

**BEFORE THE CENTRAL OTAGO DISTRICT COUNCIL**

In the matter of the Resource Management Act 1991

And

In the matter of an application for resource consents for the construction of a data centre and associated facilities

By Contact Energy Limited

**Applicant**

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**EVIDENCE OF BOYD MUNRO BRINSDON**

3 February 2022

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## Introduction

1. My name is **Boyd Munro Brinsdon**. I am the Head of Hydro Generation for Contact Energy Limited (Contact) based at Clyde and I am giving this evidence on behalf of the Applicant.
2. I have an Electrical Trade Certificate and Level 6 Diploma in Electricity Supply (Power System Management). After working for the former Electricity Corporation of New Zealand Limited on hydro generation sites in the Waitaki Valley and substation construction in the lower South Island and working for a number of years in the United Kingdom, I joined Contact in February 1997.
3. For most of the 20 years following 1997, I was employed by Contact in electricity market trading roles in Clyde and in Wellington. I was appointed to my present position of Head of Hydro Generation in 2015. In this role, I manage Contact's hydro generation facilities in the Clutha River including the Clyde Dam.

## Datacentre Concept

4. The concept underlying the applications Contact has made is for a Datacentre to operate on the Clyde Dam footprint in association with the Clyde Power Station. It involves a series of computer servers located within eight containers with the ability to operate 24 hours a day, 7 days a week. However, the proposal is that the Datacentre will manage its demand for electricity to match available electricity generation in real-time, operating as a flexible load on the electricity generation system, so that it has minimal impact on the electricity grid. The location of the Datacentre immediately adjacent to the Clyde Power Station promotes optimum efficiency, because it reduces transmission and distribution losses, which represent approximately 8-10% across the electricity grid.
5. The proposed Datacentre seeks to meet the growing global demand for data processing. In 2018, world Datacentres consumed close to 1% of globally generated electricity, and this trend is set to triple or even quadruple in the coming decade.
6. New Zealand is an attractive location for establishing new Datacentres, because of its very high proportion of renewable electricity generation (currently averaging around 85% and expected in the future to be 100% renewable in a mean hydrological year), as demonstrated by recent publicity of a significantly larger 100MW Datacentre proposal

planned for a rural site at Makarewa, adjacent to the 220kV transmission lines between Manapouri Power Station and the Tiwai Aluminium Smelter.

### **Lake Parime**

7. Data processing is not Contact's core business. Contact has entered into a commercial relationship with Lake Parime involving supply of up to 10MW of electricity to the Datacentre and related land lease for the Datacentre site.
8. Lake Parime is a privately owned, UK based, digital infrastructure company that designs, builds and operates high-performance computing systems that are connected to renewable energy sources. Lake Parime's first Datacentre was in Scotland, connected to a wind farm. Along with the proposed Clyde Datacentre, it is also working on a similar sized project in North America.
9. Whereas traditional datacentres are used for real time business critical services and therefore need 24x7 guaranteed energy supply, Lake Parime's business model involves use of high-performance computing services for blockchain and cryptocurrency (Bitcoin), data analytics and machine learning (AI) and scientific and economic modelling. These uses are not time critical and can therefore operate in conjunction with renewable electricity generation.
10. Lake Parime was recently recognised in PWC's UK Net Zero Future 50 List of Companies <https://www.pwc.co.uk/issues/esg/pdf/net-zero-future-50-2022.pdf> as UK innovators providing climate change solutions to data processing.
11. Although Contact will not own, operate or manage the Datacentre, it has made this application in its own name and will continue to hold the resource consents, should they be granted, to ensure that it retains responsibility to ensure that the Datacentre operates within the environmental parameters required by its resource consents and otherwise consistently with Contact's culture and values.
12. Contact recognises that blockchain/cryptocurrency is a controversial potential use of the Datacentre for some people. We have certainly had that feedback from some people in the local community.
13. Contact's contract with Lake Parime includes specific Code of Conduct clauses that allow it to terminate the Supply and Lease Agreement with Lake Parime if breached.
14. The need for a new substation has meant that Contact has also entered into an arrangement with Aurora, the local lines company. A Notice of Requirement was lodged

for Aurora in conjunction with the Datacentre resource consent applications and has been processed separately. My understanding is that the Notice of Requirement has been accepted and that Aurora is currently preparing its outline plan.

