

COGENERATION AND TRIGENERATION IN NEW SOUTH WALES

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Date Received: 9/09/2013

The Chair
Public Accounts Committee
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9 September 2013

Dear Mr. O'Dea,

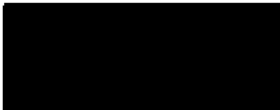
Inquiry into Cogeneration and Trigeneration in NSW

We enclose the Property Council of Australia's submission to the Public Accounts Committee inquiry into cogeneration and trigeneration in NSW.

Please accept our late submission.

If you would like to discuss our submission further, please contact me on [REDACTED], or Rochelle Coggan, NSW Policy Advisor, on [REDACTED]

Yours sincerely,



Glenn Byres
NSW Executive Director
Property Council of Australia



Inquiry into Cogeneration and Trigeneration in NSW

Submission to the NSW Legislative Assembly Public Accounts
Committee

September 2013

Introduction

The Property Council of Australia welcomes the opportunity to make a submission to the NSW Legislative Assembly's Public Accounts Committee inquiry into cogeneration and trigeneration in NSW.

About us

The Property Council is the nation's peak representative of the property industry. Our 2,200 members are Australia's major investors, developers and owners of commercial, residential, retail, industrial, retirement living and hotel assets worth over \$320 billion.

The health and vitality of the property sector is crucial to the State's economy.

Independent research commissioned by the Property Council shows the sector:

- is the largest single contributor to NSW tax revenues of any industry – paying \$7.7 billion in state taxes in 2010-2011, including \$2.3 billion in land tax
- provided \$16.6 billion in wages to NSW families and workers
- generated almost 360,000 jobs across the state
- added \$44.5 billion to economic growth, and
- triggered \$63 billion in flow on economic benefits.¹

The property sector has shown great leadership in creating a more sustainable built environment and has been at the forefront of the deployment of low carbon energy solutions, including cogeneration and trigeneration.

Cogeneration and trigeneration in the property sector

Property owners and developers in NSW are increasingly seeking to incorporate cogeneration and trigeneration systems into their existing buildings and new developments.

This is a result of the growing demand for 'greener' buildings and precincts, driven by:

- *Tenant preferences* – higher grade buildings have lower vacancy rates
- *Financial gain* – lower operating cost, higher rental and capital yields
- *Healthier workplaces* – better air quality and thermal comfort
- *Corporate social responsibility* – obligations to be sustainable businesses
- *Environmental leadership* – CEOs' and directors' direction
- *Government procurement and leasing policies* – green leases
- *Government programs* – Clean Energy Future package and the carbon price, and the Commercial Building Disclosure scheme.

However, despite the demand for and benefits of cogeneration and trigeneration, these technologies remain grossly underutilised.

¹ AEC Group, *Economic Significance of the Property Industry to the NSW Economy*, May 2012, based on data from the 2010-11 financial year.

This is because property owners and developers face a major barrier to the deployment of cogeneration and trigeneration technologies – **an inefficient, costly and time consuming process for connecting embedded generators to the national electricity grid.**

Progress to date

In April 2012, the Property Council, in partnership with ClimateWorks Australia and Seed Advisory (together the 'rule change proponents'), submitted a rule change proposal to the Australian Energy Market Commission (AEMC).²

The rule change proposal seeks changes to the National Electricity Rules (NER) to improve the connection process for embedded generators, which includes cogeneration and trigeneration systems.

Following a widespread consultation process, in which the rule change proposal received strong support from many community groups, NGOs, businesses and governments, the AEMC released its draft determination in June 2013.³

The draft determination accepts many of the solutions put forward by the rule change proponents and will result in simpler, quicker and cheaper connections to the national electricity grid for embedded generators.

However, improvements to the draft determination are needed to ensure that the rule change will give rise to an efficient connection process and will encourage greater uptake of cogeneration and trigeneration technologies in NSW.

We strongly encourage the NSW Government to show its support to the AEMC for the draft determination on the proposed rule change, and to call on the AEMC to adopt the rule change proponents' improvements to the draft determination.

In the case that these outstanding issues are not resolved through the national rule change process, the NSW Government should use its available funds and regulatory powers to support:

- *Greater rights for embedded generator customers to export electricity*
- *The development of a national technical standard(s)*
- *Spreading of network augmentation costs more fairly among customers.*

² ClimateWorks Australia, Seed Advisory and Property Council of Australia, *Submission to the Australian Energy Market Commission – Proposal to amend the National Electricity Rules for connecting embedded generators*, April 2013.

³ Australian Energy Market Commission, *Draft Rule Determination – National Electricity Amendment (Connecting Embedded Generators) Rule 2013*, 27 June 2013 – available [here](#).

Recommendations

1. **The NSW Government should show its support to the AEMC for the draft rule change determination and call on the AEMC to adopt the rule change proponents' improvements to the draft determination.**
2. **If the rule change proponents' improvements are not incorporated into the AEMC final rule change determination, the NSW Government should use its regulatory powers to provide for:**
 - a. **Greater electricity export rights for embedded generators**
 - b. **The spreading of shared network augmentation costs more fairly among customers to overcome 'last in, worst dressed' and free rider problems.**
3. **The NSW Government should show leadership through COAG and support the development of an Australian Standard for connecting embedded generators to the grid through:**
 - a. **Engaging with Standards Australia**
 - b. **Providing funding for the development of an Australian Standard**
 - c. **Engaging with industry stakeholders and governments in the development of an Australian Standard.**

Barriers to cogeneration and trigeneration

Prior to submitting a rule change proposal to the AEMC, the Property Council, ClimateWorks Australia and Seed Advisory, undertook the '*Unlocking Barriers to Cogeneration (UBC) Project*⁴.

The UBC Project sought to identify barriers facing the deployment of cogeneration and trigeneration across all Australian jurisdictions, and develop solutions to overcome these barriers.

The two main barriers identified by the UBC Project were:

1. *An inefficient process for connecting cogeneration and trigeneration systems to the national electricity grid*
2. *Developing projects across multiple sites.*

These barriers are largely driven by regulatory frameworks at National and State levels that do not reflect the realities of, and are not suited to, small to medium-sized urban cogeneration and trigeneration projects.

Barrier 1 – *An inefficient connection process*

The current process for connecting embedded generators (including cogeneration and trigeneration systems) to the national electricity grid is uncertain, complex, burdensome, time consuming, inefficient and costly.

This flawed connection process is not specific to one jurisdiction or distribution network, and is the direct result of the following barriers:

- *Inconsistent national and jurisdictional regulations* – which create uncertainty in relation to the appropriate rules and guidelines to be applied to connection applications.
- *Inefficient, case by case connection process* – the connection process outlined in the NER lacks certainty around the requirements for a successful application, application timeframes or the cost of connection. Applications to Distribution Network Service Providers (DNSPs) are assessed on a case-by-case basis, with inconsistent outcomes.
- *No clear and binding timelines* – the absence of binding timelines for deciding connection applications means that project timelines/milestones for construction and commissioning of the plant are often misaligned with connection of the plant to the grid.

⁴ ClimateWorks Australia and Seed Advisory, *Unlocking Barriers to Cogeneration: Project Outcomes Report*, September 2011 - available [here](#).

- *No standard information requirements* – the information a proponent must submit to a DNSP varies between DNSPs and projects. Information requirements can also change during the course of a project and can be inconsistent with current commercial design, development and procurement practices.
- *Diverse technical requirements* – compliance with DNSP’s technical requirements can result in significant costs and undermine the cogeneration or trigeneration project, particularly if not clearly and comprehensively identified at the beginning of the connection process.
- *Significant connection and network augmentation costs* – these costs are uncertain, significant, and can be prohibitively expensive. DNSPs apply the ‘last in, worst dressed’ principle to shared network augmentation costs, even though augmentation may provide free benefits to other network users.
- *Different connection terms amongst DNSPs* – the absence of standard terms and conditions makes it difficult for project proponents to anticipate connection costs and requirements. Connection agreements are frequently onerous, one sided and not negotiable, yet are a necessary precondition to connection.

The time, cost and complexity that results from these problems in the connection process are deterring cogeneration and trigeneration project proponents from connecting their systems to the grid.

When faced with the daunting reality of connection times of up to three years, enormous costs and endless negotiation with distribution companies, many proponents simply give up.

As a result, private sector experimentation and innovation in delivering lower emissions energy solutions is discouraged, which is a wasted opportunity for enhancing cleaner energy.⁵

Barrier 2 – Developing projects across multiple sites

In addition to an inefficient connection process, the UBC Project also found significant barriers to the deployment of cogeneration and trigeneration systems across multiple sites and at a precinct/district level.

Larger cogeneration and trigeneration facilities servicing multiple sites are the most efficient and economically viable way to deploy these technologies. However, network connection and regulatory requirements can make these projects uneconomic.

⁵ Ibid, pg 12.

Through case studies of specific cogeneration projects, the UBC Project found significant network connection and regulatory barriers for the following development types:

1. Installing a larger cogeneration system or upgrading an existing system to service more than one building where those buildings are next to each other.
2. Developing medium-large cogeneration systems to service multiple sites across the district.

As just one example of the barriers faced by these development types, a project owner who wishes to service multiple, contiguous buildings using a cogeneration or trigeneration system that is located in one of those buildings would need to either:

- Obtain an exemption to the requirement to hold a retail licence and then participate in the wholesale electricity market as an exempt participant for the transmission and distribution of electricity between the buildings; or
- Enter into an agreement with a retailer, who would manage the wholesale market, the transmission and distribution business requirements and hold the retail licence.

Neither of these options are ideal, as they significantly increase costs and reduce project feasibility.

Becoming a retailer, even when exempt from the requirements of the retail licence, involves significant administrative and working capital cost.

While contracting with a retailer can result in unfavourable prices for the power the owner would need to import, reducing the business case for the project.

These unfavourable options reflect a regulatory framework that is designed for traditional forms of energy distribution and retailing, and does not provide the necessary flexibility to accommodate new and cleaner technologies.

For additional case studies and barriers faced by larger projects, refer to the *Unlocking Barriers to Cogeneration: Project Outcomes Report*.⁶

⁶ A copy of the report is available [here](#).

Proposal to amend the National Electricity Rules

As noted above, in April 2012, the Property Council, ClimateWorks Australia and Seed Advisory submitted a rule change proposal to the Australian Energy Market Commission (AEMC).

