



Dr Kris Funston
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Australian Energy Regulator
By email: AERinquiry@aer.gov.au

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Dear Sir

Re: Draft DER integration expenditure guidance note

Thank you for the opportunity to comment on the DER integration expenditure guidance note.

As the largest Australian manufacturer of water heaters, Rheem markets a wide range of solar, heat pump, high efficiency gas and electric water heaters and through our Solahart brand is one of the largest installers of household solar PV and batteries in Australia. Over the last four years we have also commenced the manufacture and installation of innovative smart electric water heaters and associated home energy management systems that offer customers the ability to actively participate in the developing markets for controlled DER, specifically demand response and load shifting to match and balance with renewables generation.

Rheem is concerned that the guidance note does not address the need for and ability of DNSPs to make appropriate investments in DER control and orchestration tools that will ensure the best outcomes for both the household and the networks.

The substantial benefits of controlled DER are well understood. In a May 2020 report commissioned by the Energy Security Board¹, identified that by 2039 over 50% of the value from controlled DER could be realised by DNSP's. In particular that report supported DNSP's making "flexibility payments" to controlled DER participants to achieve avoided distribution network investments. They valued those flexibility payments at \$1.7 Billion in present value terms to 2039.

The opportunity to realise these benefits has been stifled under current regulations. As far back as January 2017 the AER consultation paper "Demand management incentive scheme and innovation allowance mechanism" highlighted that "the regulatory framework does not provide a direct means for distributors to monetise the economic benefits of demand management services, where these accrue to other parts of the electricity value chain. Given this, demand management projects can arise that are not privately profitable for the distributor but would create benefits across the entire electricity market"

Rheem believes that the design of the Demand Management Incentive Allowance (DMIA) failed to address this fundamental barrier to the realisation of the benefits of controlled DER. Given that DNSP's are expected to achieve the largest share of benefits from the controlled DER value chain, it is essential that they be given the ability to realise these whole of industry benefits.

¹ Baringa, "Assessment of Open Energy Networks Frameworks" May 2020



Whilst the “Draft DER integration expenditure advisory guidance note” provides clarity on the methods of quantifying these benefits, it does not directly address the limitation on realising this benefit – the expenditure that is required to facilitate the orchestration of Home Energy Management Systems (HEMS). Australian consumers are rapidly adopting a range of DER, however the ability to orchestrate these appliances requires additional hardware and software that comes at an additional cost that is not usually considered at the time of purchase. Rheem’s experience from many controlled DER installations is that additional customer equipment such as a HEMS gateway, metering and end point devices are required to enable connectivity with and orchestration of a diverse range of DER including pool pumps, hot water, air conditioning, BESS, EVs and PV systems. There are also costs associated with ongoing fleet and software platform management and maintenance.

Rheem understands that there is hope that a broader implementation of cost reflective pricing may drive the uptake of the required technology, however the evidence suggests energy consumers are generally cost inelastic, and that behavioural change declines over time in response to cost reflective pricing². For cost reflective pricing to be effective, Rheem believes that it needs to be accompanied by appropriate tools, such as orchestrated DER, to enable automation of home energy optimisation and consistent market participation by consumers.

We are also concerned that the wholesale market benefits discussion at section 6.1 is directed at DER generation rather than the substantial benefits that could be gained from broadly orchestrated demand management. Similarly, there appears to be little recognition of the role that DER could play in addressing minimum demand, both through the application of dynamic operating envelopes and load shifting.

Enabling support for household level orchestrated DER investment by DNSPs will ensure that DER represents a competitive alternative across the range of addressable network investments, down to the LV network level. Costs of orchestration of DER can be offset by the benefits from avoided investment at lower voltages at the zone substation and sub-transmission level, making DER far more competitive overall. Rheem believes that the current RIT-D and Distribution Annual Planning Process does not provide the same opportunities for more wholistic and long-term network planning approaches seen in other jurisdictions. For example, it is hard to see the UK Power Networks wholistic Active Network Management System and associated Flexibility Tenders³ being replicated in Australia under the current regulatory arrangements.

Under their recently revised “Step change” scenario, AEMO⁴ has forecast an increase in behind the meter solar PV up to four times current levels by 2040.⁵ It should be noted that the current behind the meter PV install capacity is materially greater than the forecast provided under the step change scenario for 2021. This is already resulting in minimum demand issues affecting grid stability in a number of locations.

² Frontier Economics “Impact of TOU pricing on EnergyAustralia customers – Final report” December 2009

³ <https://www.ukpowernetworks.co.uk/internet/en/news-and-press/press-releases/More-than-%C2%A350million-available-for-Flexibility-in-biggest-ever-tender.html>

⁴ <https://aemo.com.au/en/energy-systems/major-publications/integrated-system-plan-isp/2022-integrated-system-plan-isp/current-inputs-assumptions-and-scenarios>

⁵ https://aemo.com.au/-/media/files/electricity/nem/planning_and_forecasting/inputs-assumptions-methodologies/2020/green-energy-markets-der-forecast-report.pdf?la=en



South Australia was the first jurisdiction to face the impact of minimum demand issues at scale. This forced SA to implement a remote switch off capability for all new PV systems. This sub-optimal arrangement has introduced an inequitable situation where new PV installs are subject to export limiting and higher costs, while existing PV systems can continue to have unlimited export. More concerning in an emissions constrained world, is that export limiting is resulting in renewable energy being curtailed and lost from the grid. It is clear that controlled DER will play a key role in addressing these issues.

We would ask that you give due consideration to the perspective of innovators looking to invest in the substantial but largely unrealised role that controlled DER could play in the Australian market.

Yours Sincerely



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