

Submission to the Inquiry into the true value of distributed generation

Environmental Justice Australia

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Environmental Justice Australia (formerly the Environment Defenders Office, Victoria) is a not-for-profit public interest legal practice. Funded by donations and independent of government and corporate funding, our legal team combines a passion for justice with technical expertise and a practical understanding of the legal system to protect our environment.

We act as advisers and legal representatives to the environment movement, pursuing court cases to protect our shared environment. We work with community-based environment groups, regional and state environmental organisations, and larger environmental NGOs. We also provide strategic and legal support to their campaigns to address climate change, protect nature and defend the rights of communities to a healthy environment.

While we seek to give the community a powerful voice in court, we also recognise that court cases alone will not be enough. That's why we campaign to improve our legal system. We defend existing, hard-won environmental protections from attack. At the same time, we pursue new and innovative solutions to fill the gaps and fix the failures in our legal system to clear a path for a more just and sustainable world.

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Introduction

This submission has two (2) parts. Part 1 answers selected questions posed in the paper by the ESC entitled 'Inquiry into the true value of distributed generation – Proposed Approach Paper' ('**Proposed Approach Paper**'), whilst Part 2 makes some more general submissions about the value of distributed energy and the need for major reform to accommodate distributed energy.

Part 1

Questions 1 to 7: Commissions approach and definition

The first term of reference from the Minister for Finance seeks a broad discussion of the benefits of distributed energy. In contrast, the Commission's approach to ascertaining the value is narrow and primarily focused on attaching a dollar value.

Furthermore, discussion on the value of distributed energy for planning, investment and operation of distributed energy is confined to discussion of the existing planning and investment regime under the National Electricity Rules (NER). Discussion of the potential value for distributed energy in the planning, investment and operation of the electricity network, including if the regulatory regime was changed to better facilitate and take advantage of the benefits of distributed energy does not occur.

We are of the view that the first term of reference allows for a broader, more wide ranging discussion of the value of distributed energy, that includes its potential value and anticipated value in future, and that by taking a narrow approach the full value of distributed energy has not been properly considered. Whilst the second and third terms of reference have a more restricted, monetary value focus, a broader understanding of the benefits of distributed energy would inform terms of reference 2 and 3.

Separately, we note that limiting consideration of the value of distributed energy to generators with capacity of less than 5MW doesn't take full account of the benefits of distributed generation in terms of lowering the greenhouse gas emissions profile of the electricity sector. We do, however, agree that it is sensible to treat generators who do not directly participate in the national electricity market separately from larger generators. Therefore we suggest that it be noted in any final report that the full environmental benefits of distributed energy will not be captured as a result of limiting the Inquiry to distributors with capacity less than 5MW.

Q8. Are there other public benefits that the electricity generated by a distributed generator provides? How can these identified benefits be quantified?

We agree that distributed energy provides the environmental benefits as identified in the Proposed Approach Paper, primarily by lessening the demand for electricity produced more greenhouse gas intensive generators, particularly coal fired generators. In addition, we submit that distributed energy will enable a further reduction in greenhouse gas emissions by reducing the distances electricity must be distributed, and therefore the amount of electricity that needs to be in the grid to service all consumers.

Transmission losses of electricity can be up to 10 percent.¹ Therefore, if networks and regulatory systems were set up to properly utilise and maximise the benefits of distributed energy, not insignificant reductions in transmission losses, and therefore greenhouse gas emissions, could result.

Furthermore, increased use of distributed energy, typically of a more greenhouse gas efficient profile than large stationary generators, could be used to meet increases in demand for electricity in future. Utilisation of distributed energy, combined with a growth in more large scale renewable generators could obviate the need for future construction of further coal or gas fired power plants. This is significant: any further growth in the use of fossil fuels in electricity generation is likely to seriously prejudice the ability of Australia to meet domestic and/or internationally agreed emissions reductions targets. While this benefit is not easily quantifiable it should be considered when making decisions as to the value of distributed energy.

Another value of distributed energy is that it provides electricity consumers with choice. The current electricity market and regulatory framework favours incumbent generators and retailers. Even in the context of Victoria's deregulated market, competition has been shown to be limited, and margins on electricity prices have increased since deregulation, to the benefit of the industry, not consumers.² The availability of distributed energy is one option for consumers to either exit the market or rely on it less, creating additional competition.

Whist at an individual level choice is a private value, on a society wide level, choice empowers consumers and can drive competition. This should be considered to be a relevant, social and public value.