The rule change proposal presents solutions to the main barrier to deployment of cogeneration and trigeneration – the inefficient process for connecting embedded generators to the national electricity grid.

In order to improve the flawed connection process for embedded generators, the rule change proposes the following changes to the NER:

1. Provide an **automatic right of connection** to the grid and standard access terms. This would apply to generators that meet 'Automatic Access Standards'.
2. Enable embedded generators a **right to export electricity** to the grid.
3. Provide an **improved connection process** for **embedded generators that are ineligible for automatic access** (including prescribed timeframes, standard information requirements, standard connection charges and common contract terms) and a right to export electricity to the grid.
4. Allow **DNSPs to charge an optional fee-for-service**. This is to promote collaboration with proponents during the connection process.
5. Oblige **DNSPs to publish annual network reports** identifying where capacity is limited.

In addition, the rule change proponents also sought a complimentary rule change on connection charges for embedded generators that seeks to overcome the 'last in worst dressed' approach to shared augmentation costs.

The complimentary rule change recommends that all Australian jurisdictions be aligned with the Victorian position under Guideline 15 - which provides that embedded generators should only be charged grid connection costs and not shared augmentation costs - for the following reasons:

- *The current approach to the attribution of costs of connection in the NER are inefficient* – based on a fallacy that only cogeneration/trigeneration projects contribute to network congestion.
- *The application of shared network augmentation costs on a 'last in, worst dressed' basis is inequitable* – penalising the connection that requires marginal augmentation without considering the impact of previous connections, or requiring future connections to offset the costs borne by the original proponent.

- *The current approach does not materially contribute to the efficiency of the electricity system* – providing no meaningful location signal for most cogeneration and trigeneration projects
- *The extent to which charges should be incurred by cogeneration projects is debateable* – there is a question about the extent to which cogeneration and trigeneration projects raise fault levels and the appropriateness of the requirement for a safety margin.⁷

These rule changes seek to replace case-by-case connection negotiations with a standardised process that is clearer, more certain, cheaper and efficient for project owners.

A better connection process will improve project economics and provide the basis for greater uptake of cogeneration and trigeneration technologies, delivering benefits such as:

- greater adaptation and innovation in the electricity market
- enhanced economic and energy efficiency and productivity
- improved efficiency with which government policies relating to energy production and consumption are implemented
- the potential to support adaptation to a low carbon economy
- reduced demand on the electricity network, especially peak demand,
- the potential to lower escalating electricity prices for businesses and households.

For further information on the Property Council, ClimateWorks, Seed Advisory proposal to amend the NER for connecting embedded generators, see Attachment A.

⁷ Above note 2, page 22.

AEMC draft rule determination

In response to the Property Council, ClimateWorks Australia and Seed Advisory rule change proposal, the AEMC released its draft rule determination on 27 June 2013.⁸

The AEMC's draft determination accepts many of the solutions put forward by the rule change proponents and will overcome many of the problems in the current connection process outlined earlier in this submission.

The key features of the AEMC's proposed new connection process include:

- Better certainty on timeframes and maximum limits at each stage, which should deliver connections within 4 – 6 months.
- Enquiry forms to be created and published by electricity distributors.
- Information packs to be provided by electricity distributors, including: distributor's technical standards, costs, application details, timing and a model connection agreement.
- Location specific network information for customers by distributors.
- Expert appraisal process for technical disputes with an independent engineer.
- Allowance for the development of a national technical standard(s), which will provide a foundation for a future automatic right of connection.

When implemented, these changes will improve connections for embedded generators through better information, greater certainty, and a faster, less expensive process.

Following publication of the AEMC's final determination in October 2013, the rule changes are currently intended to take effect from 1 July 2014.

However, the rule change proponents have identified further improvements and clarifications that are required to ensure that the new connection process operates efficiently and effectively, such as:

- Better alignment of maximum timeframes to commercial development timeframes.
- Improvement of the definition of 'agreed project'.
- Development of an automatic access standard(s) by government and industry once distributors' technical registers are online.
- Sharing network augmentation costs fairly amongst customers.
- Greater customer export rights.

⁸ Above note 3.

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The specifics of these improvements are outlined in the joint Property Council, ClimateWorks Australia and Seed Advisory submission to the AEMC on the draft determination at Attachment B.

What can the NSW Government do?

In the first instance, we recommend that the NSW Government show its support to the AEMC for the draft determination on the proposed rule change.

We also recommend that the NSW Government support the rule change proponents' further improvements to the draft determination, as outlined above and in more detail at Attachment B.

However, in the case that the outstanding issues identified by the rule change proponents are not resolved through the national rule change process, we encourage the NSW Government to use its available funds and regulatory powers to support:

- *Greater rights for embedded generator customers to export electricity*
- *The development of a national technical standard(s)*
- *Spreading network augmentation costs more fairly among customers.*

1. Greater rights to export electricity

The AEMC did not accept the rule change proponents' proposal of a right for embedded generators to export excess electricity to the distribution network.

In the AEMC's view, network augmentation may be necessary to support the safe and reliable export of electricity from an embedded generator to the grid.

In the absence of a commercial agreement on the cost of augmentation, when required, the AEMC would not support a right to export.⁹

What this means, is that the decision as to whether an embedded generator can export electricity to the grid is left to individual DNSPs.

The rule change proponents have requested the AEMC ensure there is greater oversight of DNSPs when making this decision, through:

- allowing independent technical appraisal of the DNSP's export offer to connection applicants;
- providing more detailed guidance to DNSPs about the nature of their obligation to use reasonable endeavours to provide an applicant with the access sought; and

⁹ Ibid, page 65.

- providing more detailed guidance on the DNSP's obligations governing their assessment of connection applications, such as those in relation to queuing.

If these measures are not incorporated into the AEMC's final determination, the NSW Government should use its regulatory powers to provide for greater export rights for embedded generators in NSW.

2. The development of a national technical standard

The AEMC did not consider it appropriate to incorporate a nationally consistent set of technical requirements applicable to all embedded generators into the rule change.¹⁰

However, it did recognise the benefits of and widespread support for the development of a technical standard(s), particularly for mid-scale (30kW to 5MW) embedded generators.

In the absence of an existing national standard, the AEMC has provided for changes to the NER that leave room for the incorporation of a national technical standard through a future rule change.¹¹

Meanwhile, the Federal Department of Resources, Energy and Tourism has commissioned AECOM to undertake a feasibility study into the development of a grid connection technical standard for mid-scale embedded generators.

The AECOM study found that there is 'significant interest and appetite from all stakeholders'¹² for the development of a technical standard or suite of standards, which could make the energy market more efficient by:

- improving connection process clarity and certainty
- providing outcome predictability
- reducing the cost of embedded generator connection
- ensuring nationally consistent and common industry practices in distribution network planning, design and operation.¹³

¹⁰ Ibid, page 57.

¹¹ Ibid, page 63.

¹² AECOM, *Mid-Scale Embedded Generation Connection Standards – Feasibility Study Final Report*, 12 June 2013.

¹³ Ibid.

The study concluded that the development of a technical standard is feasible and recommended that a technical standard (or standards) be developed by Standards Australia, through a collaborative process including governments, industry and other stakeholders.¹⁴

We recommend that the NSW Government show leadership through COAG and support the development of a technical standard for connecting embedded generators to the grid through:

- engaging with Standards Australia;
- providing funding for the development of an Australian Standard; and
- engaging with industry stakeholders and government in the development of an Australian Standard.

3. Spreading shared augmentation cost more fairly among customers

The AEMC did not accept the rule change proponents' complimentary rule change proposal that recommended embedded generators should only be charged connection costs and not shared network augmentation costs.

In making this decision, the AEMC highlighted the existing obligation in the NER for a connection applicant to be reimbursed for the use of assets that are funded by that connection applicant and provide services to other connections.¹⁵

The AEMC's draft determination proposed that connection applicants negotiate the insertion of a clause into their connection agreements with the DNSP to give effect to this obligation.

The rule change proponents do not consider this measure will overcome issues with the 'last in worst dressed' and free rider problems experienced by cogeneration and trigeneration project owners.

This is because the ability of a connection applicant to enforce a reimbursement clause, given the applicant has no direct ability to observe the use of its asset, is very limited.

In addition, the rule change proponents have not been able to identify anyone who has received a reimbursement on this basis, notwithstanding the existing obligation in the NER to do so.

¹⁴ Ibid, 23.

¹⁵ Above note 3, page 182.

The rule change proponents have recommended that the AEMC:

1. Reconsider its views on the 'last in, worst dressed' problem in the draft determination; and
2. Failing this, make rule changes that ensure DNSPs are aware of their reimbursement obligations and that these obligations are enforced.

If the AEMC does not reconsider its position on shared network augmentation costs for embedded generators, a significant barrier to the uptake of cogeneration and trigeneration in NSW will remain.

Shared augmentation costs can be prohibitively expensive even for the largest businesses, which makes it virtually impossible for small to medium companies to invest in these technologies.

Even when large businesses do spend an enormous amount of time and money on deep augmentation to enable connection to the grid, the fact that they are subsidising the ability for other businesses to get their projects off the ground is a further disincentive for investment.

In this case, we recommend that the NSW Government use its regulatory powers to spread network augmentation costs more fairly among customers, so that all users who contribute to reaching network capacity pay for the network's augmentation.

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Submission to the Australian Energy Market Commission



Proposal to amend the National
Electricity Rules for connecting
embedded generators



seed



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NATIONAL ELECTRICITY LAW

REQUEST TO MAKE A RULE FOR EMBEDDED GENERATION CONNECTION

1. DETAILS OF THE ORGANISATIONS MAKING THE REQUEST

ClimateWorks Australia

Seed Advisory

Property Council of Australia

ClimateWorks Australia is an independent non-profit organisation. It was founded in 2009 through a partnership between The Myer Foundation and Monash University with a mission to substantially reduce Australia's greenhouse gas emissions over the next five years. It embarks on practical projects to reduce emissions focused on implementation where barriers to action remain.

Seed Advisory is a commercial advisory firm specialising in the energy sector, with expertise in strategy, risk management, policy development and commercial management. Seed Advisory advises government and corporate clients on issues relating to the development, operation and performance of wholesale energy markets, retail energy markets, and regulated energy markets.

The Property Council of Australia is the largest advocacy organisation for the property industry. It has 2200 member companies that represent assets of over \$600 billion. Property Council members are responsible for Australia's greenest buildings and developments. The members aspire to further transform buildings, precincts and cities to higher levels of environmental performance.