## **Effects**

15. The application documents described what is proposed. Scoping the applications, the key environmental issues identified were noise and visual appearance. Those matters will be addressed by Ms Paxton and Mr Espie respectively. Contact relies on their expertise as indicating that the effects of the proposed Datacentre will be no more than minor.
16. Mr Curran will likewise address the different elements of the application, and their consistency with the relevant District Plan requirements.
17. I therefore only want to address the positive effects of the proposal from my perspective.
18. Firstly, the ability to operate the Datacentre in conjunction with Clyde Power Station provides Contact with the ability to improve the efficiency and resilience of its power station. The Datacentre can operate when electricity demand is low, and scale back operation (and electricity use) when electricity demand is high.
19. The commercial arrangements entered into with Aurora will benefit the local community because it will facilitate a new substation to replace the existing Clyde/Earnscliffe Substation on a basis that effectively subsidises its construction costs.
20. The Datacentre will be constructed in an area already devoted to electricity infrastructure, reducing adverse effects compared to other greenfield sites.
21. Construction of the Datacentre will require engagement and employment of local contractors in construction and ongoing maintenance roles. While the Datacentre will not have staff onsite, its operator will employ a small number of highly skilled maintenance staff to manage the servers within the Datacentre and associated electronic and electrical services.
22. The ready availability of high-performance computing infrastructure also provides a focus for potential development of new industry in the local area. I don't disagree with the Section 42A report author that it is somewhat speculative as to whether that actually occurs, but I regard that opportunity as a positive in its own right.

23. More broadly this type of Datacentre and interruptible supply arrangement encourage further investment in new renewable generation to meet the Climate Change Commission's objective of a low emissions future for Aotearoa. This type of supply arrangement supports the intermittent renewable generation that will be built in the future as supply to the Datacentre can be curtailed when generation output is disrupted by weather. It also reduces the need for fossil fuelled peaking plant as the electricity used can be re-directed to other users at times of peak demand.

## **Consultation**

24. I have been personally involved with consultation regarding this proposal.
25. Contact first advised nearby neighbours of the proposed project on 11<sup>th</sup> June 2021, with a letter outlining the details of the proposed Datacentre and the new substation. Location plans, approximate layouts and elevations of the buildings were included. We used contact details from Council's rates database, as well as doing a letter box drop. We also emailed Aukaha and Te Ao Marama the same information. A total of four neighbours reached out to me for further information and I met with them to elaborate on the project and hear their concerns. None of the submitters to this consent contacted me following their receiving of this information. One neighbour emailed me detailing his support for such a project. .
26. On the 27<sup>th</sup> August 2021, Contact sent a second letter with supporting information to the same initial neighbours and iwi groups because we had made changes to the project. The Datacentre building design and layout had changed (as a result of changes to Datacentre partners, a reduction in scale of proposed buildings and confirming the need for a noise wall). In this letter we also advised neighbours that we intended to submit our resource consent application the following week (early September). Contact received no communication back in response to this second letter.
27. We have not had any communication with our neighbours since submitting the resource consent application. We've not received any further queries or requests for more information from the neighbours we sent letters to either, nor from those neighbours notified in the resource consent process. Before the hearing, I will be making contact with Mr and Mrs Wilkes to see if they are happy for Mr Espie to go onto their property and undertake a further assessment of the landscape and visual issues raised in their submission.

28. The principal concern raised in the discussions I have had with neighbours, and in submissions, is about noise. Ms Paxton advises that having received further information from Lake Parime regarding the operating characteristics of the Datacentre, additional mitigation is required. She has identified physical changes that would ensure that noise effects remain within the District Plan permitted activity standards if internal modifications cannot achieve the required noise levels. For its part, Contact is committed to ensuring a satisfactory noise outcome. If that means the additional noise mitigation measures Ms Paxton describes are needed, that is what is going to happen.

BM Brinsdon

3 February 2022