

# inchbonniehydro



## Submission to the Electricity Authority: Changes to Distributed Generation Pricing Policy

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Re: Consultation Paper – Review of Distributed Generation Pricing Principles

This is our submission paper on the EA review of Distributed Generation Pricing Principles. We have also read the Transmission Pricing review document, but restrict this submission to the DGPP as we are a generator in a local distribution network. Where our submission points have relevance to the Transmission Pricing document we request that they also be considered there.

We would like to speak to this submission and also welcome any questions from the EA on it. As a small generator we have limited resources, but believe our points are relevant and representative of many distributed generators.

We support the submission of the IEGA and this submission supplements it from our particular perspective.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'D. MacKay', written in a cursive style.

David MacKay

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## About Inchbonnie Hydro

Inchbonnie Hydro Ltd built, owns, and operates a 1.7MW run-of-the-river hydro scheme, situated in the Hohonu Range between Greymouth and Hokitika. Generation started on 18 Dec 2015.

The scheme, embedded in the Westpower network, will generate renewable energy of about 9GWhr/year. The scheme pays a royalty to the Department of Conservation and provides significant economic benefit to the region.

## Introduction

The Electricity Authority is considering changes to the 2007 regulations that will:

- remove the Distributed Generation Pricing Policy (DGPP) and therefore the requirement for network companies to pay Distributed Generators (DGs) the Avoided Cost Of Transmission (ACOT)
- allow network companies to allocate network common costs to DGs for connection and use of the network.

Our understanding is that the current regulations were established by the government to support DG investments, after extensive consultation that had clearly established:

- the wider consumer and market benefits that DGs bring to New Zealand's energy mix.
- the important role DGs had, and continues to play, towards achieving New Zealand's strategic goals e.g. through prior periods of under capacity.
- there were no clear incentives for network companies or Transpower to contract with DG to realise these benefits.

While Inchbonnie recognises that EA has concerns, we believe the original regulations were meant to ensure that small investors would be able to contract fairly with network companies through the ACOT mechanism.

We understand that regulations and rules may need to be changed or modified from time to time to account for changing market conditions, or for example, other big government policy requirements like climate change, tax and the like, but it is not clear what has created the immediate need to make such fundamental reversals in relatively recent government undertakings.

Our submission describes the impact of the changing rules, including the impact on Inchbonnie Hydro; points out the contributions of distributor generators (DGs); and predicts DGs will become increasingly important. We conclude with suggestions for EA. Appendix A has the answers to the EA's questions.

## Changing the Rules on Industry

It is of fundamental importance that any government agency should adhere to and support its own regulations, which are set in place to guide industry and investors.

Because regulations influence how investors and industry make decisions, they need to be robust and reliable. The government will lose credibility and the intrinsic power of such mechanisms will be lost if it does not stand behind them. We realise new regulations may be

needed to drive industry in the right direction, but it would make a mockery of the tool if the rules were changed on those who invested under existing regulations.

It is important to recognize the length of time it takes to change regulations without disruption and without investor flight...to replace regulations with new ones that drive industry to meet the needs of society. With ACOT we have a mechanism that is already in place and is already delivering the results in the wider context of encouraging investment in renewable distributed energy.

If ACOT is changed significantly from its current form, it will take years for other mechanisms to be developed, analysed, and put in place to encourage such investment. This will cause major disruptions and pose compliance costs that will either need to be passed on to consumers, or trigger substantial losses for generators.

These are years that the government does not have to play with for New Zealand's energy security and to meet our global obligations. We already have a mechanism that works and it would be shortsighted of the EA to sacrifice the momentum within industry towards a greater objective.

## Example of Non-Retroactive Change

The British government has recently changed regulations surrounding the electricity industry without affecting existing investors. For example, the Feed-In-Tariff schemes to encourage investment in small wind, solar, and hydro schemes were changed to reduce the rate paid for the electricity generated. But the changes were not retrospective for people who had invested in previous iterations of the scheme. The deal they invested in remains in place.