The property industry is Australia's largest industry. It is:

- 11.5 per cent of the economy;
- the country's largest employer, employing just under 1.3 million workers; and
- in 2010, \$147 billion was added to GDP from property services and construction.¹

Furthermore, nearly 780,000 Australians invest directly in property. Over 11.6 million Australians have an indirect investment in property via their superannuation funds.²

Acknowledgements

The partner organisations appreciate the pro bono work of Maddocks Lawyers, especially Dariel De Sousa for her contribution to this submission.

The valuable support of the following companies for this rule change is also acknowledged: ISPT, Crown Melbourne, Moreland Energy Foundation, Cogent Energy and Leighton Properties.

Additionally, the partner organisations are grateful to the parties (state and federal government representatives, energy and property companies) which were involved in the 2011 Unlocking Barriers to Cogeneration (UBC) Project.

Particular recognition is given to the UBC case studies: Colonial First State Global Asset Management, Crown Melbourne, Leighton Properties and the APN Property Group, Monash University, Moreland Energy Foundation and Places Victoria (formerly VicUrban). They provided information on their commercial projects and attended the workshops with the other participants.

¹ AEC Group, *The economic significance of the property industry to Australia*, 2012.

² Property Investment Research, *Funds data*, 2011.

2. EXECUTIVE SUMMARY

Embedded energy benefits and demand

Embedded generators are electricity generating plants that are connected to the electricity distribution networks. The networks are owned and operated by distribution network service providers (DNSPs). Cogeneration (combined heating and power) and trigeneration (combined cooling, heating and power) are two types of embedded generation. They offer consumers, governments and the national electricity system significant benefits such as:

- greater energy efficiency compared to conventional energy sources;
- an opportunity for consumers and governments to reduce environmental emissions;
- higher private sector innovation in energy production, delivery and consumption;
- the potential to reduce network infrastructure investment as co/trigeneration increase; and
- the prospect for enhanced security of energy supply.

Increasingly, Australian property developers and owners seek embedded energy systems, such as co/trigeneration, for existing buildings and new developments. This is a result of a growing demand for 'greener' buildings and precincts. Several factors are driving this demand, including:

- Tenant preferences — higher grade buildings have lower vacancy rates.
- Financial gains — lower operating costs, higher rental and capital yields.
- Healthier workplaces — better air quality and thermal comfort.
- Corporate social responsibility — obligations to be sustainable businesses.
- Environmental leadership — CEOs' and directors' direction.
- Government procurement and leasing policies — green leases.
- Government programs — Clean Energy Future package and the carbon price; Commercial Building Disclosure scheme.

Connection barriers for embedded energy systems

Despite these benefits and demand for embedded energy systems, the National Electricity Rules (NER) effectively deter embedded generators from connecting to the electricity grid. Consequently, the connection process is:

1. Uncertain
2. Complex
3. Burdensome
4. Time consuming
5. Inefficient
6. Costly.

The six aspects of the connection process were demonstrated through market-ready case studies, which were analysed during the Unlocking Barriers to Cogeneration (UBC) Project.³ The objectives of the UBC Project were to identify barriers facing the deployment of cogeneration, and to determine how these barriers could be solved.

³ The UBC Project involved representatives from the cogeneration demand and supply chain, including cogeneration proponents and DNSPs. The report is available at http://www.climateworksaustralia.org/ClimateWorks_Unlocking_Barriers_to_Cogeneration_Report.pdf

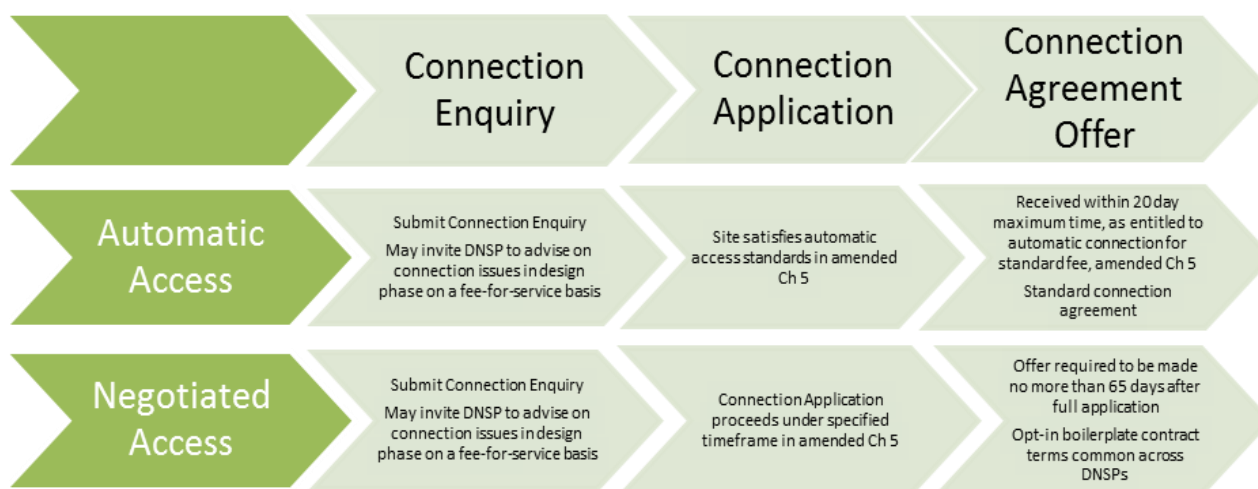
This rule change proposal addresses the main barrier identified by the UBC Project – namely, the connection process, and it proposes solutions.⁴ Although the case studies in the UBC Project were co/trigeneration projects, the same connection barriers exist for other embedded generators. This is why this proposal seeks to overcome connection barriers for embedded generators more broadly, not just for co/trigeneration.

Solutions for connecting embedded generators to the electricity grid

In order to improve the connection of embedded generators to the national electricity grid, changes to the NER are required to:

1. Provide an **automatic right of connection** to the grid and standard access terms. This would apply to generators that meet ‘Automatic Access Standards.’
2. Enable embedded generators a **right to export electricity** to the grid.
3. Provide an **improved connection process** for **embedded generators that are ineligible for automatic access** and a right to export electricity to the grid.
4. Allow **DNSPs to charge an optional fee-for-service**. This is to promote collaboration with proponents during the connection process.
5. Oblige **DNSPs to publish annual network reports** identifying where capacity is limited.

The chart below summarises the proposed new connection process with rule changes.



These changes can be easily incorporated into Chapter 5 of the NER, which already sets out elements of a streamlined connection process for large generators. The changes are also similar to aspects of Chapter 5A of the NER, which provides a streamlined connection process for micro-embedded generators.

Significantly, the proposed changes aim to replace case-by-case negotiations with a standardised process that is clearer, more certain and efficient. Ultimately, this proposal is designed to encourage embedded generation without compromising the integrity of the national electricity grid.

⁴ The rule change also builds on the findings of many studies over the past decade. They too have reviewed the disincentives to embedded generation and proposed changes to the connection process and other elements of the NER.

Benefits of these rule changes

The National Electricity Objective aims to promote efficient investment in, as well as the efficient operation and use of, electricity services for the long term interests of electricity consumers. This proposal is consistent with this objective. It will deliver direct and wider economic and societal benefits, including:

- reduced connection costs for current and prospective proponents and DNSPs;
- lower payback periods on low carbon and renewable energy investments;
- a boost to adaptation and innovation in the electricity market;
- enhanced economic and energy efficiency and productivity;
- the potential to support adaptation to a low carbon economy;
- reduced demand on the electricity network, especially peak demand; and
- the potential to lower escalating electricity prices for businesses and households.

3. THE CURRENT RULES

The NER contain two chapters that deal with the connection of generators to the national electricity grid – namely, Chapter 5 (entitled 'Network Connection') and Chapter 5A (entitled 'Electricity Connection for Retail Customers'). Chapter 5A will come into force on 1 July 2012. As will be explained below, connection of embedded generators to the grid is not clearly accommodated within either Chapter 5 or Chapter 5A of the NER.

3.1 Chapter 5

Chapter 5 has clearly been drafted with large generators in mind. In particular, the generators that are covered by Chapter 5 are subject to onerous requirements regarding the technical requirements with which they must comply in order to connect to the grid (Schedule 5.2). They may also be required to provide detailed information regarding the profile and operation of the generator in support of an application to connect to the grid (Schedule 5.4). Application of these requirements to smaller generators, including cogeneration plants, is burdensome, time-consuming and costly. In many cases the project may not be viable or, at least, would be seriously compromised.

To alleviate this burden, a standing exemption from registration exists for generators with a nameplate rating of less than 5 MW. In addition, an exemption may be available upon application for generators with a nameplate rating of between 5MW and 30MW⁵. The practical effect of exemption is that smaller generators who are eligible for exemption need not comply with the requirements imposed on other larger generators under Chapter 5 of the NER, including Schedules 5.2 and 5.4.

However, notably, clause S5.2.1(b) of Schedule 5.2 effectively vests discretion in DNSPs to impose the technical requirements contained in Schedule 5.2 on otherwise exempt smaller generators. This allows DNSPs to determine if a connection is likely to cause a material degradation in the quality of supply to other users connected to the grid. The viability of smaller generators could be undermined if this discretion is exercised to impose unduly onerous technical requirements. Alternatively, in the absence of an applicable access standard, DNSPs may apply jurisdictional requirements with the effect of imposing additional technical requirements on smaller generators.

3.2 Chapter 5A

Whereas Chapter 5 establishes a connection framework that is suited to large generators, Chapter 5A has been drafted with small generators in mind. In particular, the connection framework established under Chapter 5A has been designed predominantly to accommodate micro-embedded generators – that is, those generators that have a generating capacity of no more than 10kW.

Under Chapter 5A, DNSPs are required to have a model standing connection offer for 'basic connection services', which are services that are directly connected to the distribution network. Basic connection services are not available for 'non-registered embedded generators' – that is, those that are not micro embedded generators or those that have availed themselves of the exemption from registration. In other words, most cogeneration plants with a nameplate rating of up to 30MW that have obtained exemption from registration would not qualify for a basic connection service.

⁵ However, jurisdictional requirements, such as the requirement that all embedded generators of 10MWs or more in Victoria comply with AEMO's requirements, can operate to modify the effects of this exemption.

