Ag Energy Taskforce

Wholesale Demand Response Mechanisms – Response to Rule Change proposals

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Introduction

Thank you for the opportunity to respond to AEMCs consultation paper on wholesale demand response mechanisms.

This paper is provided on behalf of the Agriculture Industries Energy Taskforce (Ag Energy Taskforce) which is convened by the National Irrigators Council (NIC). The Taskforce does not have the resources to provide a detailed technical response to all aspects of the consultation paper, so this response confines itself to broad questions of policy and support for mechanisms which may result in lower energy costs for agricultural consumers.

Agriculture has consistently pointed to the serious negative impact on Australia's ability to produce food and fibre, from rapidly increasing energy costs. Energy prices in each state on the NEM are making Australian agriculture less viable and less internationally competitive.

We have made several previous submissions, outlining in more detail impacts on agriculture, our concerns with the operation of the NEM and its failure to facilitate a genuine competitive market. A number of those submissions have been based on original research about the impacts of high energy cost and lack of competitiveness in the industry.

In particular our submission to the ACCC Inquiry into electricity included detailed case study examples of negative impacts on food and fibre production.

The Ag Energy Taskforce has expressed its goal for power prices as being for a long-term price ceiling of eight cents for electrons and eight cents for distribution – 16 cents per kilowatt hour total maximum.

We would like to make it clear that it is not acceptable to industry and to Australia's competitive position to simply see stabilisation of electricity prices at their current high levels.

It is now widely accepted that Australia has gone from being a country which enjoyed a competitive advantage in energy costs, to being one where energy is now a competitive disadvantage.

Agriculture is one of the hardest hit sectors, irrigators have seen their competitiveness and ability to achieve a profit diminish rapidly as the price of pumping water for those on the grid has escalated. Similarly, agricultural activities involving processing, packaging and cool storage have been severely impacted by rising power prices.

In previous submissions we have outlined some of the impacts. These include loss of export markets, loss of profitability, and the exit of producers from grid. Unfortunately, the market for much of Australia's food and fibre sees farmers as price takers and, in general, they have been unable to recover the increased costs of production.

We have strongly supported substantive reform to the energy market to introduce genuine competition and we have provided input to a large range of enquiries and reviews.

On that basis we would also provide our support for rule changes which would enhance the ability of agricultural energy consumers to access lower prices by way of better access to wholesale demand response mechanisms.

While we are not in a position to make expert technical commentary on the options discussed in the paper, we do wish to provide support for rule changes which achieve some of the objectives outlined in the applications and the discussion paper.

Excessive network costs

Our submission to ACCC enquiry into retail electricity outlined concerns about excessive profit obtained by network operators and excessive costs of local networks. In part our concerns are based on assessments which indicate that agricultural consumers, including irrigators, are being charged for network assets which are not required to service demand areas.

The submission above included research from Sapere Research Group which demonstrated that "ample evidence that actual electricity costs, profits and typical retail prices across the NEM substantially exceed economically efficient levels" (Ag Energy Taskforce and Sapere Research Group, 2017, p. 42).

This was confirmed by analysis of actual network profit data which we submitted to the AER as a part of their consideration of Rate of Return Guidelines.

We remain hugely concerned that primary producers and irrigators in particular are being asked to pay the cost of supplying peak loads to which they do not contribute.

On that basis we would strongly support a measure which assisted in the objective listed on page 6 of "electing to avoid to some consumption during network peaks and defer investments in capital intensive networks".

We support the broad objective of a rule which enables consumers to be able trade of consumption against pricing across the power system.

In providing support, we do not have the resources to comment on the mechanisms or technical aspects of the operation of mechanisms outlined in the papers. In general, however, we would agree with and support the objectives outlined in the proposal submitted by PIAC, TEC and TAI.

We are concerned that the rule change request submitted by the AEC to introduce a register for wholesale demand response, if accepted, would enable generators and retailers to capture the market opportunities from a wholesale demand response mechanism at the expense of consumers.

