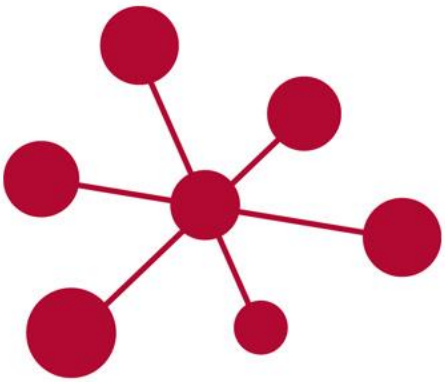

public interest
ADVOCACY CENTRE

PIAC submission to the AEMC Review into coordination of generation and transmission investment Approach Paper

22 September 2017

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Introduction

The Public Interest Advocacy Centre

The Public Interest Advocacy Centre (PIAC) is an independent, non-profit legal centre based in New South Wales. Established in 1982, PIAC tackles systemic issues that have a significant impact upon disadvantaged and marginalised people. We ensure basic rights are enjoyed across the community through litigation, public policy development, communication and training.

Our work addresses issues such as:

- homelessness;
- access for people with disability to basic services like public transport, education and online services;
- Indigenous disadvantage;
- discrimination against people with mental health conditions;
- access to energy and water for low-income and vulnerable consumers;
- the exercise of police power;
- the rights of people in detention, including the right to proper medical care; and
- government accountability, including freedom of information.

PIAC is funded from a variety of sources. Core funding is provided by the NSW Public Purpose Fund and the Commonwealth and State Community Legal Services Program. PIAC also receives funding from the NSW Government for its Energy and Water Consumers Advocacy Program and from private law firm Allens for its Indigenous Justice Program. PIAC also generates income from project and case grants, seminars, donations and recovery of costs in legal actions.

Energy and Water Consumers' Advocacy Program

The Energy + Water Consumers' Advocacy Program (EWCAP) represents the interests of low-income and other residential consumers of electricity, gas and water in New South Wales, developing policy and advocating in energy and water markets. PIAC receives policy input to the program from a community-based reference group whose members include:

- Council of Social Service of NSW (NCOSS);
- Combined Pensioners and Superannuants Association of NSW;
- Ethnic Communities Council NSW;
- Salvation Army;
- Physical Disability Council NSW;
- Anglicare;
- Good Shepherd Microfinance;
- Financial Rights Legal Centre;
- Affiliated Residential Park Residents Association;
- Tenants Union; and
- Mission Australia.

Review into coordination of generation and transmission investment

PIAC welcomes the opportunity to comment on the AEMC's Approach Paper for the Review into coordination of generation and transmission investment (the Review).[1]

Wholesale costs have a considerable impact on retail electricity bills. The comments and recommendations in this submission aim to support more efficient wholesale market and network costs, and therefore more efficient costs for consumers.

Question 1: Transmission charging arrangements – issues

1A) Do you agree with the issues identified with respect to transmission charging, and how this impacts on the coordination of transmission and generation investment?

The AEMC correctly identifies that by not paying Transmission Use of System (TUOS) charges, generators do not pay for the costs to the shared transmission network in the same way as other connecting parties. Insofar as it may lead to inefficient pricing outcomes, PIAC supports the AEMC assessing how this may impact on transmission charging arrangements and, consequently, the price consumers ultimately pay for electricity. PIAC considers the AEMC should consider the extent to which any proposed changes might impede the effective transition to a cleaner, more flexible energy system.

PIAC notes that there may be instances where socialising at least some of these costs would be in the interests of consumers. Imposing a new charge on generation may favour incumbents where their connections costs are already sunk or were socialised through earlier expansions of the transmission network. Furthermore, it may disadvantage new renewable generation connections where locating in remote areas provides benefits to the total system through higher capacity factors or greater diversity of generation source (such as the time of wind generation). Both these measures would impede the effective transition to a cleaner, more flexible energy system.