Chapter 5A also contains a mechanism for the establishment of a model standing offer for 'standard connection services', which could include the connection of cogeneration plants to the grid. However, DNSPs have discretion, rather than an obligation, to establish a model standing offer for these services.

Further, DNSPs have discretion in establishing classes or categories of customers eligible for a particular standing offer. This gives rise to the potential for multiple connection processes to co-exist, depending on the categories adopted by DNSPs. There would also be the risk that the categories differ as between DNSPs within the same jurisdiction. Therefore, there is a possibility that the existing connection process for cogeneration plants, which is described in the next section of this proposal, will not be materially improved by the introduction of Chapter 5A. If every DNSP in the National Electricity Market (NEM) was to use the embedded generation categories proposed by the Energy Networks Association for cogeneration – mini, small, medium and large – and proposed a different process for each category, there would be 44 separate processes in the NEM for cogeneration connection.

4. THE PROBLEM

The preceding section illustrated that the existing regulatory framework for connecting embedded generators to the national electricity grid contains a clear gap for generators with a nameplate rating of between 10kW and 30MW. This includes the vast majority of cogeneration plants. The introduction of Chapter 5A is not anticipated to address this problem.

This regulatory gap has resulted in case-by-case connection processes, which are characterised by uncertainties in relation to:

- regulatory requirements imposed at the national and jurisdictional levels;
- connection enquiry and application timelines;
- information that is required to achieve connection;
- technical requirements imposed on generators as a condition of connection;
- costs of connection; and
- terms of connection.

These uncertainties increase the complexities and burden on proponents' time, resources and connection costs, and may impose significant costs to DNSPs⁶. These characteristics of the existing connection process for cogeneration were clearly demonstrated through the case studies that were analysed as part of the UBC Project and are discussed below.

4.1 *Inconsistent national and jurisdictional regulation*

The process of transitioning the obligations of jurisdictional regulators to the national regulatory authorities has introduced a level of uncertainty in relation to the appropriate rules and guidelines to be applied to connection applications. For example, in Victoria a number of jurisdictional instruments, including the Distribution Licenses, the Distribution Code and Guidelines (issued by

⁶ In particular, DNSPs appear to experience enquiry costs from project proponents who are often described as “tyre kicking”. Presumably, that is project proponents regarded by DNSPs as unlikely to lodge a connection application. Elements of this proposal would reduce the burden of these enquiries. This can be achieved by requiring technical standards to be met, or by enabling DNSPs to provide a fee-for-service consultancy on the embedded generator characteristics for the relevant site.

the Essential Services Commission) relating to connection applications and the connection of embedded generators, impose a higher level of performance on DNSPs. This includes establishing a timeline for processing connection applications, providing for an effective right to export and clarifying the costs that an embedded generator is entitled to be charged.

However, as all connection disputes are now referred to the Australian Energy Regulator under the national regime, differences of opinion have arisen about the continued application of jurisdictional instruments. This has introduced another level of uncertainty into the current application process. An embedded generation project proponent may prefer the jurisdictional requirements, but the absence of a jurisdictional dispute resolution process encourages connection applications to proceed under the NER, which is seen by some as offering less direction.

4.2 Inefficient, case by case connection processes

The steps associated with the connection to the national electricity grid under Chapter 5 and Chapter 5A are relatively clear. The process, however, as described in those chapters is insufficiently prescriptive to provide certainty to connection applicants about the requirements for a successful application, the timeframe in which an application will be considered or the costs of connection. These uncertainties impose particular costs on small-to-medium sized generators, including cogeneration plants. In the case of potential embedded generation projects, the uncertainties relating to the connection process can result in significant delays. These delays may result in significant costs relative to the cost of the project as a whole. As a result, a project proponent may be actively discouraged from pursuing a connection application.

Embedded generation project proponents' experiences indicate that each application for connection of a cogeneration plant is considered by DNSPs on a case-by-case basis. Hence, the approach taken by the DNSP in relation to one application for connection may differ markedly from the approach taken by the same DNSP in relation to another application. DNSPs (and embedded generators) are obliged to consider the safe operation of the network. The obligation encompasses both the safe interaction of the proposed equipment to be connected to the network with other elements of the network. This includes other customers' installations, as well as the particular characteristics of the relevant section of the network where an embedded generator is proposed.

The case-by-case considerations currently required would be significantly reduced by the rule change proposal in this submission (see Section 5 below, specifically re developing a schedule to Chapter 5 that specifically relates to the required characteristics of equipment to be installed for Automatic Access). This would benefit DNSPs and project proponents.

Once a connection enquiry has been made, the lack of a binding regulatory framework can mean that DNSPs may not promptly respond to a request for connection. Further, the process included in Chapter 5 is based on a "propose/respond" model. This is out of step with current project planning and development processes, which are characterised by team-based, multi-disciplinary, problem solving approaches. The current process in Chapter 5 does not recognise a role for the DNSP in this process and provides no basis for their involvement outside the "propose/respond" model. An adequate incentive, such as a "fee for service" for advisory services provided by the DNSP on request by the project proponent, would encourage a DNSP to participate in the development of connection applications. This has the potential to significantly reduce costs of design changes during the application process for embedded generation proponents.

4.3 No clear and binding timelines

There are no binding timelines to ensure that embedded generation connection applications are progressed, and either approved or refused, within a specified period of time. This has led to situations where the timeframes and milestones for the construction and commissioning of the plants, and connection of that plant to the national electricity grid, have been misaligned. Consequently, in some cases, connection to the grid occurs many months after the plant is ready to be commissioned and the building is occupied.

In the experience of the UBC Project case studies, the misalignment of timeframes results in significant additional costs in:

- design;
- redesign;
- procurement;
- changes to the procurement package; and
- project delays.

Overall, these costs affect the value of the opportunity to the project proponent and consumers.

4.4 No standard information requirements

There are currently no standard requirements regarding the information that must be submitted by an embedded generation proponent to the DNSP. Depending on the DNSP, there may be no published information about the required information at all. Rather, the requirements vary from DNSP to DNSP and project to project. Further, the information requirements may change during the course of a project. For instance, when DNSPs seek additional information at any time, the proponent may be under the impression that the information requirements had already been fulfilled.

Finally, the nature of the information requirements, where specified, may be inconsistent with current commercial design, development and procurement practices. For example, the requirements for detailed and specific information on the make and model of the plant to be installed at a point in the design process before procurement packages have been finalised⁷.

4.5 Diverse technical requirements

As previously noted in this proposal, DNSPs have some discretion regarding the technical requirements that they might impose on embedded generation proponents. At times, DNSPs may impose significant technical requirements on the basis that these are required to protect the DNSPs network infrastructure and the integrity of the grid more generally. However, compliance with these requirements can result in significant costs and even undermine the viability of a cogeneration project, particularly if the technical requirements are not clearly and comprehensively identified at the beginning of the connection process.

Finally, DNSPs' views about the appropriate technical solutions are binding. This is despite instances where newer, or more appropriate, technical solutions are available to the project proponent. Also, some technical requirements imposed by DNSPs disallow exports of electricity to the grid. This is even for balancing purposes, resulting in a smaller than optimal unit being chosen by the project proponent to restrict the need to balance the system's output externally.

⁷ In addition, changes may be made to the proposed equipment by the DNSP after the procurement package has been completed for the developer, imposing additional costs and delays on the project commissioning.

4.6 Significant connection and network augmentation costs

The costs associated with securing connection of an embedded generation plant to the national electricity grid are typically uncertain. Moreover, in the experience of the project proponents in the UBC Project, costs are significant and, at times, prohibitively expensive. Generally, the DNSP will charge the proponent for the cost of connection application. In addition, depending on the jurisdiction, shared network augmentation costs due to connecting a plant to the grid are sought, not just the costs relating to the project proponent's own requirements.

There is often a lack of clarity and transparency regarding responsibility for, need for and the costs of augmentation of the network. Augmentation of the network may provide benefits to other network users, all of whom should share in the cost of augmentation.

However, based on the case studies of the UBC Project, the principle that appears to be applied by DNSPs in allocating shared network augmentation costs is 'last in, worst dressed'. In other words, the proponent whose connection application coincides with a ceiling being reached on local network capacity (such as available fault level headroom) may be asked to meet the full costs of the augmentation, which, as a result of the lumpy nature of network augmentations, are likely to exceed the proponent's own costs⁸. No recognition is given in these cases to the contribution of earlier connections to exhausting the available network capacity or the benefit to future applicants of the investment undertaken by the project proponent.

This problem is compounded by the lack of transparency concerning the existing capacity of the local network for new cogeneration connection before a connection application is made. In this regard, proponents are not equipped to determine whether there is sufficient network capacity available.

4.7 Different connection terms amongst DNSPs

The terms and conditions applicable to connection of a cogeneration plant to the grid may vary significantly from DNSP to DNSP. The absence of standard terms and conditions means that it is difficult for cogeneration proponents to anticipate the requirements and, therefore, the costs associated with connection. Further, the terms of connection agreements are frequently onerous, one sided and not negotiable – a connection agreement is a necessary precondition to connection.

⁸ The allocation of system augmentation costs also appears to be inequitable. It distinguishes certain network customers' contribution to network capacity from that of other customers' similar contributions, based on the customer category rather than the contribution towards system capacity.

5. PROPOSED SOLUTION

In order to facilitate the connection of embedded generators to the national electricity grid, and to address the connection barriers, changes to the NER are required to:

- Provide an automatic right to connection to the grid.
- Entitle export of electricity to the grid.
- Provide an improved connection process for embedded generators that are ineligible for automatic access and a right to export electricity to the grid.
- Allow DNSPs to charge an optional fee-for-service. This is to encourage them to work collaboratively with proponents during the connection process.
- Require DNSPs to publish an annual report identifying where network capacity may be limited.

These changes can be easily incorporated into Chapter 5 of the NER, which already set out elements of a streamlined connection process for large generators. The changes are also similar to aspects of Chapter 5A of the NER, which provide a streamlined connection process for micro-embedded generators.

These changes to the NER will replace case-by-case connection negotiations with a standardised process that is clearer, more certain and efficient. We deal with each of these proposed changes in turn.

5.1 Develop automatic access standard for embedded generators

An automatic right to connection for standard embedded generators should be available to plants that meet an automatic access standard. This automatic access standard would be established to ensure that only plants that will not compromise the integrity of the grid are granted automatic access.