## A Moral Obligation

The EA has a moral obligation to the people who have invested heavily under the structure of government regulations. For many, this is not just a case of losing some value off shares on the stock market. It is about the potential failure of companies grown with the accepted gearing and risk associated with normal business practice. Detailed analysis is done by companies in this industry utilizing long-term hydrology records, price of energy forecasts, projected forward interest rates, projected peak demand generation etc. The stability offered by the ground rules of a mechanism such as ACOT is fundamental.

Besides money, there is investment in time, energy, and the belief in a goal that society is calling for. People need to be highly motivated to achieve certain results and while financial motivation is important, the driving force is multiplied if the goals are recognised as being of great importance to society. Momentum is further encouraged with the knowledge that government is in support.

## Impact on Inchbonnie Hydro

The existing regulations were integral to determining the economic viability of the Inchbonnie Hydro scheme. Specifically, the ACOT mechanism to reduce peak demand by appropriately paying DGs for actual generation, seemed robust, sensible and practical, so it is with great disappointment that we learn that the government now considers the regulations to be inappropriate and subject to change.

The Independent Electricity Generators Association (IEGA) commissioned PWC to independently review the likely financial consequences of removing the DGPP and allocating

common costs. PWC found the proposals will severely impact Inchbonnie Hydro – just as we have completed construction and are most vulnerable to the proposed regulatory changes – the extent and suddenness of which we could not have anticipated.

The EA comment below is completely out of touch and does not reflect the reality for Distributed Generators who have built in the last 8 years:

*Also, distributed generators will continue to locate in and operate in regional areas of New Zealand to the extent that it is efficient for them to do so. Due to the low operating cost of most distributed generation, it is unlikely that many (if any) distributed generators would shut down if ACOT payments were reduced.*

It is only efficient for DGs to locate and operate if they are reimbursed for ACOT on the same or similar basis that Transpower is. Inchbonnie has borrowed over \$2M from Development West Coast to get the scheme built. The EA does not seem to realise the significant capital cost employed in renewable generation – paying off these loans requires revenue and the business case was based on ACOT payments being part of the revenue stream as per current regulations.

## Contributions of DGs.... The Wider Picture

The EA views ACOT only in relation to generation that reduces the need for transmission investment. However, ACOT has much wider and more diverse benefits to the country.

Correspondence with the EA has revealed that the effect DGs have on peak demand is only valued according avoided transmission costs...not on the effects a reduction in peak demand has on competition, energy efficiency, the electricity market and reliability of supply. We do not agree with this approach and suggest that the economic analysis used to review ACOT needs to incorporate more than just the avoided transmission costs.

By encouraging investment in generation that targets peak demand, ACOT is also working to:

- encourage **competition** between sectors of the electricity industry.
- bring about **energy efficiency through lower losses**.
- reduce the **marginal cost of electricity**
- increase **reliability** and security of supply
- provide local **economic benefits**.

## Competition

Competition in the electricity industry for the long-term benefit of consumers is part of the EA's statutory objective, but needs to be considered further in the proposals. We have several concerns:

- DGs are in competition with Transpower to bring increased reliability at the grid exit point (GXP) but the proposals do not reward reliability. Competition will be reduced and the monopoly enjoyed by Transpower for the provision of reliability will be strengthened at the expense of DGs.

Under the EA's proposals, Inchbonnie Hydro will be excluded from the same price that Transpower receives at the Dobson GXP. This is despite the fact that Transpower will set the price through the interconnection charge.

- Under the EA's proposals Inchbonnie Hydro will be required to negotiate with Transpower for ACOT payments. We will be depending on a competitor to determine if there is a benefit from our generation. Westpower, the distributor, should be able to treat Inchbonnie Hydro and Transpower the same when acquiring reliability of service, just as it currently does.
- Monopoly of the network. The significant overbuild of the grid into the Dobson GXP is in effect monopolistic. Under the EA's proposals, competition from DGs like Inchbonnie Hydro will be shut out for years.
- DGs are in competition with Market Generators. Especially to provide energy during peak demand. However, DGs are faced with the possibility of network Common Costs which will unfairly benefit the Market Generators.

