



15 December 2011

Kerry Connors
Executive Director
Consumer Advocacy Panel

kerry.connors@advocacypanel.com.au

By email

ClimateWorks Australia
Building 74, Monash University
Clayton Campus, Wellington Rd
Clayton, VIC 3800, Australia

Telephone: **+61 3 9902 0741**
Fax: **+61 3 9905 9348**

www.climateworksaustralia.org

Dear Kerry,

**Acquittal report for
Cogeneration Portfolio Project: Designing solutions to unblock barriers
Consumer Advocacy Panel grant AP 482**

I am pleased to enclose the Acquittal report for the above project, in accordance with the funding agreement received on 19 July 2011, and the Final Report from the project published on 22 September and the presentation of findings made to the AEMC on 16 November.

Our project has been successfully completed, and indeed exceeded our expectations. Key highlights include:

- Workshop series fully attended by the invited participants (approximately 20 senior representatives spanning the cogeneration supply chain - with customers, market participants, regulators, operators and policymakers working together over three months)
- Solution identified encompassing a specific rule change to the National Electricity Rules
- Launch of final report on 22 September to a sold-out business breakfast hosted by the Property Council with 160 attendees
- Industry press coverage of the final report
- Industry advocacy groups volunteering to support the ongoing advocacy of the report's findings (Energy Efficiency Council cogen working group; Property Council sustainability engineers group; Carbon War Room distributed energy working group)
- Pro bono legal services to draft the rule change and submission to the AEMC
- Invitation to present to the AEMC on 16 November, attended by all AEMC Commissioners and seven AEMC staff, positive feedback achieved including encouragement to lodge our rule change submission.

On behalf of all project participants, and particularly the project convenors ClimateWorks Australia and Seed Advisory, I sincerely thank you for the financial support provided by the Consumer Advocacy Panel for this project. It enabled us to proceed and make a meaningful contribution to the grid connections process that has frustrated the cogeneration industry for many years.

Yours sincerely,

A handwritten signature in blue ink, appearing to read "Anna Skarbek".

Anna Skarbek
Executive Director, ClimateWorks Australia

Acquittal report to Consumer Advocacy Panel

Consumer Advocacy Panel grant AP 482

Cogeneration Portfolio Project: Designing solutions to unblock barriers

Objectives of the project

The project sought to bring together a small portfolio of cogen project proponents, whose projects are designed and costed but stalled due to barriers, with relevant policymakers/regulators, retailers and distributors. During a series of workshops supported by written analysis, we sought to envision a commercial and regulatory solution that is relevant to all in the portfolio, thereby moving beyond one-off 'work-around' approaches to a more systemic approach that can then guide subsequent market-wide evolution. To demonstrate the solution's workability, we then hoped to assist the portfolio projects, and in parallel work with sector advocacy organisations to propose policy or regulatory changes based on the features of the solution that are common across the portfolio.

The aim was to accelerate deployment of cogen/trigen through a unique approach involving 'live' commercial projects (Victorian-based, for practical efficiency) as case studies for development of short- and long- term solutions that are designed by customers, market participants, regulators, operators and policymakers in a series of small, facilitated workshops from April to June 2011, supported by written analysis.

We sought to:

- invite 5-6 industrial or commercial building cogeneration plants that would otherwise be ready to ready to commence within one year, but for regulatory / market barriers
- establish a core working group that includes government and industry, alongside cogen project proponents
- through robust debate, devise an enabling solution for the selected plants that is feasible from both commercial and government perspectives, focusing on what can be achieved in the short term, with longer term aims separately noted
- report the outcomes to share the lessons and identify where solutions can be adopted by industry and government.

Our intended outcomes were:

- Steps to overcome implementation barriers for the portfolio of case study projects, in a form that is common to all (where possible) rather than bespoke, in order that they can provide a pathway to more permanent solutions to such barriers; and
- Recommendations of systemic and durable ways to overcome barriers to future Victorian cogeneration project developments, with a view to these being extendable to national cogeneration projects and other forms of distributed energy.

