

12th February 2016

Essential Services Commission
Level 37, 2 Lonsdale Street
Melbourne, Victoria 3000.

Email: energy.submissions@esc.vic.gov.au

Inquiry into the True Value of Distributed Generation – Our Proposed Approach – December 2015

Dear Sir/Madam,

APA Group is pleased to have an opportunity to provide comments to the Essential Services Commission (ESC) of Victoria with regard to the *"Inquiry into the True Value of Distributed Generation – Our Proposed Approach – December 2015" (the Paper)*.

About APA Group

APA Group (APA) is Australia's largest natural gas infrastructure business, owning and operating approximately \$19 billion of energy assets. Its gas transmission pipelines span every state and territory in mainland Australia, delivering approximately half of the nation's gas usage. APA has direct management and operational control over its assets and investments.

APA also has an ownership interest in, and operates the Allgas natural gas distribution network, and operates the natural gas distribution networks of Australian Gas Networks (formerly Envestra Limited), which together contain approximately 27,000 kilometres of gas mains and 1.3 million consumer connections.

APA also owns other energy infrastructure assets such as gas storage facilities and wind farms. In addition to the Allgas Distribution Network, APA also has equity interests in a number of energy infrastructure assets, including the SEAGas Pipeline, and the Ethane Pipeline Income Fund. APA also owns and operates the Victorian Transmission System, and operates the Australian Gas Networks Victorian gas distribution business. APA is listed on ASX and is included in the S&P ASX 50 Index.

APA thanks the ESC for the opportunity to comment on the Paper. Please contact either Josh Hankey or myself should you wish to discuss our submission further.

Yours sincerely

Peter Gayen
Manager Networks Commercial

Discussion

APA generally supports the proposed approach of the ESC as outlined in the paper. In particular, APA supports the proposed focus of the inquiry on:

- Distributed generation (DG) below 5MW
- All forms of distributed generation, regardless of fuel source, including battery storage
- The total output of distributed, i.e. that which is used to meet a customer's demand as well as that which is exported.

The small DG market has been a challenging area for customers and policy makers for some time, and therefore it is timely that the value of DG be reviewed closely. APA also supports the proposal to look at all forms of DG under 5MW, as this broad scope of study will include renewable and nonrenewable technologies, and emerging technologies such as battery storage. The study will necessarily cover customer groups ranging from residential customers with solar panels and/or batteries, through to project developers who invest in larger installations of up to 5MW capacity, as well as new technology developers.

APA also supports the ESC's thoughts that the three key elements of public benefit, to be identified and ideally quantified, are:

- Economic
- Environmental; and
- Social

Economic

APA believes the key potential **economic** benefits of DG are:

- DG exported to the electricity grid potentially puts downward pressure on energy prices for energy consumers
- DG can help to reduce peak electricity demand and thus potentially reduce further grid investment, again potentially putting downward pressure on electricity prices via reduced network and transmission charges
- DG potentially helps to reduce distribution and transmission losses, helping again to reduce energy prices

APA believes that the following principles should be applied when calculating benefits created by DG, i.e. that they may be

- assessed on a time of generation basis i.e. consistent with a Time of Use (TOU) philosophy
- reflective of the voltage characteristics of the DG's connection point to the NEM
- reflective of locational signals, subject to the development of a simple and practical locational valuation methodology

Materiality, Simplicity and Behavioural Principles

APA's supports the preferred principles that should apply to any remuneration methodology developed for DG i.e. ¹*Materiality, Simplicity and Behavioural*.

Materiality - although it is currently difficult to quantify the benefits of DG, APA makes the fundamental assumption that whatever payments may flow to distributed generators, that those payments will be material to the receiver.

Simplicity - APA is concerned about the current complexity of the calculation of DG. Simplification and standardization of the evaluation of the value of DG, particularly which reflects locational pricing would greatly facilitate its uptake.