Q9. Are there any environmental or other public benefits that a distributed generator provides to the distribution network? How can these identified benefits be quantified?

We wish to emphasise that to date, a major factor in increases to network costs is networks dealing with the growth in 'peak demand', when electricity demand is at its highest. Periods of peak demand are relatively rare and significant amounts are spent upgrading networks to meet demand in peak times. These costs are passed on to consumers and is one of the main reasons for recent rises in electricity bills in Australia.

If utilised effectively, distributed energy can ameliorate peaks by reducing demand, and provide more localised electricity supply during peak periods, thereby reducing pressure on distribution networks at these times. The potential for distributed energy to reduce pressure on distribution networks at peak times will be significantly expanded with more widespread use of battery storage technology.

In the long run, it is more cost effective, and better value for money to augment and adapt the networks so they can better accommodate and utilise distributed energy, as opposed to further expanding and

¹ AEMO, <http://www.aemo.com.au/Electricity/Market-Operations/Loss-Factors-and-Regional-Boundaries>

² Consumer Utilities Advocacy Centre, 'Creating fairer energy and water markets for all', Energy and water consumers advocacy program: competition and consumers conference, 9 October 2013

augmenting existing networks to cover peak demand. As discussed in Part 2 below, it is likely that this will need to occur in any event, given the increasing popularity of distributed energy amongst Australians, including Victorians. We further note that continued improvements in energy efficiency technology and use of a time-of-use approach to both the feed-in-tariff and electricity pricing would contribute to amelioration of peak demand.

Q10. Are there other aspects of the current regulatory framework outlined in this paper that the Commission should consider when evaluating the adequacy of the current Victorian policy and regulatory frameworks governing the remuneration of distributed generation?

As stated below in our answer to question 16, we do not believe the RET is an appropriate mechanism, particularly in the long-term, for ensuring that distributed energy retailers are adequately compensated for their contribution to avoided greenhouse gas emissions. We also note, as per our answer to question 11, below, it appears that small scale generators do not have the costs savings that distribution companies obtain from distributed energy passed onto them.

Therefore, whilst it is the Commission's view that the Feed-in-tariff should be based on the retail value of the electricity, small scale generators are not being adequately compensated for the benefits they provide. Fairness dictates that this should be addressed, either by increasing the feed-in-tariff, or by other means.

We also consider that the ESC should consider the regulatory framework that allows retailers to discriminate against those who have solar systems installed, by charging higher fixed supply charges.³ Even if compensation for distributed energy generators fully reflects network and environmental benefits of distributed energy, the purposes of providing this compensation stands to be undermined if energy retailers continue to be permitted to discriminate against solar customers by charging higher fixed supply charges. On this point, we note that Initiative 1 of section 5.3, of 'Victoria's Renewable Energy Roadmap', prepared by the Department of Economic Development, Jobs, Transport and Resources proposes that this discrimination be addressed.

Finally, we draw attention to section 8 of the *Essential Services Commission Act 2001*, which, as you would be aware, requires the commission to promote the long-term interests of consumers. It should be beyond argument that reducing greenhouse gas emissions in order to limit the severity of impacts of climate change is in the long-term interests of consumers. On this basis we submit that the carbon reduction values of distributed energy, particularly renewable energy, need to be included in any fair remuneration of distributed energy, and that there are strong policy reasons for incentivising development of renewable, distributed energy.

Q11. What is the impact of the current regulatory framework on the valuation of distributed generation in Victoria? In particular, what has been the scale and scope of support provided to distributed generators by: avoided TUOS payments, avoided DUOS payments, Network Support Payments, the Distribution Network Pricing and Assessment Framework, and the RIT-D??

³ Sections 35 of the Electricity Industry Act 2001

We do not have data on impact of payments above. We note the comment in the Proposed Approach Paper that small scale generators do not receive many of these payments. If this is the case, these small scale generators are effectively subsidising the distribution companies, which is not fair. If this Inquiry finds that these payments are not being passed to small scale distributed energy generators, we believe this needs to be addressed.

Q12. Do you agree with the Commission's proposal to develop a methodology for calculating the time-of-use benefit of the electricity produced by a distributed generator? If not, why not?

Yes. Time-of-use benefits would incentivise distributed generators to generate electricity at times when demand is highest and networks are under the most pressure, maximising the network benefits of distributed generation, and potentially ameliorating spikes in wholesale electricity prices. The potential for distributed energy to provide these benefits will significantly increase as battery storage becomes more widespread.