As shown below, these objectives were closely followed and implemented as intended, with successful outcomes. We secured the participation of six 'live' Victorian-based commercial cogeneration developments, and a project working group spanning the supply chain - with customers, market participants, regulators, operators and policymakers working together. The projects are described in Table 1 on page 9 of the Final Report.

The participants were:

- Australian Energy Market Operator
- Australian Energy Regulator
- CitiPower
- Cogent Energy
- Colonial First State Management Services
- Crown Melbourne
- Leighton Properties and the APN Property Group
- with Aurecon
- Monash University
- Moreland Energy Foundation
- Origin Energy
- Property Council of Australia – Victorian Division
- Sustainability Victoria
- United Energy
- VicUrban
- Victorian Department of Business and Innovation
- Victorian Department of Primary Industries

Issues considered for the project

The issues considered for the project were explored through the facilitated workshops and the supporting research. We focussed only on issues that could be resolved in the short term. Therefore this excluded longer term issues such as economic value ascribed to embedded generation exports, better transparency and understanding of avoided TUOS and DUOS, increased understanding and appreciation of demand side benefits by the market, improved skills and competency of the industry in understanding issues related connection of cogeneration and increased availability of funding programs for cogeneration (none of the portfolio projects were seeking funding support).

Therefore the issues that were prioritised for consideration focussed on:

- connection processes – streamlining application process with projects’ decision-making; common understanding of what information is required at what points in the process; development of a common checklist for connection applications and where possible some standardisation of the connection process.
- cost allocation: clarification of cost allocation for deep network costs

These priority issues were informed by the group’s identification of the following barriers (see chapter 3 of the Final Report for more detailed explanation):

Barriers in the connection process:

- Case-by-case approach; each distributor follows a different connection process; not many are published
- Lack of transparency in information required
- Misaligned decision-point milestones between electricity network owner and commercial cogen project owner
- Uncertain timeframes
- Lack of common contract terms
- District-level projects face further barriers to connect multiple sites

Costs in the connection process:

- Delays in process
- Can be up to a year for small projects and 2.5 years for large projects
- Commercial building developments require timeframe of 1-3 months, with 6 months max
- Technical network studies and potential equipment upgrades
- Costs of anticipating and then reworking designs
- Potential redesign after distributor requirements received later in process, possibly lowering performance and efficiency

These issues were explored in depth, alongside a study of the relevant Distribution Code provisions and National Electricity Rules. The result, driven by a strong desire to reduce the above barriers, was identification of some fairly simple standard processes into the rules governing connection processes for embedded generation that could substantially alleviate the problem.

The solution is described in chapter 5 of the Final Report.

In short, the Final Report proposes practical solutions to promote greater deployment of embedded generation including:

- a national, standardised connection process for small to medium sized generators;
- automatic connection rights, similar to residential solar PV systems; and
- practical district level licensing frameworks.

Costs and expenses associated with the project

The project was completed within budget. Funding from the Consumer Advocacy Panel contributed \$40,000 and funding from the industry project participants contributed \$150,000, plus in-kind support from the Property Council worth many tens of thousands of dollars.

The expenses associated with project are summarised below.

• Technical consultants: Seed Advisory	\$110,000
• Report editing: Sarah Robertson	\$9,657
• Report publication: sponsored by Property Council	In-kind
• Launch event expenses: mostly in-kind and some direct:	\$1,260
• Meeting costs: travel and meeting rooms	\$9,080
• Project facilitation: ClimateWorks	\$59,623
	\$190,000

Effectiveness of the project

Our project has been successfully completed, and indeed exceeded our expectations. Evidence of its effectiveness can be seen through:

- Workshop series fully attended by the invited participants (approximately 20 senior representatives spanning the cogeneration supply chain - with customers, market participants, regulators, operators and policymakers working together over three months)
- Solution identified encompassing a specific rule change to the National Electricity Rules
- Launch of final report on 22 September to a sold-out business breakfast hosted by the Property Council with 160 attendees
- Industry press coverage of the final report
- Industry advocacy groups volunteering to support the ongoing advocacy of the report's findings (Energy Efficiency Council cogen working group; Property Council sustainability engineers group; Carbon War Room distributed energy working group)
- Pro bono legal services to draft the rule change and submission to the AEMC

- Invitation to present to the AEMC on 16 November, attended by all AEMC Commissioners and seven AEMC staff, positive feedback achieved including encouragement to lodge our rule change submission.