Behavioural - This principle is also valid, although APA makes the observation that behavioural preferences and incentives will vary as the customer class or type, also varies. This issue is addressed further in the paper, under the heading

Additional issue - Behavioural principle

¹ "Inquiry into the true value of distributed generation – Our Proposed Approach" – December 2015 - page (6)

Environmental

Emissions reduction is a potential **environmental** benefit provided by a DG. Renewable energy generators in particular, may provide clean energy to the site, to the grid, or both and be rewarded under the RET. Renewable generators, large and small, are rewarded either by the payment of an Large Generation Certificate(LGC) or Small Technology Certificate(STC). Although the payment is made on the basis of each renewable kWh of electricity generated, it is not 'directly' paid for the emissions otherwise avoided. Renewable DG's are already being rewarded for their environmental performance.

APA notes that the paper expresses a very similar view to the above, i.e.

²"Based on this evidence the Commission's initial view is that the environmental benefit of distributed generation from renewable sources may be sufficiently reflected in the payments available under the RET"

The paper then highlights the situation for non-RET generators.

²"But some other forms of distributed generation, such as that powered by natural gas, are not eligible for the RET scheme and are therefore not rewarded for any environmental benefit they provide. As outlined below the benefit for any reduced emissions attributable to a distributed generator can be calculated."

APA agrees that for low emission distributed generators, there is currently, an 'unrewarded' benefit created. The paper goes on to further state:

²"By using the carbon intensity of the distributed generation, comparing this to the carbon intensity of the NEM and applying a carbon price the value of the reduced emissions from the distributed generator can be calculated."

With the reduced emission benefit calculated, as per the above suggested approach, the missing variable in the value equation is the carbon price. Although Australia does not currently have a carbon trading scheme or carbon price, APA recommend that in the same way an LGC or STC (or part thereof), provides a proxy value for carbon, other similar methods could be considered to provide a carbon value for low emission generators, for example:

- Determining the implicit carbon value in an STC or LGC
- Using Australia's Emission Reduction Fund auction values as a guide to value, or
- Using a Green Power value

APA recommends that a formal evaluation of the above values would be a logical and useful way to determine a proxy carbon value, which could then be used for low emission DG's. Once calculated, each distributed generator could be financially rewarded for the value of carbon reduced – possibly from within an expanded RET or the ERF.

Social

APA is currently unable to confidently identify the **Social** benefits that could likely be attributed to DG, although intuitively, Social benefits do exist, e.g. consumer choice. The fundamental issue for APA is that it is unable to reliably measure such benefits.

The Local Generation Network Credit (LGNC)

The Paper refers to the current AEMC Rule Change proposal for the introduction of an LGNC, put forward by City of Sydney, Total Environment Centre and the Property Council of Australia (the proponents). APA supports the LGNC concept and its general methodology, and recommends that the ESC consider the LGNC as an input to this consultation, as described below.

³*How is the LGNC proposed to be structured?*

² "Inquiry into the true value of distributed generation – Our Proposed Approach" – December 2015 - page (48)

³ "Local Generation Network Credit Rule Change Proposal" –14th July, 2015 – page 8

- A credit (negative tariff) based on an estimate of long-run marginal cost avoided stemming from not having to augment the local grid as a result of electricity exported to the grid during periods of network system (or local area) peak demand. It is expected that this credit would be based on:
 - The **long-run** avoided cost capacity and operational costs (analogous to LRMC) in upstream parts of network resulting from the collective operation of small-scale local generators connected to the distribution network, **less**
 - Any reasonable increase in capital and operating costs stemming from having to cater for **bi-directional/localised energy generation** in system peak demand periods, instead of utilising centralised energy generation

- A credit (tariff) based on the operating and maintenance costs that the network business would avoid (incur) as a result of electricity being exported by the embedded generator to the grid at other (non-peak) times. It is expected that this credit would be based on:
 - the avoided operational costs in upstream parts of network (e.g., the high voltage (HV) and sub-transmission (ST) network, assuming the generator is connected to the low voltage (LV) network), **less**
 - any reasonable increase in capital and operating costs stemming from having to cater for **bi-directional/localised energy generation in non-peak periods**, instead of utilising centralised energy generation.