The notion of an automatic access standard is already provided in Chapter 5 of the NER, which requires the Reliability Panel to determine appropriate generator performance standards. Standards may be proposed for a particular class of plant by third parties and may become the applicable standards for that class of plant provided that they are approved by the Reliability Panel. This provides an avenue for the development of automatic access standards for particular types of cogeneration plants. A DNSP is precluded from refusing connection to the grid if the automatic access standard has been met.

The automatic access standard for cogeneration plants should be complemented by a standard connection agreement similar to the model standing offer provided for under Chapter 5A. In particular, Chapter 5A requires DNSPs to have in place a model standing offer for micro-embedded generators, which must include terms and conditions dealing with timeframes for connection, safety and technical requirements and the cost of connection. Similarly, Schedule 5.6 of Chapter 5 contains standard terms and conditions that must be contained in connection agreements covered by that Chapter.

Automatic access should be provided under the NER as a matter of priority for cogeneration systems up to 5MW because, relative to their size and capacity, the current costs of connection are disproportionately high and the connection process unduly burdensome. As automatic access standards are developed for larger cogeneration plants with a nameplate capacity of

between 5MW and 30MW and approved, automatic access would be extended to these larger projects consistent with these standards.

PROPOSED CHANGES TO NER	EXISTING PROVISIONS
Provide for automatic connection of equipment meeting the standard set in the NER for embedded generators of the relevant class in Chapter 5.	<p>- Chapter 5 specifies automatic access standards and minimum access standards for different categories of generator (by type and size).</p> <p>- Chapter 5A proposes that basic connection services are available for retail customers who are micro-embedded generators. A model standing offer for a basic connection service must specify, among other things: safety and technical requirements; commits the DNSP to a timeline for the commencement and completion of the work; details the basis for the connection charge, including requiring a standard connection charge for dedicated (that is, customer specific) assets, excluding special circumstances; and details any special technical or other requirements related to the connection.</p> <p>- Chapter 5 also contains standard terms and conditions that must be contained in connection agreements, including details of the relevant technical standards applicable, connection service charges, and duration and termination</p>

5.2 A streamlined connection process

Some embedded generators may not be eligible for automatic access because of the particularities of the plant, which may warrant a tailored approach. The process for the connection of cogeneration plants that are ineligible for automatic access could be significantly improved by streamlining the negotiation process through:

- prescribed timeframes;
- standard information requirements;
- standard connection charges; and
- common contract terms.

As mentioned earlier in this rule change proposal, Chapter 5 of the NER was developed with large generators in mind. While there are elements of the connection process prescribed in Chapter 5 that would be useful to facilitate connection of cogeneration plants, Chapter 5 currently appears to envisage a commercial negotiation between two equally powerful parties to achieve connection to the grid, which is the sole objective of the project. This approach is clearly not appropriate for the connection of relatively small cogeneration plants seeking to meet multiple objectives – of which, connection to the grid is only one – and would need to be modified accordingly.

In this regard, there are elements of Chapter 5A of the NER that are useful. Chapter 5A provides for a streamlined process for negotiation for smaller generators. In particular, Chapter 5A sets

out a negotiation framework, including principles that apply to the negotiation process, timelines, information that must be made available by the DNSP and the proponent, and guidelines for connection charges. This streamlined process could be reproduced for connection of cogeneration plants under the proposed process for automatic access. Recognising that automatic access represents a significantly lower burden on DNSPs in evaluating a proposed connection than negotiated access, the timeframe for connection applications to be accepted under the automatic access provisions should be 20 business days.

With respect to connection charges, Chapter 5A provides for the charging of standardised unit charges for augmentation in relation to basic connection services. We have proposed that, with respect to embedded generators, unit charges that can be recovered should be restricted to connection and extension costs and should not include shared network augmentation costs, consistent with the existing position in Victoria. Alternatively, recognising the AER’s argument that Chapter 5A is inconsistent with the extension of an exemption for embedded generators from shared network augmentation costs, a proposal to change Chapter 5A will follow this rule change proposal.

PROPOSED CHANGES TO NER	EXISTING PROVISIONS
<p>Provide for negotiated access for embedded generators in Chapter 5 for connection applications where:</p> <ul style="list-style-type: none"> - the equipment does not meet the automatic standard or has not been considered under the automatic standard; or - the application is inconsistent with the automatic access standard in other ways (such as where the Project proponent rejects the DNSP’s terms and conditions). 	<ul style="list-style-type: none"> - Chapter 5 provides for negotiated access standards to apply to a specific connection, which must be at least as good as the minimum access standard, but, by definition, fall short of the automatic access standard. - Chapter 5A envisages two possibilities: standard connection services for DNSP-defined classes of connections other than those captured by the basic connection service; and negotiated connections, for everyone else.

PROPOSED CHANGES TO NER

EXISTING PROVISIONS

Timelines to be included in Chapter 5 to impose outer limit on timing of decisions to accept or reject a connection application.

- Chapter 5 provides for explicit timelines relating to the connection inquiry process, but includes no explicit timelines in relation to the connection application process.
- In Victoria, the Distribution Licences impose a 13-week (65 working days) timeline in relation to connection offers, provided that the connection applicant has provided the DNSP with all the necessary information.
- Chapter 5A proposes a 10 day turnaround for applications for basic connection services and a 65 day turnaround for negotiated connections.

Connection charge principles to be included in Chapter 5 to address network augmentation.

- Chapter 5A proposes that users of basic connection services pay a unit cost for connection, but that shared network augmentation costs are not included in this charge. The AER's recently released Draft Guidelines argue that Chapter 5A precludes embedded generators from being treated in a similar way. That is, embedded generators are required by Chapter 5A to pay shared network augmentation costs, even though this represents a significant departure from current jurisdictional approaches. If this view is correct, then changes may be required to Chapter 5A.

5.3 *Optional fee for service payable to DNSPs*

Under the current connection process for embedded generators, DNSPs do not have a strong incentive to collaborate in the development and improvement of a connection enquiry or application. In order to provide the DNSPs with a greater incentive to collaborate constructively, the NER should allow DNSPs to charge an optional a fee-for-services provided in the development of a connection application. This fee would be additional to any connection application fee. However, the connection application fee currently levied should be reduced to account for the improved alignment between the project and the DNSP's connection requirements when connection is ultimately achieved.

Chapter 5A offers some guidance in this regard. Chapter 5A empowers DNSPs to charge a connection applicant (in relation to a negotiated connection contract) a reasonable fee to cover expenses, directly and reasonably incurred by the DNSP, in assessing the application and making a connection offer. However, a fee-for-service would need to be subject to agreement with the connection applicant, who would also need to agree to the type, and duration of the services provided.

PROPOSED CHANGES TO NER	EXISTING PROVISIONS
Allow DNSPs to recover fee for service during connection process under Chapter 5	- Chapter 5A empowers DNSPs to charge a connection applicant in relation to a negotiated connection contract a reasonable fee to cover expenses directly and reasonably incurred by the DNSP in assess the applicant's application and making a connection offer.

5.4 *DNSPs required to publish an annual network capacity report*

DNSPs should publish an annual report identifying areas where capacity constraints exist in the network, which may prevent connections within a defined period, such as 12 months.

PROPOSED CHANGES TO NER	EXISTING PROVISIONS
Require DNSPs to publish annual report identifying capacity constraints in network under Chapter 5.	The AEMC is considering, under National Electricity Amendment (Distribution Network Planning and Expansion Framework) Rule 2011, a requirement that DNSPs be required to publish an Annual Planning Review (APR). In particular, as proposed in the new Rule 5.6.2AA (g), the APR should have regard to projected embedded generating units and their outputs and a wide range of system limitations. This requirement, if adopted, would be sufficient to meet the objectives of this rule change proposal.

The proposed amendments are set out in the Appendix to this rule change proposal.

6. CONTRIBUTION TO THE NATIONAL ENERGY MARKET (NEM) OBJECTIVES: IMPROVING ACCESS FOR EMBEDDED GENERATORS

The proposed rule change contributes to the NEM objective in the following main ways.

6.1 *Efficient investment*

This rule change proposal is intended to significantly improve the connection process for embedded generators by making it clearer, more consistent across jurisdictions, more certain and more efficient. These improvements will translate into significant savings in terms of time, money and resources for proponents and for DNSPs. The UBC Project identified a number of areas where, as a result of these changes, project proponents and the wider community would benefit.

- **Increasing the clarity, consistency and certainty of the connection process** would reduce the costs currently borne by the project proponent for the design and preparation of the documentation for proposed connection and the management of the connection

application process. In particular, the introduction of an Automatic Access Standard for cogeneration connections is likely to change the nature of the current connection design process from a bespoke process to a more streamlined process. This will reduce design costs, and increase the number of potential projects.

- **Reducing the holding times for new commercial buildings**, where the length of the holding time relates to delays in receiving connection approval for a proposed cogeneration facility, results in lower costs for the developer and lower required rents from the ultimate tenants.
- **Reducing the requirement for re-work and re-design** in the connection application process results in lower costs for the developer and lower required rents from the ultimate tenants.

The DNSPs in the UBC Project explained the process for reviewing connection applications. This related to the need to ensure that the equipment proposed for grid connection is safe, and that the interaction between that equipment, other elements of the grid and other users, is consistent with their obligation to operate the network safely. In establishing an Automatic Access Standard, the first part of that process – considering whether the equipment proposed is safe – will no longer be required to be undertaken by an individual DNSP, with savings to all DNSPs.

Reduced transaction costs will result in increases in static efficiency for current and prospective project proponents and the DNSPs in whose networks the projects will be located. Economy wide, there will be further dynamic efficiency benefits in moving from a bespoke to a more streamlined design process using equipment subject to a common standard across the NEM. In the relatively small market for embedded generation in the NEM, the proposed Automatic Access Standard should significantly reduce an individual proponent's costs, improving the payback to cogeneration installations and encouraging further developments in this market.

6.2 Lower costs and better investment returns

The UBC Project identified areas where project proponents' costs could be significantly reduced as a result of the proposed rule changes including:

- A reduction in the costs associated with designing and preparing an installation and managing the connection application process.
- A reduction in holding times for new commercial buildings, where the length of the holding time relates to delays in receiving connection approval for a proposed cogeneration facility. Commercial property developers involved in the UBC Project estimate that the weekly holding costs for a CBD site are about \$50,000 - \$70, 000. A Property Council of Australia survey of its Victorian members in 2010 indicated that there were 23 co/trigeneration proposals being considered for implementation in the CBD, Docklands and city fringe areas. Nineteen of the projects identified were expected to proceed in the relatively short term. A saving of one week for each of these projects is a reduction of over \$1 million in holding costs alone.
- A reduction in the costs associated with re-work and re-design. One of the UBC Project members quoted a cost of \$200,000 in engineering design work to rework the design package in response to changes required by the DNSP.