Comments from the industry participants included:

“We’ve never had a forum like this where we’ve had all or most of the stakeholders in the room.”

“There’s an old adage in my world, “that every major project needs a champion”. Without ClimateWorks I suspect that this area would have languished for some time with ongoing frustrations and without a clear path of change.”

Comments from Energy Minister Martin Ferguson in his foreword to the Final Report included:

“This report is a welcome contribution to the policy debate, and will provide valuable input into new partnerships described in the report, and the rule making and market development work of the Australian Energy Market Commission. “

Below are copies of industry press coverage received, and the press release issued to accompany the launch of the report.



Since the launch of the report, we have received multiple messages of support, and offers from industry members to contribute to the ongoing advocacy. In addition, the Property Council has established a working group of engineers to provide advice on the technical standards that will be needed to accompany the automatic right of access to the distribution network. This work will be completed in the first half of 2012.

In parallel, we have commissioned pro-bono legal services through Maddocks Lawyers to draft the formal rule change submission. We intend to lodge this with the AEMC in the first few months of 2012. This will be only the second customer-led rule change submitted, to our knowledge. We have presented our intentions to the AEMC, and been invited to discuss the rule change submission in draft form before it is formally submitted. We will undertake this early in the new year, including further engagement with distribution network service providers outside Victoria.

We thank the Consumer Advocacy Panel for its financial support for this project. We are confident that it enabled us to make a meaningful contribution to the grid connections process that has frustrated the cogeneration industry for many years.



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 ClimateWorks/PCA verdict on cogen and trigen: need to overhaul rules [SHARE](#)  [PRINT](#)  [RSS](#) 

By Leon Gettler

22 September 2011 – A top level report has recommended a radical overhaul of Australia's electricity rules to speed up the adoption of cogeneration and trigeneration, creating more greener buildings around the country.

Australia already has a few state of the art commercial buildings working off cogeneration. They include the National Australia Bank's primary data centre in Melbourne's eastern suburbs, the Toyota headquarters and the Royal Children's Hospital, both also in Melbourne. However, Australia has not had a massive takeup of cogeneration facilities. Industry players say it comes down to connection and cost issues. A building owner's decisions are not the same as that of the electricity distributor working to their own schedule and that can potentially blow out costs.



Royal Children's Hospital, Melbourne includes state of the art trigeneration

Download the report from [here](#)

John Thwaites, former Victorian Deputy Premier and Chairman of ClimateWorks Australia says that it's not just a problem of getting electricity distributors and property owners singing off the same hymn sheet. It is about establishing a clear process. "Even with the best will in the world, they are not necessarily working together," Thwaites says. "If you have a process, it's cheaper."

The changes recommended in the report seek to create that process. They are the first practical measures Australia has seen for a more rapid roll out of cogeneration and trigeneration. They include introducing a national, standardised connection process for small to medium sized generators, automatic connection rights, similar to residential solar PV systems; and practical district level licensing frameworks.

The report, *Unlocking Barriers to Cogeneration*, was prepared by ClimateWorks Australia and commissioned by the Property Council of Australia. Participants in the study providing input included Origin Energy, Cogent Energy, Citipower, United Energy, the Australian Energy Market Regulator and the Australian Energy Regulator.

Significantly, the players spanned the supply chain – customers, market participants, regulators, operators and policymakers – and they worked together over three months to help produce the report.

Cogeneration is the simultaneous production of electricity and heat from the same fuel source. Trigeneration is the simultaneous production of heat, cooling and electricity.