Our underlying objective in supporting the rule change sought by PIAC, TEC and TAI is that consumers rather than generators and retailers capture the benefits.

The core around the operation of proposals is that from the point of view of the consumer they need to result in an interaction that is simple, easy to understand and able to be facilitated by the third party including the contracts and any equipment upgrades required.

Any new arrangements in this area should not remove the incentive (however small that may currently be) for retailers and other network players to attempt to provide similar opportunities to consumers.

There has been a substantial amount of discussion in agriculture about the ability to lower energy costs with tariffs that reflect or enable load shedding in peak periods. It would be fair to say that there is still a large gap between those few who are able to access tariffs and have the equipment to enable it, versus the many who are on spectrum of not understanding that they might be able to undertake some kind of demand response; who may feel they don't have enough information; or don't have the appropriate equipment.

We note that in Queensland, irrigators are currently trialling the use of a stand-alone dynamic control load tariff (T33) which includes the capacity for network to switch off power for pumps in periods of peak demand. This tariff has been welcomed by several irrigator groups. But the stand-alone trial is limited to a few participants.

We would hope that a new rule would add to the ability of retailers to offer suitable demand response options, such as T33< and also provide the opportunity for third parties or existing retailers, to provide comprehensive packages for agricultural consumers including any necessary equipment upgrades, energy use assessments and education.

Could agricultural consumers take up demand response arrangements?

Research undertaken for the Ag Energy Taskforce by Sapere Research Group (funded by Energy Consumers Australia), "Empowering Irrigation Consumers Electricity Purchase Arrangements", indicated that among irrigation energy consumers there is a clear knowledge gap.

Respondents generally indicated that they would like to be able to engage in demand response, but felt they would not be able to, whereas assessment of their actual energy consumption indicated that their operations were suitable for appropriate demand response management.

The work undertaken in coming to this conclusion included surveys and interval data analysis. The outcomes are discussed further below.

Cost reflective prices would be lower than current prices

The Sapere research confirms that Irrigators currently pay excessive costs for networks compared to the demand they generate. The assessment based on survey results and analysis of interval data is very relevant to the demand response question because it highlights that:

- *There is no evidence to suggest that irrigation demand is high let alone increases during extreme heatwaves, when maximum annual demand and very high power supply costs are most likely.*
- *It appears unlikely pumps are running at full capacity at times of peak system demand. Across states and different types of primary produce, use of pumps predominantly coincides with times when system demand is at just 30-55 per cent of system annual maximum demand.*
- *Seasonal irrigation demand peaks in late spring (Queensland) or early summer (elsewhere) reflect rainfall variations between regions. Demand peaks are not driven by very high temperatures.*
- *While about 45 per cent of irrigation equipment operates continuously over a day, other equipment is operated predominantly overnight and at a minimum during afternoons (at the mostly likely time of system peaks).*
- *Pump demand profiles are demonstrated by interval data generally to be 'flat': that is when pumps are being used, demand is at/above 90 per cent the pump's maximum demand.*

The non-coincidence of maximum irrigation demand with maximum system demand has a direct effect on the delivered cost of electricity, both wholesale and network (transmission and distribution), for irrigators. For example, Table 1 below provides the volume weighted average (VWA) wholesale electricity costs of individual irrigation demands compared with the VWA costs of the system demands represented by the deemed profile for small customers. These clearly demonstrate the

reduced wholesale cost (using half hourly wholesale price data for the relevant periods) of different irrigation profiles compared with the relevant deemed demand profile." (Sapere Research Group, 2018, p. vii)

Table 1 Comparison of volume weighted average spot market costs

Individual irrigation demand prices are compared with contiguous aggregate prices ($/MWh)

DNSP	Crop	Irrigation profile	Deemed profile	Irrigation/deemed profile
Ergon	Sugarcane	$48.06	$107.83	59%
SAPN	Fruit and nuts	$82.51	$134.95	64%
Powercor	Lucerne 1	$68.84	$82.60	83%
Powercor	Lucerne 2	$63.07	$82.60	76%
Powercor	Tomato	$58.32	$82.60	71%
Powercor	Cotton	$49.57	$82.60	60%
Powercor	Tomato	$56.11	$82.60	68%
Powercor	Cotton-Lucerne	$60.85	$82.60	74%
Powercor	Cotton	$50.49	$82.60	61%