The benefits of reduced costs flow to consumers directly through reduced costs of construction and lower rents. There are also indirect cost reductions through the potential for a larger and more efficient cogeneration sector to contribute to the electricity system.

6.3 Technology neutrality, adaptation and innovation

The Australian Energy Regulator argues that the National Electricity Market is technology neutral and, in consequence, adaptive to changing market conditions. We agree that these conditions are important to ongoing innovation in consumers' long term interests in the supply of electricity and the performance of the national electricity system. Further, private innovation, including cogeneration and other distributed generation proposals, is an important source of innovation. Policies that reduce unnecessary barriers to private innovation improve the environment for innovation. They also have the potential to provide a source of further dynamic efficiency for the NEM and the broader economy in the long term interest of electricity consumers.

The experience of cogeneration project proponents and many studies commissioned by regulatory bodies suggest that, in practice, changes are needed to the interface between innovative project proponents and the electricity market. This is to effectively enable a technology neutral, adaptive electricity market. The UBC Project participants' experiences demonstrate that even large, well-resourced commercial operations struggle with the current ill-specified requirements of the NER and the jurisdictional requirements.

The rule changes proposed are designed to provide a more streamlined process for proven technologies, and a better defined and more rapid access route for other applications. Consequently, a barrier to private innovation in the supply of electricity may be overcome.

6.4 Emissions reductions and other government policies

Cogeneration is a form of emissions reduction as a result of the substitution of lower emission fuels (gas) for higher emission fuels (principally coal) and the re-use of waste heat. As a response to government policy to encourage the reduction of emissions, the demand for cogeneration is expected to increase. A range of government policies towards the built environment – including the encouragement of higher Green Star ratings for properties leased by government departments and the requirement that NABERS ratings are published for commercial buildings – have the effect of increasing the penetration of cogeneration. In reducing unnecessary barriers to cogeneration connections, the rule change proposal will increase the efficiency with which other government policies relating to energy production and consumption are implemented, improving economy wide efficiency in the long term interest of consumers of electricity.

6.5 Demand side management, security of supply and lower energy infrastructure costs

The rule change proposal will encourage the uptake of embedded generators such as cogeneration. In turn, the use of distributed generation may provide a source of diversification for local supply in the event of a supply side disruption, enhancing the local security of supply. Cogeneration also represents a form of demand side management, with the potential, at high levels of penetration, to reduce the need for costly investment in transmission and distribution infrastructure and to reduce transmission losses. To the extent that the rule change proposal facilitates an increase in cogeneration, and other embedded generators, these benefits may in future be substantial.

7. EXPLANATION OF EXPECTED BENEFITS, COSTS AND IMPACT ON THOSE AFFECTED

The implementation of a standardised process for connecting embedded generators to the national electricity grid may impose an additional burden on DNSPs in the short term. This burden is outweighed by the benefits that will accrue to DNSPs, proponents, consumers of energy and society more generally in the longer term.

The costs

- The DNSPs would be required, where no standardised process currently exists, to develop and publish a process and to ensure that the responsible area of their organisation is sufficiently resourced. This is to ensure that the DNSP is able to meet the required processing deadlines or, in good faith, to seek agreement from the project proponent, to agree to an alternative processing deadline.
- Not all of the initial expense, however, should be regarded as a net cost to the DNSP. Existing processes entail a range of internal costs to the DNSP, some of which are likely to be higher than would be the case in a better defined process because of the extent of interactions required under current processes with project proponents. Further, if, as expected, cogeneration connection applications increase, an efficient DNSP is likely to consider developing its own defined process to manage applications. DNSP participants in the UBC Project indicated that there was some internal movement in their organisations to implement processes to manage current application numbers.

The benefits

- **Reduced transaction costs:** By making the connection process more efficient – improving static efficiency – the transaction costs associated with this process are likely to be significantly less for cogeneration proponents and others. DNSPs' costs associated with the evaluation of particular types of equipment will be reduced as a result of the introduction of a relevant automatic access standard. To the extent that the proposed changes apply more generally to the connection process, they may also facilitate connection between larger generators and DNSPs.
- **Improved project economics:** Clarity around the timeframe, scope of the costs and performance of the cogeneration unit will improve project economics and allow alternative models for the finance and operation of cogeneration to emerge. These innovations may provide the basis for a significant increase in the penetration of cogeneration, increasing dynamic efficiency.
- **Reduced energy consumption and energy costs:** Overall, cogeneration provides an extremely efficient form of energy supply, particularly if all useable waste heat from the electricity generation process is recovered and utilised. Moreover, cogeneration enables energy to be consumed where it is produced, translating into a reduction in energy consumption and, therefore, energy costs. The benefits accrue to the direct customers of the cogeneration project and to electricity consumers more generally.
- **Carbon emissions:** Cogeneration plants typically use natural gas as a fuel source, which produces fewer carbon emissions when combusted than coal – the fuel source that is used for many of Australia's grid-connected power stations. Additionally, the reduction in energy consumption which is made possible through efficient cogeneration means that, overall, emissions will be reduced.
- **Security of supply:** On-site cogeneration can protect site owners and users in cases of grid outages. These may occur, for example, in severe weather events such as extreme heat and extreme cold when demand may exceed supply or in bushfire events or during storm surges when network connections within the grid are temporarily lost.

8. COMPLEMENTARY RULE CHANGE ON CONNECTION CHARGES

This proposal also recommends changes to the Rules seeking clarity on shared costs. In line with the Victorian position under Guideline 15 and, depending on the project size, other jurisdictions should only charge connection costs and not shared network augmentation costs. We understand from the AER's recent draft Guidelines that a rule change is required for this approach to be given effect.

- **This proposal addresses an inefficiency in the current approach to the attribution of costs to connections in the NER.** As has been submitted to the Australian Energy Regulator in its recent consideration of connection costs, the standard attribution of shared network augmentation costs to cogeneration projects is based on a fallacy that only cogeneration projects contribute to network congestion – for example, to higher fault levels – and not other connections. This is incorrect. Even standard connections can contribute to fault level in the network, depending on their size and the sophistication of the electrical equipment at the connection.
- **Further, the current application of shared network augmentation costs – on a “last in, worst dressed” basis – is inequitable,** considering all cogeneration connections to a given network as a class, as it penalises that connection application that requires a marginal augmentation without considering the contribution of previous connections or successfully requiring contributions from future connections to offset the costs initially borne by the project proponent.
- **The current approach to cogeneration connection charging does not materially contribute to the efficiency of the electricity system,** as, for the larger number of cogeneration connections a shared augmentation cost provide no meaningful locational signal. It may be the case that this approach to connections to the transmission network provides a signal for potential generators about preferred locations, but connections to the distribution network tend to be driven by other considerations. Cogeneration developments in the dense meshed networks of the CBDs will be preferred to developments elsewhere, as the demand from tenants for lower emission buildings (and the related ability to pay the required rents) is effectively restricted to CBDs and the city fringe at present. Even if locational differences in the shared network augmentation charge were important in prioritising competing developments in a property owner's portfolio, the facts that the charge is only known at the end of a protracted connection application process and then, in the experience of the UBC Project participants, may be subject to significant change mean that no effective prioritisation can occur.
- **The extent to which charges should be incurred by cogeneration projects is debateable.** A recent paper prepared for the Energy Networks' Association by CSIRO raises the question about the extent to which cogeneration projects raise fault levels and the appropriateness of the requirement for a safety margin. In particular, the CSIRO paper raises the issue about what circumstances, if any, the safety margin might be reduced on a transitory basis. Or, whether the safety margin is appropriately maintained at its maximum level on all and every occasion.

9. APPENDIX

TEXT OF PROPOSED AMENDMENTS

(new text shown in underline, removed text shown in strike-through)

9.1 Insert new clause 5.1.2(ba) in Chapter 5

This new clause entrenches a right on the part of embedded generators (including cogeneration proponents) to require a DNSP to comply with Chapter 5.

(ba) Any person who is an *Embedded Generator* has the right to require a *Network Service Provider* to comply with this Chapter.

9.2 Amend definition of 'Embedded Generator' in Chapter 10

This amendment clarifies that an Embedded Generator is not necessarily a Registered Participant.

Embedded Generator

A Generator who owns, operates or controls an *embedded generating unit* and is not necessarily a *Registered Participant*.

9.3 Amend definition of 'Generator' in Chapter 10

This amendment clarifies that a Generator includes an Embedded Generator.

Generator

A person who engages in the activity of owning, controlling or operating a *generating system* that is *connected* to, or who otherwise *supplies* electricity to, a *transmission* or *distribution system* and who is registered by AEMO as a *Generator* under Chapter 2 or is an *Embedded Generator* and, for the purposes of Chapter 5, the term includes a person who is required to, or intends to register in that capacity.

9.4 Amend clause 5.1.3(a) in Chapter 5

This amendment confirms that embedded generators should have the opportunity to connect to the network along with other Registered Participants and to export to the grid.

- (a) all *Registered Participants* and *Embedded Generators* should have the opportunity to form a *connection* to a *network* and have access to the *network services* provided by the *networks* forming part of the *national grid*, including for the purpose of supplying electricity to the *national grid*;

9.5 Amend clause 5.1.3(b) in Chapter 5

This amendment makes it clear that the minimum terms and conditions that must be included in a connection agreement are those contained in schedule 6.

- (b) the terms and conditions on which *connection* to a *network* and provision of *network service* is to be granted are to be set out in commercial agreements on reasonable terms entered into between a *Network Service Provider*, and other *Registered Participants* and *Embedded Generators* and must, at a minimum, include the terms set out in schedule 5.6;

9.6 Amend schedule 5.6 in Chapter 5

This amendment makes reference to a new schedule 5.3b where the minimum access standards for Embedded Generators are to be set out.

