Evidence of Daniel Druce

Proposed Plan Change 5A (Lindis: Integrated Water Management)

Introduction

My name is Daniel Matthew Ishtar Druce. I have been employed by Contact Energy Limited ("Contact") as an Environmental Advisor based at the Clyde Dam since February 2006.

I have seventeen years experience in resource management with specific expertise in marine fisheries management and water management. I hold a Master's degree in Science from the University of Canterbury and am a member of the New Zealand Resource Management Law Association (NZRMLA).

My role at Contact includes responsibility for managing Contact's resource consents and environmental responsibilities including compliance, reporting and obtaining required permissions and consents. In particular I have managed a broad range of issues for Contact concerning water since 2006 including both regional planning issues and resource consents.

Scope of Evidence

In my evidence I will set out Contact's general support for proposed Plan Change 5A and, in particular, the overarching objective to set a management regime for the ground and surface water resources of the Lindis Catchment and Bendigo-Tarras Basin.

That said, Contact seeks particular changes to the Plan Change to better recognise the seasonal impact of takes on Contact's hydroelectric operations and to better recognise recent resource consent conditions and Environment Court decisions.

About Contact

Contact is one of New Zealand's biggest energy generators and retailers, providing electricity, natural gas and LPG to around 570,000 customers nationwide and generating around 23 per cent of New Zealand's electricity.

Contact owns and operates two nationally significant hydro-electric power stations at Clyde and Roxburgh as well as the Hawea Dam and Control Gates structure at Lake Hawea. This infrastructure is subject to the National Policy Statement for Renewable Electricity Generation as described later in my evidence.

The construction of the Hawea Dam in the 1950s provide the ability to store and release water from the Lake when electricity demand is high or catchment inflows are low. It greatly enhanced the storage capability, flexibility and resilience of hydro generation on the Clutha River.

Like river catchments entering the main stem of the Clutha, water from the Lindis catchment makes a contribution to the generation output from the dams. Contact has a keen interest in ensuring its sustainable management.

Submission

1. Lindis Catchment and Planning Approach

It is well established that the Lindis River catchment suffers from being 'water short'. While the upper catchment can receive substantial rain and snow fall in winter and spring, the catchment is also one of the driest areas in New Zealand with little rain during summer months.

The Lindis River catchment is also severely over-allocated with a consented instantaneous take rate of just over 4,000 litres per second.[2] This is in comparison of a measured MALF of about 1,348 litres per second (Lindis Peak monitoring site).

The effect of water takes from the Lindis River has a significant impact on surface flows in the middle and lower reaches of the River in irrigation season – generally the River is completely dry between the SH8 bridge and the Clutha confluence, from January to the end of April. In dry seasons as the river can be dewatered for nearly 3km.

Contact supports the steps being taken by ORC in Plan Change 5A to reshape allocation in this dry and over allocated catchment and its efforts to balance the sometimes competing interests of irrigators, electricity generators, iwi, the community and the environment generally.

[2] ORC, 2015. Lindis Catchment and Bendigo-Tarras Basin Information Sheet

2. National Policy Statement for Renewable Electricity Generation

The objective of the National Policy Statement for Renewable Electricity Generation is to provide for the development, operation, maintenance and upgrading of new and existing renewable electricity generation activities.

Decision makers (including the Council in its RMA planning capacity) are required to 'recognise and provide for' the national significance of renewable electricity generation activities, including the national, regional and local benefits.

This includes maintenance of the generation output of existing renewable electricity generation activities and a recognition that even minor reductions can have cumulative and significant adverse effects on renewable electricity generation output.

As noted in Council's 42A report[3], Policy D of the National Policy Statement, 'Reverse Sensitivity', requires decision-makers to the 'extent reasonably possible', to ensure third party activities are managed in a way that avoids reverse sensitivity effects that could impede on existing renewable electricity generation activities.

With the relief sought in our submission and as set out in Appendix One of this evidence, Contact is satisfied that the proposed Plan will better balance the social, cultural & economic values to be derived from the Lindis River while recognising the national significance of hydro-electric generation on the Clutha.

3. Surface Water Restriction and Allocation; Policy 6.4.5, Rule 12.1.4.4

Contact **supports** Policy 6.4.5 (Policies Applying to the management of the taking of water) and Rule 12.1.4.4 (Restricted discretionary activities) as set out in our written submission. This policy and rule allows for (amongst other things):

- the application of minimum flows of take to new resource consents following a collective review of existing resource consents; and
- provides for the use of mining permits as primary allocation until their expiry in October 2021.