The proposal may contravene the Commerce Act 1986, which promotes competition for the long-term benefit of New Zealand consumers. It makes 'co-ordinated conduct' illegal, including agreements that:

- substantially lessen competition in a market
- exclude or limit dealings with a rival
- fix, maintain, or control prices.

## System Energy Efficiency

Energy is lost during transmission: more than 3.5% in the local West Coast network, and another 5% in Transpower's network. Placing generation closer to the place of consumption is more energy efficient and ACOT enabled this. There is ample evidence from many years of industry practice to show that peak demand creates higher than average energy losses across the system. This is one reason why networks manage hot water demand at peak periods.

## Lower Marginal Cost of Electricity

As well as reducing transmission losses, DGs can also reduce the nodal location factors and costs of energy to local consumers. So although we receive the same wholesale energy spot prices as larger market generators, we help reduce local nodal prices.

ACOT payments, averaging less than \$15/MWh (as found by PWC), are only earned when generating at those exact peaks. If, however, DGs did not respond to ACOT price signals, larger gas or diesel fired generators would be paid over \$100/MWh for all-market generation at peak demand periods instead. (The same would be true for hot water or other demand controlled during system peaks for which network companies offer consumers high tariff rebates).

The big difference in New Zealand is that most DGs offer lower cost, renewable electricity, especially on the West Coast where it is hydro with some peak storage capability. Since DGs collectively make up more than 10% of total market capacity, 95% of it renewable, we can reduce the need for less efficient, larger market generation, even if only at peak periods. .

## Reliability and Security of Supply

DGs provide vital back-up electricity for local communities if the national network fails or is under stress. This is particularly important to isolated communities or communities exposed to significant weather events. As ACOT is only paid on actual generation during the peak periods, it

is a good indication of the reliability of DG during these peak times. Local lines company Westpower has acknowledged the benefits brought to its network by Inchbonnie Hydro. Over 20 kilometres of the 11kV network was upgraded by Inchbonnie Hydro. The power scheme provides voltage support in an area of the network that is far removed from the GXP. Generation at Inchbonnie allows Westpower to reduce the extent of its planned outages in the area.

We are aware of a number of occasions when Transpower has asked a local DG to increase generation when the grid is impaired. It is ACOT that enables the DG to be a viable business, and hence be able to provide this service.

## Local Economic Benefits

Because DGs often operate outside the main cities, they can contribute greatly to the local economy by providing jobs and using local services. Development West Coast (DWC) welcomed Inchbonnie Hydro, with its Chief Operating Officer saying:

*This is a project that ticked every box for DWC as it brings many economic benefits to the West Coast. It provides employment, utilises local materials and suppliers, increases the Coast's energy independence and improves electricity infrastructure. Its developers deserve to be applauded for their innovation.*

Please read their news release in Appendix B: Innovative Hydro Scheme Provides Economic Benefits.

## DGs will be Increasingly Important

The contribution of small generators to New Zealand's energy mix will continue to grow proportionally, with DGs becoming an increasingly important part for several reasons:

- As NZ tries to meet its emissions targets, it is likely that fossil fuel generation will become increasingly expensive due to carbon taxes and other disincentives that will inevitably come in to play. Such generation will be phased out.
- The uptake of electric vehicles (EVs) will be exponential. The government already recognizes that EVs are particularly relevant in NZ as a means of reducing emissions. The increase in demand on electricity has to come from somewhere.

If provision is not made for new generation then the price of power will grow out of proportion to the cost of living. Consumers will be at a loss. This is the job at hand for the EA.

