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Redback Technologies submission to the New South Wales Department of Planning, Industry and Environment Consultation Paper:

Promoting Innovation for NSW Energy Customers

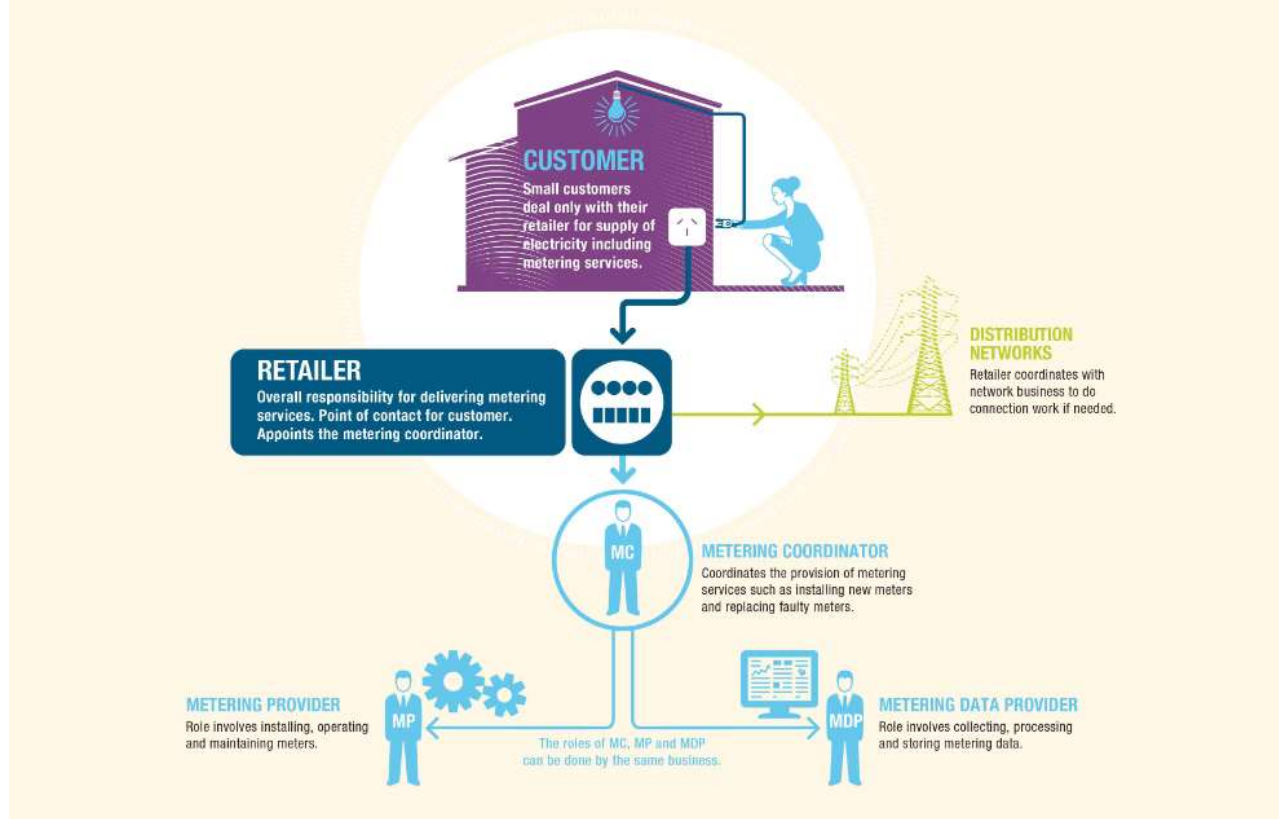
Redback Technologies is an Australian-owned and operated clean tech start-up based in Brisbane QLD. The company designs, manufactures and promotes smart, internet connected services and solutions to customers in Australia and New Zealand. Redback Technologies is the leading Australian-owned manufacturer for residential solar and home battery systems. Under the brand luceo energy, the company supplies SaaS solutions for visibility, safety (neutral integrity) and DER management to Distributed Energy Service Providers.

Based on our experience and expertise in working with Australian households and consumers as well as DNSPs we like to submit the below feedback to the Department with regards to the Smart Meter policy considerations raised in the consultation paper.

It is our believe, that the policy reforms and options presented in the consultation paper will conflict with the governments objectives regarding consumer benefits and access to reliable and affordable energy. While we believe that the intentions and objectives of the Department are correct and we support them, we believe that both a lack of consideration for technology and alternatives and the existing regulatory environment constitute a high risk to both consumers and the intended outcomes of the Department. If the policy of the Department is rolled out as presented in the consultation paper, it will result in the installation of thousands of meters that are neither smart nor provide the list of benefits as stated on page 4 of the consultation paper.

Based on our understanding of the current regulatory environment and the roles and responsibilities of the parties, as shown in the below graphic published by the AEMC, there are no incentives for any party to invest in and install a future-proof metering solution that will enable to unlock the benefits to the various parties.