This last point effectively sets a transition period for implementing minimum flows and allocations while allowing water users time to understand and adjust to the effects of the Plan Change. This approach also provides some time for affected persons to investigate alternative options available to them.

[3] ORC 2016. Section 42A Report '*Decisions Requested by Submitters.*'

4. Minimum Flows and Dates for Primary and Supplementary Allocation; Schedule 2A & 2B.

Contact supports the general ORC approach to minimum flows set out in Schedules 2A[4] and 2B[5] providing for primary and supplementary allocation takes. However, Contact believes it requires some minor tweaking to get the most efficient outcome, while maintaining effective environmental limits and recognising the national significance of hydro-electric generation on the Clutha.

Schedule 2A currently provides for a primary allocation of 750 l/s in between 1 October to 31 May and 1,600 l/s in 1 June to 30 September.

Schedule 2 B then sets a schedule of supplementary allocation blocks and specific minimum flows. This schedule provides for a minimum flow of 1,600 litres per second between May to November and 2,200 litres per second in the period December to April.

A second supplementary allocation block then provides for a minimum flow of 2,700 litres per second between May to November and 2,100 litres per second in the period December to April.

Contact considers that the flows in Schedule 2A and 2B are appropriate and should not be altered. However, the timing of the proposed flow periods is not as effective or accurate as it could be. We submit that the flow periods should be altered to reflect recognised irrigation demand periods as recognised in recent resource consent conditions[6] and as set out in Schedule 4B.2 (Restrictions on Groundwater Takes) (i.e. 1 May to 31 August).

Adjusting the timing of the water allocation periods will better provide for irrigation during spring and summer when it is in demand, while recognising the importance of in-stream flows for electricity generation during autumn and winter when demand is highest. We think this small adjustment will provide for maximum efficiency in the overall use of water, while maintaining environmental bottom lines.

In the case of Schedule 2A, Contact submits that a minimum flow of 750 l/s instantaneous flow should apply between **1 September** and **30 April** (i.e starting and finishing a month earlier than the Plan currently proposes) before the 'winter' minimum flow of 1,600 litres per second kicks in between **1 May** and **31 August.**

For increased certainty, Schedule 2B should have specific dates for both the first and second supplementary allocation blocks - that is restrictions should apply between **1 May** and **30 November** and then between **1 December** and **30 April.**

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[4] Schedule of specific minimum flows for primary allocation takes in accordance with Policy 6.4.3, and a primary allocation limits in accordance with Policies 6.4.2(a) and 6.4.1A,
[5] Schedule of supplementary allocation blocks and specific minimum flows in accordance with Policy 6.4.9(c).
[6] For example RM13.091 or RM2009.205

Reasons supporting for the date changes are:

- That it is consistent with well-established principles applied by Council and generally accepted by irrigators, Contact and environmental interests for some years now. Resource consents granted since about 2009 to take water from the Clutha/Mata-Au (or the hydraulically connected Bendigo and Lower Tarras Aquifers) have required consent holders[7] to cease water taking from 1 May and 31 September, which helps protect existing hydro-electricity generation operations on the Clutha/Mata-Au.
- The same approach and timing was agreed in relation to the Tarras Water limited ('TWL') application for Clutha River water takes supplying irrigators in the Lindis Crossing / Ardgour area. Here a negotiated restriction based around the 30 April cut-off date allows members of TWL to irrigate late into the season, while giving Contact the benefit of the higher inflows from the Lindis River into the Clutha/Mata-au when it is needed most.
- It is consistent with current irrigation practice and water use patterns. Analysis of water metering records for the 2013/14 and 2014/15 irrigation seasons[8] show that:
  - Approximately half of the measured primary allocation takes from the Lindis River have practically ceased taking water by the beginning of May.
  - Some measured takes that still take water at the start of this month, stop taking water in the second half of the month.
  - The volume of water taken to supply the three main irrigation races (Tarras race, Ardgour Race and Begg-Stacpoole race) is greatly reduced in May.
- I also understand that there are environmental, cultural and ecological reasons relating to issues such as fish passage or cultural connections / mauri why such a limit is more beneficially set at 1 May. I will leave that angle to be developed by other more informed submitters.

5. Groundwater Allocation and Restriction; Schedules 2C, 4A and 4B

Contact **supports** Schedule 2C (Groundwater takes to be considered as primary allocation and subject to minimum flow of specified catchments) and the inclusion of the Lindis Alluvial Ribbon Aquifer.