The components of the LGNC described above should also capture avoided transmission use-of-system charges. The credit could potentially also include a capacity payment based on the availability of the local generator at particular times (typically, through the peak period.)

In particular, APA agrees with the proponents of the LGNC rule change, that smaller DG's are typically less able to access existing mechanisms, i.e.

"However, the incentives for local generation in the current Rules either do not provide adequate recognition of the benefits that the local generation can provide, and/or may not be readily accessible to small-scale local generators."

The following, taken from the Paper, supports the comments of the proponents.

⁵There have been a number of changes to the NER to support distributed generation and there are mechanisms for recognising the economic benefit of distributed generation to the distribution networks; specifically: Network Support Payments, Avoided TUOS and the RIT-D mechanisms, however, these are unlikely to be accessible to the smaller distributed generators that are the focus of this inquiry. This is because smaller distributed generators are unlikely to have the knowledge or expertise to get access to these mechanisms, and the costs associated with calculating the necessary payments may outweigh the benefits."

⁶Consistent with the themes of the above quote, the proponents of the LGNC AEMC Rule Change paper observe that issues impeding small scale distributed generation include:

- High transaction / administrative costs; and
- Common inability of smaller generators to accept contracts with 'firm capacity' requirements.

The above comments from both the proponents and the ESC, summarise the current issues facing small scale embedded generation, in regard to current incentives in this area. These comments are consistent with APA's experience and anecdotal feedback from DG proponents.

Many consultations over recent years have dealt with issues to do with embedded or DG, including the: "Victorian Competition and Efficiency Commission into Feed-In tariffs and Barriers to Distributed Generations: Draft Report 15th June

⁴ "Local Generation Network Credit Rule Change Proposal" –14th July, 2015 - page 1

⁵ Essential Services Commission of Victoria - "Inquiry into the True Value of Distributed Generation – Key Issues for the Inquiry" – page (51) - December 2015

⁶ "Local Generation Network Credit Rule Change Proposal" –14th July, 2015 – page15

2012”; the “Issues Paper – Solar Feed-In Pricing in Queensland” – Nov 2015; “Polygeneration in New South Wales – Public Accounts Committee – Legislative Assembly of New South Wales – March 2014” and each dealt with common embedded generation topics such as:

- adequate reward for generation provided;
- information asymmetry;
- countervailing power issues; and
- network connection issues.

Although the LGNC process will not resolve all of these issues, it will take embedded generators towards a fairer and more workable investment environment, whilst also providing energy consumers with better outcomes.

In summary, implementation of the LGNC is required in order to encourage more small scale generation to participate in the energy market.

Additional issue - Behavioural principle

APA acknowledges that

⁷“The inquiry will not consider whether the feed-in tariff (FIT) should be deregulated”.

With the Paper’s description of the various forms of DG it should be noted that a FIT might already apply for customers ranging from residential customers, typically with PV, to some larger commercial customers.

A possible complexity is the potential overlap between customers currently receiving a FIT, who would possibly qualify for an LGNC. Given the varied ranges of customer classes potentially involved with DG, APA **recommends** that the payment method used to pay the DG, is made on the basis of what is practical and sensible for that class of customer, whether that be by a FIT or by another process such as an LGNC.

Summary and close

APA supports the paper’s focus on *all* forms of distributed generation below 5MW, in relation to determining the economic, environmental and social value that distributed generators provide. The value determined should recognise: time of generation, as well as voltage characteristics of the distributed generator. When a simpler locational valuation methodology is developed, locational payments to distributed generators should also be considered.

APA supports the concept of an LGNC payment, and the methodology outlined in the paper.

APA agrees that low emissions generators, which don’t currently receive RET incentives or other emission incentives, should be recognised for the emissions reduction value that they provide. This value could be calculated by using published electricity pool carbon intensity values being compared with the specific intensity value of the DG, to determine the carbon reduced. This quantity, multiplied by a carbon value, could provide a financial reward for the DG.

APA also agrees with the paper’s stated principles of Materiality; Simplicity and Behavioural.

⁷ “Inquiry into the true value of distributed generation – Our Proposed Approach” – December 2015 - page (1)