Furthermore, we submit that time-of-use pricing should be applied to all electricity tariffs across the state, rather than on an opt-in basis. Analysis has shown that such an approach would significantly reduce costs to consumers and would lead to more efficient use of electricity networks.⁴ Furthermore, time-of-use electricity tariffs would encourage distributed generators to generate their own electricity during peak pricing periods, also reducing pressure on networks.

As discussed above, more efficient use of the electricity networks may obviate the need for any new fossil fuelled power plants.

Whilst we are in favour of time-of-use tariffs being applied across the grid, we further submit that any proposal to do this be accompanied by a comprehensive public education campaign to explain to people how the time-of-use pricing will work and what they can do to reduce their bills, as well as appropriate assistance for disadvantaged households.

Q16. Do you agree with the Commission's view that the environmental benefit of distributed generation may be sufficiently reflected in the payments available under the RET? If not, can you provide evidence to detail what environmental benefits of distributed generation are not already captured by the RET scheme and how they can be valued?

No. The compensation that should be provided to generators of distributed generation for their environmental benefits depends on what the objectives of any compensation scheme are. If the objective of any compensation scheme is to facilitate the transition from greenhouse gas emissions intensive electricity generation to renewable electricity generation, in the absence of a carbon price, compensation for environmental benefits needs to be higher than what is provided under the RET. The Proposed Approach Paper does not consider what the objectives of the compensation for the environmental benefit of distributed energy could, or should be.

⁴ Wood, Tony, 'Victoria goes slow on electricity tariff reform', *Australian Financial Review*, 4 February 2016, <http://www.afr.com/opinion/victoria-goes-slow-on-electricity-tariff-reform-20160202-gmkb2j>

The LRET has limitations because it is capped at 33,000 GWh in 2020, which will make renewables 23.5 percent of Australia's electricity supply. This cap has not been calculated on the basis that this is what Australia needs to do to adequately reduce greenhouse gas emissions so that global temperatures do not exceed 1.5 degrees, or that Australia's emissions reductions targets are met. Rather, it was calculated on the basis of a political compromise. The shortfall charge, which operates as an effective price cap for renewable energy certificates and is determined by the regulatory scheme, therefore, does not relate to the environmental value of avoided greenhouse gas emissions.

Further, because the RET policy and legislation is Federal, it is problematic for the ESC to rely on it to provide adequate compensation for Victorian producers of distributed renewable energy. The Victorian Government has no control as to whether the RET effectively compensates generators of distributed energy. We have already seen Federal policy result in a reduction to the RET, which would have had a commensurate impact on the value of renewable energy certificates.

Australia, especially Victoria, needs to start replacing its fleet of fossil fuel intensive generators with renewable energy generators to lower the emissions intensity of the electricity generation sector. The RET has not resulted in this occurring.

We submit that the ESC should calculate compensation based on what Victoria would need to do, in order to comply with international agreements to limit global temperature rise to 1.5 degrees, or with any state-based emissions reduction target, should one be legislated following the review of the *Climate Change Act 2010*. We do not have the expertise to suggest a methodology for doing so, but submit that this would be a sensible basis for determining the environmental value and therefore appropriate compensation for greenhouse gas emissions avoided, as a result of distributed energy distribution.

In sum, we do not believe the RET is an appropriate mechanism to ensure that generators of distributed generation receive sufficient compensation for the environmental benefits of distributed generation. The Commission has conducted almost no analysis to support this assertion, and should do further analysis.

Q17. Are there other methodologies that the Commission could consider for calculating the carbon benefit of distributed generation technologies that are not covered by the RET?

The methodology outlined in the Proposed Approach Paper is suitable. Analysis should also be undertaken as to what would be an appropriate carbon price. The appropriate price is determined by what the emissions reduction target is. If Victoria determines to adopt an emissions reduction target as part of the reform of the *Climate Change Act 2010* currently underway, the target could provide a basis for determining what the carbon price should be. Otherwise, the United Nations Framework Convention for Climate Change could provide a basis for determining what emissions reductions targets should be.

Q18. Do you agree with the Commission's proposal to undertake further analysis into the economic benefit of distributed generation to distribution networks? If not, why not?

Yes. In addition, we submit that any economic benefit should be passed on to the generators of distributed energy.

Part 2

Distributed energy and battery storage will continue to have an increasingly important role in providing electricity to Victorians.