These processes reduce greenhouse gas emissions in two ways. First, they do it by using natural or waste gas instead of fossil fuel. More importantly, a single fuel source producing multiple forms of energy reduces fuel requirements, carbon dioxide emissions and more than doubles the amount of thermal efficiencies.

It is a technology that's critical for the property sector which accounts for approximately 19 per cent of total energy consumption in Australia or 24 per cent of Australia's total greenhouse gas emissions. Done properly, co-generation offers significant opportunities for low cost or cost-neutral abatement.

"Co and trigeneration technologies offer a critical step toward achieving the goal of green grids of building and precincts that power themselves," said Peter Verwer, chief executive officer of the Property Council.

The ClimateWorks plan identifies 13.5 million tonnes of cost effective abatement potential through cogeneration by 2020.

"Increasingly, Australian property developers and owners are seeking to incorporate cogeneration into their existing buildings and new developments. However, they face a complex and burdensome connection process and regulatory barriers that inhibit them from deploying the technology," the report says.



John Thwaites



At the moment, however, cogeneration in Australia is severely under-utilised. Australia has only 3338 megawatts of cogeneration installed and 592 megawatts of that is fuelled by renewable sources. That means there are a lot of buildings that are generating greenhouse gases.

Barriers include inefficient connection processes that are costly and time consuming. This is because distributors, or Distribution Network Service Providers like Citipower-Powercor, Jemena, SP Ausnet and United Energy Distribution are not working with cogeneration project owners. The report cites uncertainty surrounding timelines, a lack of standard and readily available DNSP technical requirements, poor information exchange and uncertain, often high costs of connection.

"The connection process is inconsistent across DNSPs and lack transparency," the report says.

The report also looks at problems developing projects that would cover multiple sites so that they would work across more than one building where those buildings are located next to each other.

"Barriers to multi-site cogeneration developments in particular discourage cogeneration project owners from pursuing larger systems," the report says. "These barriers discourage economies of scale and the most efficient use of cogeneration technology being achieved."

The report says the National Electricity Rules need to be overhauled to streamline the process for cogeneration project owners wanting to connect into the distribution network.

It recommends introducing a standardised connection process to replace the cumbersome and slow case by case approach now being used.

It also recommends the NER incorporate cogeneration facilities of up to five megawatts. This is an important step because it would ensure that cogeneration projects would not be burdened with too many constraints and would be treated the same as household solar panels.

The report says project owners could pay distributors a fee for services to work with them. Distributors would also be required to publish an annual exceptions report showing where there are constraints in the network preventing connections.

The report recommends the players work together to create economies of scale where there are large multi-site, and even district level, cogeneration projects.

Still, some industry players ask whether there is enough to encourage building owners to adopt cogeneration. Brad Knowles, energy services manager for controls company Alerton says the question is whether building owners will find it profitable switching to cogeneration.

He says one possible way would be for building owners to sell electricity back to distributors. "Unless there is some sort of commercial viability, where is the incentive?" Knowles says.

Just another issue to sort out on the path to cogeneration.

The Fifth Estate – green buildings sustainable property news and forum

"We can't wait for the future"

22 September, 2011



Regulatory barriers slowing cogeneration technology usage

By

Rachel Alembakis

– September 28, 2011 **Posted in:** Corporate Reporting, Environment, Top News

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Cogeneration – combined heat and power – and trigeneration – combined cooling, heat and power – offer “significant” environmental and economic benefits to the Australian building industry. But “a complex and burdensome connection process and regulatory barriers that inhibit them from deploying the technology” is challenging the ability of property developers and owners to integrate cogeneration, according to a report by ClimateWorks Australia.



According to ClimateWorks Australia, working in conjunction with the Property Council, cogeneration is readily available technology that is about 80% more efficient than conventional, coal powered energy generation, produces 60% less carbon emissions and can be fuelled by natural gas and renewable fuels. Cogeneration is the simultaneous production of electricity and heat from the same fuel source, and trigeneration is the simultaneous production of heat, cooling and electricity.