The *connection agreements* must contain the specific conditions that have been agreed to for *connection* and access to the *transmission* or *distribution network*, including but not limited to:

- (a) details of the *connection point* including the *distribution network* coupling points where appropriate;
- (b) *metering* arrangements and adjustments for losses where the point of *metering* is significantly different to the *connection point*;
- (c) authorised demand which may be taken or supplied at the *connection point* (under specified conditions);
- (c1) details of each *access standard* agreed between the *Network Service Provider* and the *Registered Participant* and all related conditions of agreement resulting from the application of any access provisions contained in schedule 5.1 for *Network Service Providers*, or schedule 5.2 for *Generators*, or schedule 5.3 for *Customers*, or schedule 5.3a for *Market Network Service Providers* or schedule 5.3b for *Embedded Generators*;
- (d) *connection service* charges;
- (e) payment conditions;
- (f) duration and termination conditions of the *connection agreement*;
- (g) terms, conditions and *constraints* that have been agreed to for *connection* to the *network* to protect the legitimate interest of the *Network Service Providers* including rights to *disconnect* the *Registered Participant* for breach of commercial undertakings;
- (h) details of any agreed standards of *reliability* of *transmission service* or *distribution service* at the *connection points* or within the *network*;
- (i) testing intervals for *protection systems* associated with the *connection point*;
- (j) agreed protocols for maintenance co-ordination;
- (k) where an expected *load*, to be connected to a *network*, has a *peak load* requirement in excess 10 MW, the provision, installation, operation and maintenance of automatic *load* shedding facilities for 60 percent of the *load* at any time; and
- (l) terms and conditions of access to the *metering installation* for the *Metering Provider* and access to *metering installations* type 5 and 6 for the *Metering Data Provider*.

9.7 Amend clause 5.1.3(c) in Chapter 5

This amendment makes reference to a new schedule 5.3b where the minimum access standards for Embedded Generators are to be set out.

- (c) the technical terms and conditions of *connection agreements* regarding standards of performance must be established at levels at or above the *minimum access standards* set out in schedules 5.1, 5.2, 5.3, ~~and 5.3a and 5.3b~~, with the objective of ensuring that the *power system* operates securely and reliably and in accordance with the *system standards* set out in schedule 5.1a;

9.8 Insert new schedule 5.3b in Chapter 5

TO BE INSERTED ONCE STANDARD DEVELOPED

9.9 Insert new clauses 5.1.3 (ca) and 5.1.3(cb) in Chapter 5

This new clause sets out additional principles applicable to the connection process.

- (ca) Each party must act in good faith in relation to *connection to a network*;
(cb) Each party must provide the other with information the other reasonably requires in order to facilitate *connection to the network*;

9.10 Amend clause 5.1.3(d) in Chapter 5

This amendment confirms that embedded generators may request connection below the automatic access standard provided that this does not affect power system security and the quality of supply to other Network Users.

- (d) a *Registered Participant*, ~~or~~ person intending to become a *Registered Participant*, or *Embedded Generator* may request *connection* of a facility, modification of a *connection*, or alteration of *connected plant* at a standard below an *automatic access standard* if the *connection*, modification to the *connection*, or alteration of *connected plant* does not adversely affect:
- (1) *power system security*; and
 - (2) the quality of *supply* to other *Network Users*;

9.11 Amend clause 5.3.1(b) in Chapter 5

This amendment confirms that connection of Embedded Generators must follow the rules set out in clause 5.3.

- (b) A *Registered Participant*, *Embedded Generator* or person intending to become a *Registered Participant* who wishes to establish a *connection* to a *network* must follow the procedures in this rule 5.3.

9.12 Insert new clause 5.3.1A in Chapter 5

This new clause identifies the information that the Network Service Provider must make public to facilitate the connection process.

5.3.1A Publication of Information

- (a) A Network Service Provider must publish on its website the following:
- (i) an application form for a new connection to the network or an alteration of an existing connection to the network;
 - (ii) the fee applicable to connect to the network, including the fee to process the application to connection;
 - (iii) a description of how an application for a new connection or a connection alteration is to be made (including a statement of the information required for the application);
 - (iv) a description of the connection process;
 - (v) an identification of the information that must be submitted with an application to connect; and
 - (vi) the basis for calculation of connection charges.
- (b) A Network Service Provider must annually publish on its website any network constraints that could affect connection to the network.

9.13 Amend clause 5.3.3(b4) in Chapter 5

This amendment ensures that, where appropriate, Embedded Generators are consulted in the development of connection standards.

- (b4) In making a determination in accordance with clause 5.3.3(b2) the Reliability Panel must consult Registered Participants, AEMO and, where appropriate, Embedded Generators, using the Rules consultation procedures.

9.14 Amend clause 5.3.3(b)(6) in Chapter 5

This amendment ensures that the preliminary program includes the timeline within which the Network Service Provider must decide whether or not to accept an application to connect.

- (6) a preliminary program showing proposed milestones for connection and access activities, including the time by which the Network Service Provider must make an offer to connect or reject a connection application, which may be modified from time to time by agreement of the parties, where such agreement must not be unreasonably withheld; and

9.15 Add new clause 5.3.3(b)(7) in Chapter 5

This amendment makes it clear that the Network Service Provider must provide a Connection Applicant with details of the fee applicable to process the application to connect.

- (7) the fee applicable to connect to the network, including the fee to process the application to connect.

9.16 Amend clause 5.3.3(c) in Chapter 5

This amendment ensures that the Network Service Provider can only require additional information in relation to the connection application where this is reasonably necessary.

- (c) Within 20 *business days* after receipt of the *connection* enquiry and all such additional information (if any) advised under clause 5.3.2(b) or, if the *Connection Applicant* has requested the *Local Network Service Provider* to process the *connection* enquiry under clause 5.3.2(d), within 20 *business days* after receipt of that request, the *Network Service Provider* must provide to the *Connection Applicant* written advice of all further information which the *Connection Applicant* must prepare and obtain in conjunction with the *Network Service Provider* to enable the *Network Service Provider* to assess an application to connect to the extent that the information has not already been provided by the *Connection Applicant* and the information is reasonably necessary to assess the application to connect including: ...

9.17 Amend clause 5.3.6(a1) in Chapter 5

This amendment sets limits on the additional time within which the Network Service Provider must decide whether or not to accept an application to connect.

- (a1) The *Network Service Provider* may amend the time period referred to in clause 5.3.6(a) to allow for any additional time taken in excess of the period allowed in the *preliminary program* for the negotiation of *negotiated access standards* in accordance with clause 5.3.4A but this time period must be within 65 working days from the receipt of the application to connect in all cases.

9.18 Amend clause 5.3.6(b) in Chapter 5

This requires the Network Service Provider to include details of the connection charges in the offer to connect.

- (b) The offer to *connect* must contain the proposed terms and conditions for *connection* to the *network* including:
- (1) for each technical requirement identified by the *Network Service Provider* under clause 5.3.3(b1), the *automatic access standard* or the *negotiated access standard* as determined in accordance with clauses 5.3.4 and 5.3.4A; ~~and~~
 - (2) the terms and conditions of the kind set out in schedule 5.6-;
 - (3) an itemised statement of connection costs including (so far as is relevant) the following:
 - (i) standard connection charges;
 - (ii) meter type and cost;
 - (iii) cost of system extension;
 - (iv) details of upstream augmentation required to provide the connection service and associated cost;
 - (v) any other incidental costs and the basis of their calculation;

and must be capable of acceptance by the *Connection Applicant* so as to constitute a *connection agreement*.

9.19 Amend clause 5.3.6(c) in Chapter 5

This amendment makes reference to a new schedule 5.3b where the minimum access standards for Embedded Generators are to be set out. An offer to connect must be consistent with these standards.

- (c) The offer to *connect* must be fair and reasonable and must be consistent with the safe and *reliable* operation of the *power system* in accordance with the *Rules*. Without limitation, unless the parties otherwise agree, to be fair and reasonable an offer to *connect* must offer *connection* and *network services* consistent with schedule 5.1 and (as applicable) schedules 5.2, 5.3, ~~and~~ 5.3a and 5.3b and must not impose conditions on the *Connection Applicant* which are more onerous than those contemplated in schedules 5.1, 5.2, 5.3, ~~or~~ 5.3a or 5.3b.

9.20 Amend clause 5.3.7(b) in Chapter 5

This amendment makes reference to a new schedule 5.3b where the minimum access standards for Embedded Generators are to be set out. The connection agreement must be consistent with these standards.

- (b) The *connection agreement* must include proposed *performance standards* with respect to each of the technical requirements identified in schedules 5.2, 5.3, ~~and~~ 5.3a and 5.3b and each proposed *performance standard* must have been established in accordance with the relevant technical requirement.

9.21 Insert new clauses 5.5(da) and 5.5(db) in Chapter 5

This new clause makes it clear that a Distribution Network Service Provider must ensure that the network is able to receive a supply of electricity from an Embedded Generator.

- (da) An *Embedded Generator* may seek *connection* to *distribution networks* for the supply of electricity to the *national grid*.
- (db) A *Distribution Network Service Provider* must ensure that its *distribution network* is able to receive the supply of electricity from an *Embedded Generator*.

9.22 Amend clause 5.5(f)(3) in Chapter 5

This amendment makes it clear that a Distribution Network Service Provider can only charge an Embedded Generator for shallow augmentation costs.

- (i) by the *Connection Applicant*, other than *Embedded Generators*, in relation to any *augmentations* or *extensions* required to be undertaken on all affected *transmission networks* and *distribution networks*; ~~and~~
- (ii) where the *Connection Applicant* is a *Market Network Service Provider*, to the *Market Network Service Provider* in respect of any reduction in the long run marginal cost of *augmenting* the *distribution network* as a result of it being *connected* to the *distribution network*; and
- (iii) by the *Connection Applicant*, where the *Connection Applicant* is an *Embedded Generator*, in relation to any *augmentations*, other than *shared network augmentation*, required to be undertaken on all affected *networks*.

Mr John Pierce
Chairman
Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

8 August 2013

Dear Mr Pierce,

RE: Submission—Connecting embedded generators rule change (ERC0147) draft determination

The rule proponents, ClimateWorks Australia, the Property Council of Australia and Seed Advisory have reviewed the Commission's draft determination on the rule change proposal. The Commission's draft determination accepts many of the solutions put forward by the proponents. When implemented, these solutions will improve connections through better information, greater certainty, and a faster, less expensive process. This will deliver an improved connection process for embedded generators in the National Electricity Market (NEM), meeting the requirements of the National Electricity Objective.