New technology, as used by Inchbonnie Hydro, opens up many new possible sites for hydropower. Conversely, environmental considerations narrow down and possibly eliminate the potential for new large-scale hydro in NZ. But sites that are ideal for small power schemes are often far removed from the Transpower grid.

By necessity these small power schemes tend to be embedded, and it is important to ensure regulation does not disadvantage the DGs. Small power schemes need access to distribution networks and the proposed allocation of common costs will severely limit that access. The investment in distributed generation must be encouraged through the DGPP and ACOT mechanism, which is an appropriate payment for the measurable benefits that DGs bring to consumers.

The EA has a responsibility of managing the supply of electricity for the long-term benefit of consumers. Therefore the EA has a responsibility to encourage new renewable generation.

## Conclusion and Suggestions

Inchbonnie Hydro Limited does not agree with these proposals, which:

- do not meet the code requirements,
- unfairly benefit competing Market Generators by introducing network costs for DGs
- will lead to the loss of significant benefits that DGs bring to the New Zealand energy equation
- put small DGs in the very difficult position of having to try and negotiate ACOT or avoided cost of distribution (ACOD) with state or regional monopolies with no real structure or methodology in place.
- do not recognise the important way in which the regulations influence decision making by industry and the need for the rules not to be changed.

We support the IEGA's submissions that cover these matters in more detail and which incorporates PWC's work. We confirm the PWC financial impact forecasts reflect our financial situation.

*The proposed changes will impact significantly on the profitability of Inchbonnie Hydro and potentially on the survival of the company.*

We suggest the following for the EA:

- Review the ACOT under its widest possible mandate, given there are no fundamental market changes for this proposal.
- Recognise the ACOT mechanism as an important driver towards the EA's wider goal "to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers".
- Consider how DGs are increasingly important players in the national and international drive towards a more sustainable future with greater security of supply of energy. This is within the scope of the EA and its goal of managing electricity supply for the long-term benefit of consumers.
- Exempt DGs who have invested over the last 8 years from changes that nullify the conditions under which they invested.
- Request Transpower to include in its next TPM update:
  - an evaluation and a review of ALL the benefits that DGPP and ACOT provides
  - a recognition that for government regulations to be a credible investment tool, the rules must be kept in place for those who have invested under them
  - a recognition that there is a moral obligation to people who have been guided by the EA's regulations.



## Appendix A: Answers to the EA's Questions

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Q1 Do you consider that the proposed Code amendment described in section 4.1 is preferable to the status quo and the alternatives described in section 4.6? If not, please explain your preferred option(s) in terms consistent with the Authority's statutory objective.

No. The status quo works and provides a methodology and mechanism for DG to be properly compensated for its contribution to reduced Peak Demand. The method of calculating this is by others (Transpower) but small DG don't need to negotiate with monopolies or pay for extensive consultation or lawyers. The status quo levels the playing field so that DGs are not disadvantaged and can compete with Market Generators to bring benefits to consumers.

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Q2 Do you consider that the proposed Code amendment described in section 4.1 complies with section 32(1) of the Act, and with the Code amendment principles, and should therefore proceed?

No. The proposed amendments are drastic and affect investments made in good faith under the existing DGPP rules. The allocation of network common costs would introduce new charges to DGs that are not also allocated to competing Market Generators supplying energy to consumers from the transmission grid. The proposals lessen DGs ability to compete with Transpower for the supply of reliability services to networks.

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Q3 Do you have any comments on the drafting of the proposed Code amendment described in section 4.1? (The drafting is included in Appendix B.)

No.

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Q4 Do you consider that the proposed Code amendment should come into force at a single date, or should it be phased in?

They should be phased in. However, more importantly, there is not enough time before the proposed first implementation date of April 2017 to complete all the work necessary to properly evaluate the proposals after submissions have been submitted. Time is also needed for all of the regulatory procedures and proper process to be followed. Especially if DGs have to negotiate with Transpower.

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Q5 Is the proposed phasing for the Code amendment appropriate? (The phasing is discussed in section 4.3.) If not, what alternative phasing or dates would you propose and why?

