the work to design solutions. New Zealand's Privacy Act is strong, and the new CDR has strong foundations in privacy, so those parties wanting to restrict data use should not be able to use privacy as an argument or tool to do so. Public good can mitigate smaller privacy concerns if there is proper assessment of how the data is used (eg, checking credibility and authorisation). With the proper assessment, there should be no further concerns that the data isn't being used without the Privacy Act in mind. We note that consumers are also implied to give their consent for appropriate use of their data through their agreement for connection to the system.
Q5. What work are you planning or doing to increase visibility within the electricity system? Are you aware of any work that contributes to this goal?	Through FlexTalk, we are working on lowering power bills by allowing optimisation of household energy use. We look at the data and use it to make smart decisions. With householder permission, that data can also be used by the network to see the flexibility made available from a consumer and manage the network more effectively. Our FlexViz product allows visibility at a GXP-level of the flexibility available across New Zealand. It has approximately 10% coverage, as it relies on flexibility service providers (FSPs) providing this data. This data is transmitted every 5 minutes to Transpower via OpenADR, and is available within the System Operator's

	control room (for example). This data is also available for EDBs to use, but none do. There is a lot of work going on through various parties; with flexibility as the example: • Transpower connects directly to large suppliers of flexibility/load. • Our Energy's local flexibility market collects information around the procurement and availability of flexibility • FlexViz shows real-time flexibility at the GXP. These systems work together. There are no certified standards at the moment, so we are making it work by using open standards.
Q6. What challenges do you think we might face in increasing interoperability? What other opportunities do you think greater interoperability will bring?	Within the context of flexibility, we see the need for discussion around who is the "highest power". For example, if Transpower asks for a party to take an action, it is important that the system responds. If a network asks for an action that is different from Transpower's request, the system needs to consider which set of instructions should override the other. We consider it should be Transpower's instruction first, then EDBs and individual flexibility asset owners etc. At the household level, flexibility assets belong to the consumer, so they should be the ones to decide what they make visible, what instructions they are willing to accept and what they won't accept. Consumers will generally do this through third parties, aggregators and other parties who will manage their asset to maximise the consumers benefit, not to necessarily maximise the network's benefit. Emergency signals should of course still be able to override, as we all understand what needs to happen to avoid the grid going black. In terms of opportunities, it will enable greater exchange of data. Interoperability will enable greater visibility of data through standardisation and lead to innovation. Several years ago, Cortexo worked with a company that could effectively scan a consumer's power bill, work out the consumer's tariffs, request their data,

	assess which retailer they should be with and affect a switch – but none of that could work in New Zealand as the data interoperability wasn't there, the request for data takes too long, and third parties can't access the detailed tariff information that would allow those decisions to be made. Technology isn't the problem, process is.
Q7. What work are you planning or doing to increase interoperability within the electricity system? Are you aware of any work that contributes to this goal?	Refer answer to question 5. Cortexo operates a certified OpenADR protocol service, using an international interoperable standard to exchange information around distributed energy resources (DER) and to allow dispatch. We have the same with IEEE 2030.5 – the other well-known international standard. From our point of view, covering both standards enables interoperability of utilities and DER. This avoids every EDB having their own API for flexibility suppliers and separate connection standards, which is the path the industry looked like it was heading down a while ago. We are doing a lot of work in the open standard space; the FlexTalk project with EECA and the EEA is very much around this.
Q8. What challenges do you think we might face in simplification? How could simplifying create more opportunities?	The challenges are explained well in the consultation document. For a supplier of a product or service (for example, a retailer) – bundling can make the product look complicated. Powershop bundles are a good tool, but to price it out as a third-party to then break down the tariff rates, the formats are tough to standardise. We think there is a need to be able to standardise underneath the product – the consumer consumes what they are billed for, and that needs to be clear to them in a simplified way at a low level even if the product offer structure is complex. Simplification creates innovation. We recall a group of innovators in Wellington approximately five years ago; no trials got off the ground as the electricity system was too complicated and the necessary data wasn't accessible. More innovation will lead to more competition, and more competition will lead to lower prices.

Q9. What work are you planning or doing to increase simplification within the electricity system? Are you aware of any work that contributes to this goal?	Refer to our response to question 7; we use OpenADR and IEEE 2030.5 international standards to exchange data and to instruct DER. Common open standards which are used internationally means that international products and companies can enter our market easily.
Q10. Do you have any other comments on this paper?	We agree with the FlexForum and EEA responses to the discussion paper. We think it is important to get the views of innovators who actually use the mechanisms and understand the issues from interacting with them. We further note a number of consultations released by the Authority recently as being interlinked, and we would like our comments on multiple trading relationships and decentralisation to be considered alongside the above comments.