However, there are some adjustments and clarifications that are required to ensure this new connections process operates as the Commission intends. The areas which need clarification and/or revision are discussed below. This feedback was provided by many stakeholders: local governments, large and small businesses, government departments, industry associations and community groups. Significantly, these diverse stakeholders come from across the NEM. The issues raised in the original rule change proposal and the changes required to address them are not specific to one state or distribution network.

1. The published equipment registers

Recommendation: require DNSPs to list all equipment required, including protection and other equipment not directly connected to the network, on the online registers proposed.

The Commission has recommended that the National Electricity Rules (NER) require distribution network service providers (DNSPs) to publish and maintain a register of equipment that complies with their minimum technical requirements. These registers should also be reviewed at a minimum every two years (Clause 5.4.5(a) (2)). We support the publication of this information. Once published by all DNSPs this information will provide a useful input into the development of a national standard(s) for embedded generation connections.

Project proponents indicate that issues with DNSPs frequently relate to the associated protection and control equipment required by DNSPs. The Commission's proposed rule refers to the DNSP establishing and maintaining a register of "...associated equipment that has been connected to its network ..." (Clause 5.4.5(a) (2)). We understand from references elsewhere in the draft determination that the Commission intends the associated protection and control equipment to be included in the published registers.

Confirmation is sought that the language in the draft rule is consistent with this intention. The final rule should not allow artificial distinctions to be drawn, for example, between *equipment connected to the network* and *equipment required by the DNSP for connection to the network but not connected to the network*. The language used in discussing this issue in the draft determination may also need to be reviewed in the final determination to ensure there is no ambiguity about the Commission's intentions.

2. The preliminary enquiry stage

***Recommendation:** provide the option for project proponents to bypass the preliminary enquiry stage. This could apply where the project proponent has had similar projects anywhere in the NEM or the relevant distribution network.*

Over time connection applicants with multiple installations in a given DNSP's area or across the NEM may have developed a high level of expertise in connecting embedded generation. These experienced connection applicants could be exempt from the requirement to submit a preliminary enquiry. Instead, they should be given the option to proceed directly to the detailed enquiry process. The Commission should consider allowing this access to connection applicants with demonstrated competence and experience.

3. Time allowed between the detailed enquiry response and a connection application

***Recommendation:** extend the time between the detailed enquiry response and the lodgement of a connection application to 12 weeks.*

In its proposal for the detailed connection stage of the proposed connection application process, the Commission proposes that the detailed enquiry response prepared by the DNSP would remain valid for six weeks. Our discussions with project proponents indicate that this timeframe is too short. It should be increased to 12 weeks to allow for approvals and contracts to be signed under often complex ownership structures.

We appreciate that the detailed enquiry response cannot be held open indefinitely. However, the further six weeks proposed is unlikely to introduce material uncertainty into DNSPs' planning and approval processes and will materially increase the value of the 'agreed project' to connection applicants. The proposed six week extension will increase the contribution of the proposed rule to the Commission's intentions to provide a 'fast track' process for connection applicants. The proposed draft rule should be amended accordingly.

4. Defining the agreed project on performance criteria

***Recommendation:** clarify the definition of agreed project. It should:*

- *be clearly based on performance criteria;*
- *not allow for the introduction of other, discretionary criteria, including equipment specific criteria or other issues; and*
- *be linked to the DNSP's published standards.*

Only material performance differences relative to the original proposal should constitute variations in an agreed project definition.

The ‘agreed project’ introduced by the Commission has the potential, in the absence of an automatic access standard, to provide a fast-track approval process. The fast-track process will apply to projects that meet DNSPs’ published technical standards for embedded generation connections and where no investment in the shared network is required. For the potential to be realised, the process needs to be realistic in its timelines (see above) and clear in its intentions.

We understand that the specification of the agreed project is intended to be technical in nature and performance based, rather than based on specific equipment or on other, non-technical considerations. This is consistent with the Commission’s emphasis on the publication of the DNSPs’ minimum access standards and the requirement that the agreed project description include the agreed access standards. For the agreed project to work in practice the Commission’s intention needs to be clear and the proposed draft rules need to support it. Hence, clarification of the Commission’s intentions is required in the final determination and the proposed rule may need to be reviewed.

There are a number of possible questions raised by the discussion in the draft determination, two of which are:

- In discussing the applicant’s options for submitting a connection application, the draft determination refers to “an agreed project without any variation”. If an applicant substitutes an element(s) of the proposed project design with alternatives consistent with the agreed access standard, is this a variation?

We are not referring to changes that would, for example, change the connection point, but the substitution of one piece of equipment with another meeting the same technical requirements.

- If the alternative equipment proposed more than meets the requirements of the access standard, is this a variation? And, if yes, is this a variation that requires the connection enquiry to be resubmitted, or is this an acceptable variation, that is, one that can proceed along the fast track proposed?

The proposed rule, 5.3A.2, refers to “project parameters and corresponding access standards and technical requirements”. We seek confirmation that the language proposed in the draft rule is consistent with our understanding of the Commission’s intentions. This being, that the requirements project applicants are obliged to meet:

- are technical in nature, rather than equipment based;
- that the reference to project parameters is intended to capture only those parameters relevant to the connection application (such as the proposed connection point and facility characteristics); and,
- not other parameters best left to the commercial judgement of the connection applicant, such as the least cost equipment combination that meets the DNSP’s reasonable technical requirements.

5. **Customer's right to export electricity: technical challenge possible?**

***Recommendation:** provide greater clarification and an objective, technical assessment of a customer's right to export in the event of a dispute.*

Our rule change proposed an automatic right to export, which the Commission did not accept, based on its view that the safe connection of an embedded generator may require network augmentation. The Commission's reasoning is that, in the absence of a commercial agreement on the costs of augmentation when required, an automatic right to export could not be introduced into the NER.

We are concerned to understand the connection applicant's options in relation to a DNSP's restriction of the export level proposed in its connection application.

What is the process for a connection applicant to understand the basis for the DNSP's proposed export capacity and what process exists to challenge the DNSP's proposal?

As we understand the Commission's proposal:

- As part of its detailed response (second stage of the enquiry process), the DNSP tells the connection applicant the "details of the level and standard of service of power transfer capability that the [DNSP] can ensure the network provides" (proposed schedule 5.4B (d)).
 - Presumably this is the default level and standard of service of power transfer capability, that is, that level available prior to any required network augmentation, consistent with the Commission's views above.
 - We note that, in the summary to the draft determination, the Commission has drawn attention to the existing obligation in the NER on DNSPs to use reasonable endeavours to provide an applicant with the access sought. Where the capacity exists to provide the requested level of power transfer capability, this capacity should be the basis for the DNSP's response and not "reserved" for other future users or the DNSP's longer term development plans.
- Additionally, the DNSP is required to provide the itemised details of any augmentation required (Proposed Schedule 5.4B (f)(4)).
 - Again, we assume that the intention is that the augmentation proposed by the DNSP is that necessary to provide the requested level and standard of power transfer capability, and not some other level falling below the connection applicant's requested level of access.
- The response by the DNSP is provided to the connection applicant prior to the connection agreement, so in the event of a disagreement between the DNSP and the applicant about the power transfer capability available or the costs of the proposed augmentation, the connection applicant could refer to the independent engineer as part of the expert appraisal process. Recourse to the independent engineer's services is available to either the connection applicant or the DNSP at any point up to the connection agreement.
- These issues – whether the proposed default level of service proposed is a reasonable representation of the DNSP's available capacity in the given location and the itemised details of the required augmentation, however, are not clearly specified as part of that list of items about which an independent expert appraisal can be sought (5.9A.1).

- If these issues are included, then they may be captured by the reference to the augmentation or extension necessary to establish or modify a connection (5.9A.1.(a) (3)) and to fault levels and fault clearance (5.9A.1.(a) (10)).

If it is not the Commission's intention that independent technical appraisal of the DNSP's export offer is available to connection applicants, the Commission needs to provide more detailed guidance to the DNSPs about the nature of their obligation to use reasonable endeavours to provide an applicant with the access sought. The Commission should also provide more detailed guidance on the DNSPs' obligations governing their assessment of connection applications, for example, in relation to queuing.

Alternatively, if it is the Commission's intention that independent technical appraisal of the DNSP's export offer is available to connection applicants, the final determination should clarify this. In addition, the proposed rules may need to be reviewed to ensure that all elements of the proposed process operate as intended.

6. Shared network (deep augmentation) costs: can reimbursement work with the 'last in, worst dressed' approach in a meshed network?

Recommendation: spread shared network costs equitably over customers that use the same distribution network. This could be achieved by:

- *enforcing the current (high level) obligation on DNSPs to reimburse a proponent that has invested in deep augmentation when other customers are connected to that portion of the network; and,*
- *requiring a DNSP to provide the information on which the reimbursement should be calculated.*

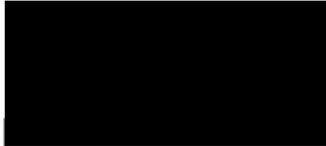
In rejecting our proposal to exempt embedded generators from shared network augmentation costs, the Commission has highlighted the existing obligation in the NER for the connection applicant to be reimbursed for the use of assets funded by the connection applicant to provide services to other connections. The Commission proposes connection applicants insert a clause into their connection agreements designed to achieve this reimbursement.

We are confident that a clause of this nature could be drafted and it may even be accepted by the DNSP for inclusion in the connection agreement. We are considerably less confident, however, that the connection applicant could enforce any such clause, since in a meshed network the applicant has no direct ability to observe the use of the assets it funds. We have also been unable to identify anyone who has received a reimbursement based on assets funded, notwithstanding the obligation in the NER.

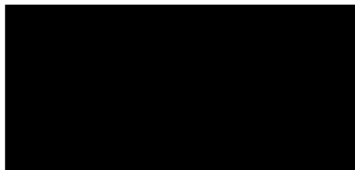
As a result, the Commission needs to reconsider its views on the 'last in, worst dressed' problem in a meshed network. Failing this, it needs to consider what additions to the rules are required to ensure that DNSPs are aware of their obligation to provide a reimbursement and to do so in good faith and in a timely fashion.

Please contact ClimateWorks, Seed Advisory or the Property Council if there is any element of this submission that needs additional detail or clarification.

Yours sincerely,



Patricia Boyce
Director
Seed Advisory



Jennifer Cunich
Executive Director
Property Council Victoria



Anna Skarbek
Executive Director
ClimateWorks