PIAC contends that generators already face some forms of locational price signals under the current arrangements. While generators do not receive a signal of the costs incurred on the shared network because they do not pay TUOS, they are exposed to the cost of shallow connection assets through the connection fee. The fee for a remote generator may be significantly higher than if the generator connected to an area closer to existing transmission infrastructure with sufficient capacity.

Generators also face a locational signal through the Marginal Loss Factor (MLF) in the wholesale spot market. The MLF reflects the impact on network losses from a change in the level of generation or load at a particular connection point. By scaling the spot price settled at the regional reference node to be paid to a generator, MLFs signal areas where additional generation

[1] AEMC, Coordination of generation and transmission investment, Approach Paper, 22 August 2017, Sydney, <http://www.aemc.gov.au/getattachment/2385256c-2e77-46ae-933d-0cbc68d3787c/Approach-paper.aspx>.

would lead to a more efficient overall system – hence signalling the impact of the generator's location on the efficiency of overall network. For instance, a connection point with a high MLF (especially if it is above 1) would send a strong signal to incentivise new generation. By contrast, a connection point with a very low MLF would send a strong disincentive for additional generation as it would impose significant additional losses in the network.

Recommendation 1

PIAC recommends that the AEMC fully consider whether the price signals generators are exposed to under the current regulatory arrangements, including transmission charging arrangements, place costs inefficiently on consumers, particularly in relation to new generation connection.

Question 2: Transmission charging arrangements - options

2A) Are any of the above options worthy of further consideration, or no further consideration? Why? Why not?

PIAC supports the AEMC considering options to reduce transmission costs for consumers. PIAC recommends that the AEMC use the Review to consider all available options listed in the Approach Paper. As identified in response to Question 1A, PIAC contends that the changing nature and location of generation investment should not result in inefficient transmission costs being placed on consumers.

Recommendation 2

PIAC recommends that the AEMC consider all identified transmission charging arrangements designed to keep transmission costs for consumers to an efficient level.

PIAC is particularly concerned about the arrangements for large scale energy storage facilities connecting to the transmission network, including batteries and pumped storage. Currently, there is confusion over how these facilities should be treated as they exhibit behaviour of both generation and load, which raises questions about the appropriate charging arrangements. PIAC considers this issue distinct from any proposal to introduce TUOS charges to generators more broadly.

PIAC contends that the simplest way for the AEMC to address this issue is to create a separate registration category for storage facilities. The creation of a storage-specific registration category would allow a specific decision to be made about whether or not storage facilities should be charged TUOS, independently of any decision on charging generators. A separate registration category may encourage the more holistic integration of grid-connected storage into the regulatory and operations system of the National Electricity Market. This is particularly important given the transition currently underway and expectations that grid-connected storage may become increasingly common in the future.

PIAC does not consider the principle of technology neutrality to be a hindrance to creating such a category. This registration category should be based on the behaviour of the facility as seen by the network, and not the particular technology type or arrangement. For instance, it may be based on whether the facility will both inject and draw material quantities of energy through its connection to the transmission network.

Pumped hydro or a pure battery facility should be classified as storage under PIAC's proposal as they will both inject and consume electricity through the transmission connection point. However, where storage is co-located with intermittent generation sources such as wind or solar in order to improve its dispatchability, the storage component would be primarily charged from the local generation source (behind the transmission connection point) and only inject power into the transmission network. In this case, the facility should not be classified under PIAC's proposal.

Recommendation 3

PIAC recommends that the AEMC consider how grid-connected storage should be treated and consider creating a separate registration category for grid-connected storage. This category should be based on whether it both injects and draws material quantities of energy through its transmission connection point.

Question 3: Transmission planning arrangements – issues

3A) Do you agree with the issues identified with respect to transmission planning, and how this impacts on the coordination of transmission and generation investment?

Yes. As identified in the AEMC's *Scale Efficient Network Extensions* rule change, uncoordinated transmission investment to connect remote renewable generation is likely to result in inefficient outcomes for consumers.[2] If transmission and generation investment planning is coordinated, parties are better able to manage costs by minimising duplication, reducing the cost to connect for each applicant and potentially enabling or bringing forward new generation projects. Conversely, when individual generators are connected in an uncoordinated manner, parties may lose economies of scale, which results in higher capital expenditure on both connection assets and augmentation to the shared network. These higher costs are paid both by generators, through higher connection charges for the connection assets, and by loads and distribution businesses, through higher TUOS charges for shared network augmentation. In both cases, these costs may ultimately be recovered from consumers; either through higher wholesale electricity prices from the generators or through higher network charges. In either case, inefficiently high prices are clearly not in the long-term interests of consumers.

