

A few
words.

Dr Ron Ben-David
Chairperson
Essential Services Commission

By email: DGInquiry@esc.vic.au



3 June 2016

Dear Dr Ben-David,

Re Draft Report (Energy Value) of Distributed Generation Inquiry

AGL welcomes the opportunity to comment on the Essential Services Commission of Victoria's *Draft Report (Energy Value) of Distributed Generation Inquiry (Draft Report)*, May 2016.

AGL is one of Australia's leading integrated energy companies and the largest ASX listed operator and developer of renewable generation. Our diverse power generation portfolio includes base, peaking and intermediate generation plants, spread across traditional thermal generation as well as renewable sources. AGL is also a significant retailer of energy, providing energy solutions to over 3.7 million customers throughout eastern Australia. In 2015, AGL established a New Energy division, with a dedicated focus on distributed energy services and solutions.

Evolving customer preferences are leading a transformation of the National Electricity Market. The availability of distributed renewable energy sources and other technologies is enabling customers to exert greater control over their energy usage and demand improved services and a wider range of products from energy service providers. Although energy remains an essential service, customers now have far greater choice as to how that service is delivered.

A decade ago, the choice for customers was simply 'who' sold them energy. Now the choice is who and 'how' – how they will be supported by online services and flexible payment options, how they will combine grid supplied and distributed energy sources, how they expect to be able to monitor and control usage, and increasingly how they will share energy and share in value streams available beyond the home (e.g. network and wholesale values). Importantly, the regulatory framework should reflect the shift to a system where customers are best placed to choose the products and services that meet their unique needs.

AGL considers that demand side participation (customers responding to pricing signals from the market) is an important way to reduce system costs and deliver customer value. However we do not agree that mandating complex feed-in tariff (**FiT**) arrangements are an appropriate way to achieve this. Customers should have choice as to the products, services and pricing arrangement that, holistically, best suit their unique preferences. In the context of more cost-reflective network tariffs, the Victorian Government has also expressed a view that more complex products should be adopted by customers only on an opt-in basis.

The Commission determined three guiding principles for the inquiry: simplicity, behavioural response and materiality. In AGL's view the draft recommendations do not perform well against these criteria and, as such, are not supported.



- **Simplicity:** The proposed multi-rate FIT combines elements determined ex-ante (based on wholesale price forecasts), elements determined ex-post (based on actual wholesale market performance) and is overlaid with the varying geographic impacts of line losses. This structure and combination of inputs would not be simple either for a retailer to administer or for a customer to understand and predict.
- **Behavioural response:** The Draft Report fails to acknowledge the fact that the cost of grid-supplied energy (which incorporates network and other charges) will inevitably exceed even the 'peak' value under the multi-rate FIT. This means that customers will continue to have an overwhelming incentive to self-consume as much of their own distributed generation as possible. That is, they are unlikely to change their behaviour following implementation of the proposed multi-rate FIT.
- **Materiality:** The proposed multi-rate FIT would not have a material impact on the amount paid to distributed generators over the course of a year as compared with the current single-rate FIT. For the two years modelled, the Commission's analysis shows that under the proposal a customer would receive \$2.60 more and \$4.40 less, respectively, over an entire year.¹ This is a natural result since the current single-rate FIT already incorporates the time-varying wholesale value of exports using a typical solar output profile and the vast majority of small-scale distributed generation in Victoria is solar PV.

Given the recommended multi-rate FIT does not perform strongly against the inquiry's guiding principles, AGL cannot see that a case for change has been clearly made. This is particularly so considering the inevitable costs to implement the complicated FIT proposal in an environment where industry and customers alike are already facing significant cost and price pressures. As long as the rate remains regulated, AGL advocates the simpler, flat structure which is no cost to implement (as it maintains the status quo), aligns with the structure under which customers predominantly choose to be charged for their energy consumption and remunerates distributed generators equitably for the energy value of their exports.

We note that the best way to truly enable multi-rate FITs would be to deregulate the FIT so that retailers can respond freely to the preferences of their customers. Although the regulated FIT is a mandatory 'minimum' only, it strongly influences the structure of FITs that retailers can compete on in the market. Certainly the ability to innovate and develop competitive offerings which exceed the mandatory minimum will be more difficult when that regulated rate has a more complicated underlying structure.