There is no real phase-in period (1 or 2 years is very short). This rapid change will cause uncertainty and hence affect supply and competition moving forward. Companies that invested under the guidance of the existing regulations need the benefits offered by those regulations for a minimum of 10 years to have a fair opportunity to strengthen their balance sheets to an acceptable level. This is fundamental in order for regulations to remain an effective tool for guiding industry. However, our submission very strongly supports the view that the status quo provides the greatest benefit to consumers and that the proposed Code amendment is unnecessary (phased in or not).

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Q6 If the proposal were to proceed, do you consider that there would be barriers that might prevent agreements being reached between Transpower and distributed generation owners to efficiently reduce or defer transmission network costs? If so, what are these barriers? Please consider both existing and proposed new distributed generation.

ABSOLUTELY! The cost of transmission is currently calculated by Transpower (not DG or lines companies) and there is a set procedure. If DGs generate locally and less transmission is needed at the peak periods due to distributed generation, then DGs gets the benefit instead of Transpower (as Transpower doesn't need to transmit the power). This is fair. What is proposed is complicated and unworkable – even Transpower don't know how they would implement the proposed changes.

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Q7 If the proposal were to proceed, do you consider that there would be barriers that might prevent agreements being reached between distributors and distributed generation owners to efficiently reduce or defer distribution network costs? If so, what are these barriers? Please consider both existing and proposed new distributed generation.

YES. Electricity code and rules are really complex and difficult. Many DG are small entities who are finding even this consultation process prohibitive. We can't negotiate with some lines companies and there is no independent mechanism or methodology for assessing ACOT or ACOD. Everything would be bespoke and it would be a nightmare. The existing system works because it is SIMPLE and it was set up for very good reasons. Don't throw it out.

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Q8 If the proposal were to proceed, do you consider that those distributors that were no longer able to recover the cost of making ACOT payments would cease making such payments?

Yes. Distributors would definitely cease making ACOT payments if they could not recover the cost. The EAs proposal is to take away the mechanism that permits distributors to pay DG for the transmission costs that are avoided. Small DG are almost powerless to negotiate with lines companies (monopolies and tough commercially). How can we?

## Appendix B: Endorsement by Development West Coast

### Innovative Hydro Scheme Provides Economic Benefits

DWC is proud to have supported the development of the new Inchbonnie Hydropower scheme which is now generating enough energy to cover the requirements of 1200 West Coast homes annually.

Inchbonnie Hydro, near Jacksons, began generating power earlier this year. The 1.7 Megawatt "run of the river" hydro scheme takes water from streams on conservation land high up in the Hohonu range. It is designed to have minimal environmental impact with no major excavation, earthworks or dams required.

DWC Chief Operating Officer Warren Gilbertson says DWC was delighted to provide a loan to help fund the scheme.

"This is a project that ticked every box for DWC as it brings many economic benefits to the West Coast. It provides employment, utilises local materials and suppliers, increases the Coast's energy independence and improves electricity infrastructure. Its developers deserve to be applauded for their innovation," he says

Originator and developer, Dave MacKay, says support from DWC was key to getting the project off the ground.

"Project finance is not easy to find and the people at DWC put a lot of energy into evaluating the feasibility of the scheme and the flow-on effects to the local economy. Schemes like Inchbonnie Hydro represent the future for hydro power generation in New Zealand," he says.

"Building a power scheme on the side of a mountain in the bush like this has not been easy. The positive outlook from DOC and "can do" attitude and ability of the local contractors and employees really made the job possible" says Mr MacKay.

Mr MacKay says the scheme cuts CO2 emissions by over 4,000 tonnes a year when compared to the combined cycle gas generation it is displacing. Distributed generation makes an important contribution to the government's climate change and renewable energy targets.

Source: Development West Coast website <http://www.dwc.org.nz/latest-news/ceo-welcomed>