Victoria already has over 245,000 solar PV systems installed across the state, with a total generation capacity over 700 megawatts (MW).⁵ The Climate Commission predicts that by 2050, solar PV will provide 29% of Australia's electricity needs.⁶ Uptake of battery storage is expected to be rapid and Victoria is predicted to have the highest level of uptake of battery storage in Australia, by 2034.⁷ AGL predicts that 3 million Australian customers will be wholly or partially off-grid by 2030.⁸

Increasingly, Victorians see benefit in using distributed energy to reduce their reliance on the grid, or go off grid all together. As technology continues to improve and uptake continues to increase, prices of technologies will continue to come down, continuing to fuel the increase in distributed energy.

The need to move to lower greenhouse gas intense electricity generation will further accelerate the move to renewable and distributed technologies. The bulk of Victoria's greenhouse gas emissions are created by electricity generation.⁹ Further, as the Commission would be aware, Victoria has the most greenhouse gas intensive electricity generation profile of the country, and therefore the greatest need to transition away from fossil fuel powered electricity generation. Renewable and distributed energy can have an important role in this transition.

The transition underway in the electricity sector needs to be addressed by regulators, including the Essential Services Commission. Regulators need to look not only whether distributed energy has benefits, and whether regulation ought to facilitate distributed energy. They also need to accept that distributed energy will be something the electricity grid and market will increasingly need to accommodate, and regulate accordingly. New thinking about our grid and energy markets is required. Failure to do so will risk regulation falling behind market and technological developments, resulting in loss of innovation and

⁵ Clean Energy Council, 'Clean energy Australia Report 2014', <https://www.cleanenergycouncil.org.au/dam/cec/policy-and-advocacy/reports/2015/Clean-Energy-Australia-Report-2014.pdf>

⁶ Flannery, Tim and Sahajwalla, Veena (Climate Commission), 'The Critical Decade', the Climate Commission Secretariat, 2013, <http://www.climatecouncil.org.au/uploads/497bcd1f058be45028e3df9d020ed561.pdf>, visited on 10 February 2016

⁷ Parkinson, Giles, 'Victoria, NSW will lead the way in residential energy storage uptake', *Solar Choice*, 2 July 2015, <http://www.solarchoice.net.au/blog/news/vic-nsw-lead-way-in-residential-energy-storage-uptake-020715>

⁸ Parkinson, Giles, 'AGL Energy pick new CEO with eye to solar and storage' *Renew Economy*, 18 November 2014, <http://reneweconomy.com.au/2014/agl-energy-pick-new-ceo-with-eye-to-solar-and-storage-35344>

⁹ Department of Sustainability and Environment, *Report on Climate Change and Greenhouse Gas Emissions in Victoria*, March 2012

efficiency, and the benefits of technological improvements not being able to be fully enjoyed by Victorian electricity consumers.¹⁰

If this transition isn't managed well, it has the potential to have greater impacts, including, for example, creating unfairness across the grid where those who can afford to access distributed technology will have cheaper electricity at the expense of those who remain entirely reliant on the grid. Therefore, there are social and economic impacts of failing to adapt to this technology and work to facilitate its use in the grid in a way that is equitable.

While these matters are beyond the terms of reference of this Inquiry, they are of central importance to the role of the ESC and other regulators with roles related to the electricity market. We note that there have been some developments to improve the ways in which distributed generation is accommodated, including the demand management incentive scheme, and the proposed Local generation Network credit Rule Change. However, we further note that these changes are piece meal and are not being comprehensively or promptly implemented by the national regulator. A more urgent and comprehensive response is required on the part of all electricity regulators.

Chapters 4 and 5 the Victorian Government's 'Renewable Energy Roadmap' contains some useful and practical suggestions for beginning this process. We support the proposals set out in the Roadmap and look forward to seeing the government, with the help of the ESC, implement them in the in the near future.

¹⁰ PIAC, 'From complex fragments to competitive consumer-focused markets' 7 May 2015, https://www.google.com.au/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwj6_6fyv3KAhVFnpQKHdWMCG4QFggcMAA&url=http%3A%2F%2Fwww.piac.asn.au%2Fpublication%2F2015%2F06%2Fcomplex-fragments-competitive-consumer-focused-markets&usg=AFQjCNGpI3Pp8Lair3IUS4SzRq2kSdAK5w&sig2=HHebLs1M-gKBUVagNWkOBO