The Victorian Government has made clear its aspirations to become a leader in new energy technology development and in the support of innovative business models which facilitate a more customer-centric and participatory energy market. By constraining the ability of retailers and other competitive providers to innovate their offerings to suit the preferences of particular customers and communities, the achievement of these aspirations for the new energy technologies sector will be more difficult.

With regard to the proposed deemed output tariff (**DOT**), we note that the value for renewable generation realised through the STC market is over three times higher than the current market price for carbon abatement (as determined by the Emission Reduction Fund auction prices). This indicates that customers are already well-compensated for the emissions reduction benefits provided by their distributed generation.

Any new and additional mechanism to recognise the deemed emission reduction value from distributed generation would be appropriate only after the deeming period associated with the system and STCs (typically 15 years after purchase). Further, the decarbonisation of the energy system is likely to be a multi decadal process. Given the national commitment to the 2 degree goal, the Federal government is best placed to provide overarching frameworks to provide for a gradual but persistent decarbonisation of the Australian energy system.

Finally, we caution the Commission against settling on recommendations related to the energy value of distributed generation until the analysis of the network value has also

¹ Refer Table 6.4, Draft Report

been undertaken under the second stage of the inquiry. There should be a cohesive set of recommendations that recognise the interplay of network, consumption and export pricing and prioritise outcomes that will have the most benefit to customers in the long-term. In particular, recommendations should complement rather than detract from network tariff reform and assisting customers to transition to more cost-reflective network tariffs. These are designed to reduce long-term average network charges by promoting efficient network investment and utilisation, and will provide clear time based pricing signals for the take-up of new technologies.

Our responses to the specific questions posed are set out below. Should you have any questions related to this submission, please contact Eleanor McCracken-Hewson, Policy and Regulatory Manager, New Energy, on .

Yours sincerely,

Stephanie Bashir

Head of Policy & Regulation New Energy



1. Does the proposed multi-rate feed-in tariff (FiT) allow for payments to distributed generators to better reflect the market value of their exports? If not, why not?

AGL does not consider that the proposed multi-rate FiT allows for payments to distributed generators which better reflect the market value of their exports. As the Commission notes, the current single-rate FiT already incorporates the time-varying wholesale value of exports using a typical solar output profile. Since the vast majority of small-scale distributed generation is solar PV, this is a reasonable choice.²

As illustrated in Table 6.4 neither method seems biased towards delivering more or less value to customers. For the two years modelled, the customer would have received 3% more in year 1 and 6% less in year 2 under the proposed multi-rate FiT, or differences of \$2.60 and \$4.40 over an entire year. This confirms that the methodology currently employed in the determination of a single-rate FiT is working as intended.

For so long as the cost of grid-supplied energy (which incorporates network and other charges) exceeds even the 'peak' wholesale value under a multi-rate FiT, customers will continue to have an overwhelming incentive to self-consume as much of their own distributed generation as possible. That is, they are highly unlikely to change their behaviour following implementation of the proposed multi-rate FiT. In light of this and the inevitable cost to industry to implement a multi-rate FiT, the case for change has not been satisfactorily established.

The Commission also proposes to integrate a critical peak component that pays customers 30c every time the spot price exceeds \$300/MWh on the understanding that this reflects a value at which retailers often hedge their exposure. AGL considers that this proposal appears to effect a regulated approach to market risk management, straying away from the task of determining a FiT that reflects the direct value of distributed generation in the wholesale electricity market (that is, the spot market managed by AEMO) and into the territory of retailer management of wholesale exposure and portfolio risk.

Fundamental to the structure of the NEM, every retailer should pursue their own strategy for risk management according to their own particular circumstances, including retail load shape, the availability and price of various financial hedge products and the degree of in-house generation acting as a physical hedge (amongst others). In AGL's view it is inappropriate for the regulated FiT to mandate a price that reflects a hedge contract when the distributed generation is not dispatchable and cannot be relied upon in the same way as agreements with large generators. It also runs counter to a central tenant underpinning the operation of the NEM, that is market participants will effect and execute their own risk management procedures and practices.