“In both cogeneration and trigeneration systems, a fuel is burnt in an engine which drives a generator to produce electricity,” according to the report.” In cogeneration systems the waste heat from the engine is used for space, water or process heating and in trigeneration systems it can also be converted to cold water for cooling through an absorption chiller. Cogeneration and trigeneration systems are typically fuelled by gas, although they can be fuelled by renewable or fossil fuels.”

Using a single fuel source to produce multiple uses of energy reduces fuel requirements, CO2 emissions and increases thermal efficiencies. The ClimateWorks Australia report cites CSIRO statistics reporting that green grid technologies such as co- and trigeneration can abate up to 18 megatons of carbon emissions by 2020 and 40 megatons by 2030 and that the value cost savings of these technologies could be AU\$130bn by 2050.

The ClimateWorks Australia study cited three main barriers to mainstream adoption of cogeneration: “an inefficient connection process that is costly and time consuming, due to outmoded case-by-case assessment processes characterised by unclear rules and standards; the absence of clear guidelines about the roles and responsibilities of distribution network service providers, and a bias against multi-site, precinct-level cogeneration plant and systems.”

To remedy those barriers, the report proposed a national, standardised connection process, automatic connection rights similar to residential solar PV systems, and a practical district level licencing frameworks.

“We are pleased that this project has resulted in specific recommendations, including a change to the National Electricity Rules to provide for an automatic right of connection for standard cogeneration projects,” said John Thwaites, former Victorian deputy premier and chairman of ClimateWorks Australia.

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No Comments



EMBARGOED: Thursday 22 September 2011

ClimateWorks and the Property Council call for solutions to unlock the barriers to cogeneration

ClimateWorks Australia, working with the Property Council, today released the report of its Unlocking Barriers to Cogeneration project. The report identifies a number of solutions for greater deployment of cogeneration*.

Jennifer Cunich, Executive Director of the Property Council in Victoria, said “increasingly, Australian property developers and owners are pursuing cogeneration for their existing buildings and new developments. However, they face a complex and burdensome connection process and regulatory barriers that inhibits them from deploying the technology.”

The Unlocking Barriers to Cogeneration report proposes practical solutions to promote greater deployment of embedded generation including:

- a national, standardised connection process for small to medium sized generators;
- automatic connection rights, similar to residential solar PV systems; and
- practical district level licensing frameworks.

Professor John Thwaites, former Victorian Deputy Premier and Chairman of ClimateWorks Australia, launched the Unlocking the Barriers to Cogeneration report.

“We are pleased that this project has resulted in specific recommendations, including a change to the National Electricity Rules to provide for an automatic right of connection for standard cogeneration projects,” said Professor Thwaites.

Cogeneration is a readily available technology. It is 80 about per cent more efficient than conventional, coal powered energy generation. It also produces 60 per cent less carbon emissions and can be fuelled by natural gas and renewable fuels.

“Co and trigeneration technologies offer a critical step toward achieving the goal of green grids of building and precincts that power themselves,” said Peter Verwer, Chief Executive Officer of the Property Council.

Anna Skarbek, Executive Director of ClimateWorks Australia, said “the recommendations in this report are the result of a genuinely collaborative process.”

Drawing on a portfolio of six 'live' Victorian-based commercial cogeneration developments, the project working group spanned the supply chain - with customers, market participants, regulators, operators and policymakers working together over three months coordinated by ClimateWorks with support from Seed Advisory.

Ms Skarbek thanked the participants in the project for their contributions, and Seed Advisory for their technical expertise, research and advice throughout the project. Ms Skarbek also gratefully acknowledged the financial support provided from industry and government.

* Cogeneration (including trigeneration) is a form of embedded energy generation, referring to its location being 'embedded' in buildings or industrial sites near the energy users.

The report is available at www.climateworksaustralia.org

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Contact:

ClimateWorks Australia — Anna Skarbek, Executive Director — 0419 686 018
Property Council — Mendo Kundevski, Policy Manager — 0458 728 777