Analysis of use of, and capacity for, demand response

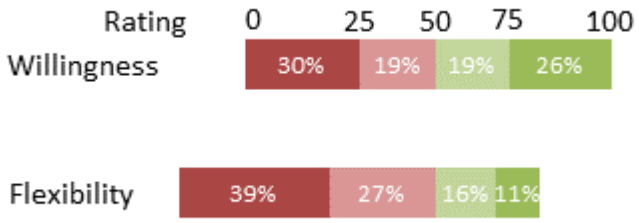
In discussing demand response, the Sapere study said:

''Demand response refers to the ability of electricity consumers to change demand for electricity in response to signals from suppliers at particular times of high demand. This signalling may be 'passive' based on a price signal to which a consumer may or may not respond, or it may involve ceding the network operator some control over the consumer's demand in return for a lower price overall.

Just seven respondents reported that they already engage in demand response, mostly some form of time of use or off-peak demand control tariff. One South Australian respondent included their involuntary move to a transitional demand tariff.

Respondents were invited to indicate on a scale from 0 to 100 their willingness to consider demand response incentives, and the flexibility/adaptability of their irrigation system to participate in such schemes. Figure 19 suggests that while there is a strong willingness to consider demand response strategies to controlling irrigation costs, there is a countervailing perception of a farm's flexibility/capability to do so.'' (Sapere Research Group, 2018, p. 22)

Figure 1 Flexibility and willingness to consider demand response



The survey results indicated a willingness to engage in demand response but a lack of flexibility.

However, when actual interval data was examined it became clear that most irrigation consumers would have a far greater capacity to engage than they realised.

On the basis of their interval data analysis Sapere concluded that:

''Our comparison of survey responses and interval data suggests many irrigators could under-estimate their capacity to power down demand during limited high system demand/high price periods. This is because they typically perceive a coincidence between their own maximum demand and system maximum demand that is much higher than the actual coincidence.

As noted earlier, our quantitative analysis of irrigator demand profiles strongly suggests that the likelihood that high irrigator demand coincides with high system demand periods is very low. This means there is an opportunity for irrigators to engage with various demand response signals.''
(Sapere Research Group, 2018, p. 36)

This research supports the view that there is a much greater capacity to engage in demand response but that it is hampered by lack of knowledge, as well potentially, by lack of appropriate equipment.

On that basis the Ag Energy Taskforce would be supportive of practical rule changes that might improve the access to, and take up of, demand response.

Conclusion

The Ag Energy Taskforce notes that bringing electricity prices back down to sustainable levels, where they no longer act as a barrier to competitive production of food and fibre, will take a large range of actions from regulators and governments within the NEM.

We strongly support continued action on all fronts from implementation of the ACCC recommendations through to action by regulators to ensure excess profit is eliminated.

The proposed rule changes relating to demand response may also be a positive contributor to enabling primary producers - particularly those with substantial demand from irrigation pumps, processing, packaging or cooling - to better structure their energy use to avoid peak or critical demand periods and therefore bring down their overall power costs.

However, it is critical that if new rules are introduced, they ensure the benefit is in additional opportunities for consumers to access these arrangements, with the price benefit passed on to consumers.

On that basis we support the introduction of rule changes to enable better access to demand response by agricultural consumers.

References

Ag Energy Taskforce and Sapere Research Group. (2017, July 12). *Submission to the electricity supply and prices inquiry.* Retrieved from National Irrigators Council: ample evidence that actual electricity costs, profits and typical retail

Sapere Research Group. (2018, July). *Empowering irrigation consumers electricity purchase arrangements.* Retrieved from National Irrigators Council : https://www.irrigators.org.au/wp-content/uploads/2018/07/Empowerment_NIC_20180716_final_report_918.pdf