The framework proposed also seriously risks crowding out innovations enabled by new smart control and aggregation technologies which have the potential to allow retailers to construct products which directly involve their customers in value creation beyond the home (including both network and wholesale values). For example, AGL has a strategic partnership with Sunverge whose intelligent distributed energy storage system captures solar power and delivers it where and when needed most. It is a dynamic and fully programmable platform able to deliver bespoke outcomes satisfying the needs of end-use customers and utilities alike.

The platform has the capability to aggregate a response from multiple distributed resources and thereby deliver meaningful outcomes in terms of wholesale and network value. This capability is commonly referred to as a 'virtual power plant'. Retailers could conceivably incorporate distributed generation and demand response delivered by a VPP within their wholesale portfolio risk management strategies, with VPP participants sharing in the delivered value.

The Sunverge technology (and others like it) is a relatively new development and providers are naturally undertaking a period of test and learn to better understand how the technology can be used to best effect and how customers will respond to different offerings and means of engagement. Some of the Sunverge platform's capabilities were recently demonstrated in an AGL-led demand response trial hosted by United Energy in Victoria.

² The Commission notes that, in 2015, electricity generation in Victoria from small-scale solar was estimated to be 1,043,000MWh, with a further 188 MWh from small-scale wind power. That is, solar made up 99.98% of small scale distributed generation.

That trial produced encouraging results, not only in the demand response achieved but in the customer feedback on the trial which received a 100% satisfaction rating.³

Importantly, the AGL-led trial involved close participant engagement before, during and after demand 'events' and throughout the trial. This contrasts starkly with the Commission's proposal pursuant to which it would be up to customers to monitor pre-dispatch prices to anticipate when a critical peak event might occur and so when it might be prudent to export, rather than consume, the distributed generation output. In AGL's view this places an unreasonable expectation on customers.

The Victorian Government has made clear its aspirations to become a leader in new energy technology development and in the support of innovative business models which facilitate a more customer-centric and participatory energy market.⁴ AGL considers that regulating a multi-rate FIT with a critical peak component will act as a serious brake on potential developments in this area. It will stifle the ability of retailers and other competitive providers to innovate their offerings to suit the preferences of customers and communities.



2. Do you support the proposal to amend the FIT framework to enable multi-rate tariffs for distributed generation? If so, which of the options do you favour and why? If not, why not?

AGL does not support the proposal to amend the FIT framework to require a multi-rate tariff for distributed generation. Many of the reasons for our opposition to this recommendation are set out at Q1 above. To elaborate on these reasons, we note that:

- One of the review's guiding principles is 'simplicity'.

The proposed multi-rate FIT would be anything but simple for a customer to understand or predict. Our understanding is that part of the multi-rate FIT would be determined ex-ante before the start of the relevant calendar year in which the rate would apply. However the critical peak component would be determined and paid ex-post following the actual occurrence of a 'peak event' in the spot market. The impact of line losses in different geographic locations is also proposed to be built into the multi-rate FIT.

This structure and combination of inputs would not be simple either for a retailer to administer or for a customer to understand. Accordingly, AGL considers that the proposal cannot be recommended when assessed against the 'simplicity' criterion.

Furthermore, customers have not revealed a strong preference for time-varying tariffs. Less than 0.5% of AGL's Victorian residential customers have taken up a flexible pricing offer since they were introduced in 2014.
- Another key guiding principle is 'behavioural response'.

For so long as the cost of grid-supplied energy exceeds even the 'peak' wholesale value of a multi-rate FIT customers will continue to have an overwhelming incentive to self-consume as much of their generation as possible. That is, they are unlikely to change their behaviour following implementation of the proposed multi-rate FIT. Accordingly, AGL considers that the proposal cannot be recommended when assessed against the 'behavioural response' criterion.
- The last guiding principle is 'materiality'.

As illustrated in Table 6.4 neither method (single or multi-rate) seems biased towards delivering more or less value to customers. For the two years modelled, the customer would have received 3% more in year 1 and 6% less in year 2 under the proposed multi-rate FIT, or differences of \$2.60 and \$4.40

³ <https://www.agl.com.au/about-agl/media-centre/article-list/2016/march/agl-trials-impacts-of-emerging-technologies-on-the-grid-and-energy-bills>

⁴ Victorian Government, Victoria's Future Industries, New Energy Technologies: Sector Strategy, http://www.business.vic.gov.au/_data/assets/pdf_file/0004/1275457/New-Energy-Technology-Strategy-web-version-20160308.PDF

over an entire year. This confirms that the methodology currently employed in the determination of a single-rate FIT is working as intended.