As mentioned in Question 1A, PIAC notes that generators do currently face some forms of locational price signal. While generators do not receive a signal of the costs incurred on the shared network because they do not pay TUOS, a connection fee for a remote generator will be significantly higher than if the generator connected to an area with existing transmission infrastructure. Generators also face a locational signal through the MLF in the wholesale spot market. The MLF reflects the impact on network losses from a change in the level of generation or load at a particular connection point. By scaling the spot price settled at the regional reference node to be paid to a generator, MLFs signal areas where additional generation would lead to a more efficient overall system.

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2 AEMC, National Electricity Amendment (Scale Efficient Network Extensions) Rule 2011, 30 June 2011, Sydney <http://www.aemc.gov.au/getattachment/6073134e-f3de-4af8-8ac9-855f6866897a/Final-Rule-Determination.aspx>.

Recommendation 4

PIAC recommends that the AEMC particularly focus on avoiding inefficient costs being placed on consumers through transmission planning arrangements.

Question 4: Transmission planning arrangements – options

4A) Are any of the above options worthy of further consideration, or no further consideration? Why? Why not?

Given the potential inefficiencies in planning identified in response to Question 3A, PIAC supports the AEMC's proposal to explore coordinated planning for connecting new generators to transmission networks. In particular, PIAC considers the establishment of renewable hubs such as those explored by TransGrid in its *Renewable Energy Hub Knowledge Sharing Report* and renewable energy zones by Powerlink and the Queensland Government potentially to be efficient ways of ensuring coordination. By planning connection investment for a group of generators, these hubs allow for the efficiencies of scale discussed above. This is beneficial for consumers through more efficient pricing while also incentivising the construction of renewable energy generation in a preferred location.

While PIAC supports the AEMC investigating renewable energy hubs and other scale efficient solutions, it remains possible that potential generators may have difficulty procuring and sharing information needed to coordinate their investment adequately to make these options work in practice. PIAC understands that this has been the case with existing provisions to have come out of the *Scale Efficient Network Extensions* rule change. Thus far, they have not been used despite the clear potential efficiency benefits associated with them. PIAC understands that a major reason for this is the reluctance of generators to coordinate connection proposals because concerns about confidentiality and anti-competitive implications. While PIAC does not consider these issues to preclude renewable energy hub options from consideration in the Review, the AEMC will need to consider how they can be addressed when considering scale efficient solutions.

Furthermore, it has been difficult to determine which party should be exposed to the risk that the connections do not eventuate, which may leave underutilised or stranded assets. As the AEMC identifies, these projects are often designed on a "build it and they will come" model.[3] This raises the question of who should be left bearing the costs if they "do not come". PIAC submits that this is a key question for examination in the Review and the AEMC should consider how to most effectively allocate this risk so that the most efficient outcome is achieved over the longer term.

Recommendation 5

PIAC recommends that the AEMC examine the proposed transmission planning options to reduce transmission costs for consumers, paying particular attention to how connecting groups of generators concurrently could result in scale efficiencies.

[3] AEMC, Coordination of generation and transmission investment, Approach Paper,

4B) Are there any additional options that should be considered through this review?

PIAC notes that, in addition to changes to the regulatory framework for transmission planning, there are opportunities to support industry-lead approaches for TNSPs and generators to achieve the same result. PIAC suggests that leveraging off existing publications and information sources may be a cost-effective way to address the issues raised in this paper.