Contact **supports** Schedule 4A (Maximum allocation limits for groundwater takes from aquifers). In particular, Contact supports the inclusion of the three relevant aquifers: the Ardgour Valley Aquifer, the Bendigo Aquifer and the Lower Tarras Aquifer. These allocation

[7] For example RM13.091 or RM2009.205
[8] ORC 2016. Section 42A Report '*Decisions Requested by Submitters.*'

limits are 0.19, 29 and 18.8 Mm^3/yr (respectively). This is 50% of the calculated maximum extraction.[12]

Contact **supports** Schedule 4B (Restrictions for groundwater takes). Schedule 4B.2 recognises that it is appropriate for aquifers having a hydraulic connection to the Clutha River to place restrictions on new consumptive takes during the winter months when water is of maximum value for hydro-electric generation.

A similar approach was recently upheld by the Environment Court[13] in an appeal on Plan Change 4C (Cromwell Terrace Aquifer) where it was determined that irrigation takes should cease between 1 May and 31 August, that being a time where water is most valuable for hydro-electric generation. The Court also allowed that because the Cromwell Terrace Aquifer was hydraulically connected to Lake Dunstan, additional restrictions on irrigation consents may also be imposed to help maintain lake levels.

Recently granted resource consents (2009-2016) have had an additional restriction on top of the 1 May and 31 August cessation of irrigation. Such consent conditions read that water is not to be taken when flows[14] & levels are at or below 250 cubic metres per second AND the level of Lake Hawea is at or below 338.2masl. In the period 1994-2013 this has occurred on 22 days and all of them occurred during August.

In Contact's original submission we argued that that the **Lindis River Alluvial Aquifer** and the **Ardgour Valley Aquifer** should be added to Schedule 4B.2. Following the 42A report Contact has a better understanding why Lindis River Alluvial Aquifer and the Ardgour Valley Aquifer have not been added to Schedule 4B.2. With an allocation limit of 0.19 cubic metres/year for the Ardgour Valley Aquifer (Schedule 4A) and the Lindis Alluvial Ribbon Aquifer subject to minimum flows (Schedule 2C), Contact will not pursue its earlier comments.

[12] ORC 2010. '*Bendigo and Tarras Groundwater Allocation Study*.'
[13] ENV-2015-CHC-8
[14] As set out in 2001.394, condition 8.

6. Transparency

As per its original submission Contact supports ready transparency for all parties to better understand the level of allocation of available water in the Lindis River and associated aquifers. Such transparency could be achieved by publishing and updating allocation levels on, for example, the Council's internet site.

Daniel Druce
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Contact Energy Limited

Appendix One - Relief Sought

Contact seeks the following:

1. **Retain** Policy 6.4.5 as notified.
2. **Retain** Rule 12.1.4.4 as notified.
3. **Amend** Schedule 2A as follows (struckthrough text indicates text to be deleted; underlined text indicates text to be added):

    - Minimum flow (litres per second – instantaneous flow): 750 (1 ~~October~~ September to 3~~1~~0 ~~May~~ April)
    - Minimum flow (litres per second – instantaneous flow): 1,600 (1 ~~June~~ May to 3~~0~~1 ~~September~~ August)

4. **Amend** Schedule 2B as follows (struckthrough text indicates text to be deleted; underlined text indicates text to be added):

2B Schedule of supplementary allocation blocks and specific minimum flows in accordance with Policy 6.4.9(c)

Catchment (See the B-series maps) & Supplementary Block Number	Minimum Flow (litres per second – instantaneous flow) at the monitoring site(s) (See the B-series maps)	Supplementary Allocation Block (litres per second – instantaneous flow)
Lindis catchment (first supplementary allocation block)	1 May to 30 November: 2200 Ardgour Road (MS 17) 1 December to 30 April: 1600 Ardgour Road (MS:17)	500 500
Lindis catchment (second supplementary allocation block)	1 May to 30 November: 2700 Ardgour Road (MS 17) 1 December to 30 April: 2100 Ardgour Road (MS:17)	500 500

5. **Retain** Schedule 2C as notified.
6. **Retain** Schedule 4A as notified.

7. Provide for transparency and understanding of the level of ongoing allocation in the Lindis River and associated aquifers by publicly notifying such information.

8. Any other consequential changes required to give effect to the relief sought above.