As the proposed multi-rate FIT would not have a material impact on the amount paid to distributed generators over the course of year as compared with the single-rate FIT, the 'materiality' criterion does not appear to be made out.



The best way to truly enable multi-rate FITs would be to deregulate the FIT so that retailers can innovate their offerings in response to customer preferences. Although the regulated FIT is a mandatory 'minimum' only, it strongly influences the structure of FITs that retailers can compete on in the market. Certainly the ability to innovate and develop competitive offerings which exceed the mandatory minimum is more difficult when the regulated rate has a more complicated underlying structure.

The Commission includes a proposal that should a retailer be able to offer a 'fully reflective' FIT – that is, one which dynamically reflects the half hourly prices in the wholesale market – and the customer freely and expressly chooses that option, then the retailer's obligation to offer the regulated FIT would be suspended. Whether or not a FIT with these characteristics would appeal to many customers, this proposal does at least seem to provide tacit recognition that not all customers want the same things.

A key benefit of competitive markets is that suppliers compete on the development of tailored products and services that meet the unique needs and preferences of their customers. The ability to compete and innovate offerings which appeal to customer preferences is heavily constrained by the existence and structure of a regulated rate. Under the framework proposed there are effectively only two options – follow the regulated multi-rate structure or implement a 'fully reflective' rate. In reality, customer preferences may sit somewhere else on the spectrum but retailers would face challenges accommodating these under the framework proposed.

Not only does there not appear to be a persuasive case for introducing the proposed multi-rate FIT, we question why it would not be designed to align with the time-periods applying under new, more cost-reflective, demand-based network tariffs. These tariffs are being introduced by distribution businesses across the NEM, including in Victoria. The rules requiring distribution businesses to introduce more cost-reflective tariffs fell out of the Power of Choice Review and are aimed at reducing long-term average network charges by promoting efficient network investment and utilisation.

AGL supports network tariff reform as it will make network use more efficient and cost effective for customers. More specifically, demand-based network tariffs:

- Substantially increases the cost reflectivity of network tariffs;
- Reduces inherent cross-subsidies associated with volumetric network charging;
- Mitigates annual network price instability whilst still providing consumers the ability to alter usage patterns and manage their bill; and
- Provides a clear time signal for new the take-up of new technologies.

Victorian distribution businesses have uniformly selected 3.00-9.00pm as the period during which maximum demand charges will apply. To align a multi-rate FIT with this period would amplify the price signal to customers in terms of conserving energy at this time. We note that demand charging is relatively new and not all retailers yet have a retail offering reflecting this demand period (potentially increasing the time and costs required to implement this option). However, they nevertheless reflect the future direction of network tariff reform.

To implement a multi-rate FIT at variance with this cost-reflective network tariff structure seems likely to materially add to customer confusion and act as a brake on the take-up of more cost-reflective network tariffs. This would be an unfortunate outcome considering that customers actually have greater scope to influence their electricity bill under cost-reflective, demand-based network charging than under a multi-rate FIT which (as explored in Q1 above) will lead to similar bill outcomes as the current single-rate FIT.



3. Are there additional data and analyses that the Commission should consider in assessing the environmental and social benefits of distributed generation, specifically in terms of identifying, quantifying and valuing those benefits of distributed generation?

In considering rewarding the environmental and social benefits of distributed generation, the Commission should recognise that the environmental benefits (specifically the emission reduction benefits) are already specifically accounted for under the RET scheme. The *Renewable Energy (Electricity) Act 2000* stated objectives are to:

- (a) to encourage the additional generation of electricity from renewable sources; and
- (b) to reduce emissions of greenhouse gases in the electricity sector; and
- (c) to ensure that renewable energy sources are ecologically sustainable.

This is done through the issuing of certificates for the generation of electricity using eligible renewable energy sources and requiring 'liable entities' to surrender a specified number of certificates for the electricity that they acquire during a year. Therefore the structures designed to facilitate the value associated with small scale technology certificates (STC's) specifically incorporate the emission reduction value associated with the distributed generation. As such, any new and additional mechanism to recognise the deemed emission reduction value from distributed generation would be appropriate only after the deeming period associated with the system and STCs (typically 15 years after purchase in most cases).