For instance, documents currently developed under the Rules such as the Transmission Annual Planning Reports by TNSPs and the National Transmission Network Development Plan by AEMO can help to provide information to facilitate more efficient generation connection and integration. Further, PIAC is aware of work to collate information on network availability and connection opportunities such as the Network Opportunity Maps by the Institute for Sustainable Futures[4] and the Australian Renewable Energy Mapping Infrastructure project.[5]

In addition, there may be a role that AEMO can play in its capacity as the National Transmission Planner in coordinating transmission and generation investment.

Recommendation 6

PIAC recommends the AEMC consider leveraging off existing work and obligations under the current regulatory framework to address the issues identified around transmission planning.

Question 5: Transmission access arrangements – issues

5A) Do you agree with the issues identified with respect to transmission access arrangements, and how this impacts on the coordination of transmission and generation investment?

PIAC concurs with the AEMC that the inability of generators to manage dispatch uncertainty is an issue that should be explored in the Review. In addition to the generator contract market risk identified by the AEMC[6], PIAC is concerned that access congestion poses the risk of inefficient spot market outcomes that increases cost to consumers. This risk arises from the possibility of low-cost generators being constrained out of the wholesale spot market. While this would not be of concern if it were a single case, it is possible that consistent congestion in particular locations could lock lower cost generation out of the market for long periods of time and contribute to unnecessarily high wholesale prices.

Recommendation 7

PIAC recommends that the AEMC use the Review to consider the potential of current transmission access arrangements to contribute to higher prices for consumers.

4 Institute for Sustainable Futures, Network Opportunity Maps project, ongoing, <https://www.uts.edu.au/research-and-teaching/our-research/institute-sustainable-futures/our-research/energy-and-climate-2>.

5 ARENA, Australian Renewable Energy Mapping Infrastructure (AREMI) project, ongoing, <https://arena.gov.au/projects/aremi-project/>.

6 AEMC, Coordination of generation and transmission investment, Approach Paper, 26.

Question 6: Transmission access arrangements – options

6A) Are any of the above options worthy of further consideration, or no further consideration? Why? Why not?

PIAC has firm views about which of the proposed options are not worthy of further consideration.

Firstly, PIAC contends that building out all congestion, as is the case in Western Australia, should not be considered as an option in the Review. PIAC agrees with the AEMC that this option is "obviously inefficient since the costs of this would exceed the value placed on it by consumers".[7]

Recommendation 8

PIAC recommends that the AEMC rule out the potential option of building out all congestion in the network due to its obvious inefficiency.

Similarly, PIAC does not support the consideration of a new transmission reliability standard for generators. Generators and TNSPs are already subject to a number of measures designed to ensure reliability of supply through the transmission system. These include the NEM reliability standard and contractual arrangements entered into when generators are connected to the transmission network. Furthermore, a number of current AEMC rule change processes are considering issues relating to reliability in the generation and transmission market segments. These include the *Managing Power System Fault Levels* and *Managing Rate of Change of Power System Frequency* rule changes.

While reliability is clearly an important concern in the NEM, it should always be viewed as a trade-off between reliability levels and the costs imposed on consumers. Given the currently high levels of both reliability and price in the NEM, PIAC does not consider it appropriate for additional, expensive reliability requirements to be placed on TNSPs and generators to be passed on to consumers.

Recommendation 9

PIAC recommends that the AEMC rule out the potential new reliability standard on TNSPs for generation access.

6B) Are there any additional options that should be considered through this review?

PIAC submits that the AEMC should investigate the efficacy of generators funding augmentation of the shared transmission network designed to reduce congestion to the extent that this may lead to lower wholesale prices and network costs for consumers. PIAC is aware of concerns under the current arrangements where the benefits of augmentation paid for by a particular generator cannot be assured to that generator. However, this limitation with the current arrangements should not preclude examining alternative models which may better address this.

By helping enable generators to fund such expansions, it may encourage investment in generation at the most efficient network locations. Furthermore, the negotiation of the network

7 Ibid.

augmentation would provide another means for information exchange and price signalling between generators and TNSPs, an issue the AEMC raised in relation to Question 4.

Further engagement

PIAC would welcome the opportunity to discuss the issues considered herein in more depth. For any queries please contact Energy Team Leader, Craig Memery at cmemery@piac.asn.au or on (02) 8898 6522.