METERING ROLES AND RESPONSIBILITIES



The key to unlocking and providing the listed benefits to the stakeholders lies within the technical specification and the resulting capability of the connection point meter.

There are three aspects to consider in depth:

- 1) The specification and capabilities of the meter itself. The sensor inside the meter needs to be able to measure the required data points.
- 2) The data connection from the meter to a data platform as the value of real-time data is different from batched data that uploads historic data points.
- 3) The ability of the party that receives the data stream to provide a data platform that can ingress, store, manage and analyse the data and service it to the receiving stakeholders (e.g. retailers, DNSPs, consumers)

Based on our experience in the field, a meter specification that allows to provide a real-time data stream as well enables two-way communication to the meter to manage behind-the-meter devices (e.g. DER, hot water, etc.) through the same channel, must not be more expensive than a current digital billing meter (for the purpose of clarity, we do not believe that the current digital billing meters should be called smart meters as they are not actually smart).

4G data communication capability that allows both real-time and bi-directional communication should not cost a metering service provider more than \$15.00 per connection point per year if deployed at scale (more than 100,000 connections).

A meter capable of sub-second sampling of both grid and connection point electricity streams (e.g. household loads and PV system) that includes a 4G capable radio chip would not cost more than today's digital billing meters if deployed at scale (see above). If a roll-out of new meters would be >500,000 units, such meter device costs should be close to \$200.00 a unit. Installation costs and time would not vary from current meters.

The main difference to today's set-up would be a data-platform that is capable to receive millions of messages per day. Such technology is available today and is being developed and deployed in Australia by Australian companies in related circumstances. The connected data platform is needed to not only manage and store the incoming data stream, but also analyse the data for the different recipients and use cases.

I) Retailers still need the household connection point data, including the solar PV system data for their billing purposes. In addition, retailers could use the live data stream to provide new services to their customers such as "live bill" or "tariff optimisation" etc. Electricity retailers have long been criticised by consumer advocates that they are untransparent when it comes to their billing. A real-time data stream, if utilised could provide much needed transparency for consumers and rebuild trust between the parties.

II) Consumers are interested in their data independent of the fact if they own a solar system or not. Most households have little or no understanding how their behavior impacts their bill. The current form of billing that provides high-level summaries is not helpful to educate consumers and protect them from bill-shock. Consumers need a real-time view of their electricity consumption to better understand cause and effect. A retailer or a third-party service provider is able to provide this through an intuitive app. To maximise consumer benefits, such app can show historic profiles and compare different time periods to highlight variations in the use of electricity. Adding AI functions to the app would allow to provide energy saving and energy efficiency recommendations tailor made for the consumer (e.g. your fridge uses a lot of energy, your device might need replacement, a new fridge can reduce your energy consumption by 10%, etc.). The cost of such analytics and services are around \$10.00 per household per year.

III) Distributed Network Service Providers (DNSPs), with the exception of Victoria, are currently struggling to get access to metering data from metering service providers. Some DNSPs are providing metering services as part of their group of companies through related entities to overcome the matter. Nonetheless, the data provided by current digital billing meters is not always of value to DNSPs who look to use this data for safety and optimised network management. Real time access to a data source that is able to collect the required data points in sufficient accuracy and granularity will provide the best outcomes for DNSPs and subsequently consumers in terms of safety as well as cost. Real time data helps to determine DER hosting capacity for network feeders and can help defer investment in network assets, real time data helps to improve the detection of dangerous neutral integrity faults even before they happen and real time data allows DNSPs to use state estimation to provide dynamic operating envelopes to connected DER, a key requirement for a dynamic network future with 100% variable, zero carbon generation.

The connection point meter naturally would be the single point of truth for all stakeholders and lead to better transparency and lower cost for all stakeholders. The increased visibility will enable more clean energy resources to be connected and dynamically managed on the current infrastructure. The multiple stakeholder benefits will allow to split the costs between the parties and reduce the cost burden on consumers. If consumers would be given the full rights to their data, they could trade the access to such data in return for services or rebates. Such empowerment of consumers would lead to a shift in the power between consumers and retailers and lead to better consumer outcomes. Consumers could hire agents to manage their electricity connection and data to provide best pricing at all times to consumers using the actual consumer profile.

Last, it is worth mentioning that we believe it is not in the best interest of consumers if they are forced to pay for a meter upgrade and potentially in addition a meter box upgrade without getting full access to their data in a way that allows households to use such data in a meaningful way. It should be mandatory to provide consumers with real-time access to their data in the form of an app that presents such data in a consumer-friendly way.

If meters are not specified to consider emerging use cases today, there is a huge risk that the state of NSW will roll out a large fleet of outdated technology with limited ability to provide value to consumers and with limited ability to support the objectives of the Department. The Department has a huge change to deliver a state-of-the-art infrastructure that will deliver better outcomes for all stakeholders if they break the barriers to meter data access and share costs and benefits between the parties whilst putting consumer interests in the top spot.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'P. Matweew', with a stylized flourish at the end.

Patrick Matweew

Chief Executive Officer