We note that under the Commonwealth Government's Direct Action policy, renewable energy projects that receive renewable energy certificates (large or small scale) are not eligible to also receive funding via the Emission Reduction Fund (ERF), as they do not meet the requirements for 'additionality'. The value for renewable generation realised through the STC market is over three times higher than the current market price for carbon abatement (as determined by the ERF auction prices) indicating that customers are already well-compensated for the environmental benefits provided by their distributed generation until 2030 (when the RET scheme ends).

Further, the decarbonisation of the energy system is likely to be a multi decadal process. Given the national commitment to the 2 degree goal, the Federal government is best placed to provide overarching frameworks to provide for a gradual but persistent decarbonisation of the Australian energy system. An example of this is the implementation of the RET which is designed to be a core policy driver to reduce emissions from the energy sector over the long term.

Implementation (retailers and distributors)

4. What would be the implications for electricity retailers and distributors of moving to the proposed DGT framework? Specifically, what are the cost implications of implementing the proposed DGT framework? And what evidence can be provided with regard to those costs? Are there ways these costs could be reduced?

There would be a series of system changes that retailers would need to make to accommodate the proposed DGT which:

- divides customers into two geographic zones that relate to postcodes and not distribution zone;
- pays a 3-part FIT – with an off-peak, shoulder and peak export rate – the rate is pre-determined but depends on which geographic zone the customer falls into;
- during every spot market event where the price exceeds \$300/MWh, requires customers to be paid 30c for every KWh exported; and
- at the outset of each year pays customers a deemed output tariff according to a predetermined methodology.

Retailer systems are obviously not currently configured to administer a FIT with so many components and variables. Impacted systems and customer interactions would include:

- customer management system;
- billing engine (configuration of the billing structure);

- reconciliation processes with market data and bills – noting that export during ‘critical peak events’ would need to be isolated from, and assessed and paid separately to, the customer’s usual multi-rate FiT payment;
- mail house / customer communications and updates to digital platforms – to ensure customers understand the basis on which the FiT is administered and paid, and can reconcile this with their bill;
- significant testing of systems interfaces;
- training of customer facing staff to be able to explain and respond to queries on the operation of the new tariff.



There would be substantial development work involved which would come at significant cost and require at least 6-12 months to implement, depending on how much functionality is expected from day 1.

The component which adds the greatest amount of complexity is the critical peak component which is paid ex-post on actual spot market events. Each event would require an intervention to the customer’s bill to ensure that export over the relevant period – which could last anything from 30 mins to a couple of hours, and possibly straddle an off-peak/shoulder/peak period – is paid at the higher rate and not the ‘usual’ ex-ante rate. This would require substantial, highly complex development work. Removing this component would have the biggest impact on implementation costs.

Removing the geographic differentiation would make the next biggest impact on costs and time to implement.

The Commission would also need to consider how to deal with (e.g. transition or grandfather) current retailer offers that exceed the existing mandatory minimum FiT, but may not comply with all components of the proposed multi-rate FiT – e.g. the proposed critical peak component. For example, AGL currently offers existing customers who install a solar system a 12c FiT (approximately double the current Victorian minimum) for four years.

Batteries

5. What impact, if any, would increased deployment of electricity storage systems have on the assumptions and analysis underpinning the proposed distributed generation tariff framework outlined in this draft decision?

Battery storage systems will enable customers to consume a greater proportion of their own generation and to time consumption of stored energy with periods when grid-supplied energy is highest – e.g. during demand periods under more-cost reflective network tariffs. Customers are therefore expected to export less (and self-consume more) with increased deployment of battery storage systems. In this way, the value of the distributed generation system becomes less focussed on export pricing. This further weakens the case for making complicated and costly changes to the regulated FiT at this time.

The ability of customers to time use of stored solar energy to meet their own needs will also mean that it will no longer be possible to rely on the deemed output profile of the solar system to determine what emissions are displaced in the NEM. However, based on a typical residential customer demand profile, the solar output is still likely to displace more emissions intensive centralised generation.