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Report To: Lake Rotorua Stakeholder Advisory Group

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Trading nitrogen discharge allowances

Executive Summary

This report summarises information on the pros and cons of trading nutrient discharge allowances (NDA), outlines the arguments around trading issues specific to the Lake Rotorua rules including the question of delaying trading until 2022 to provide a head start to the Incentives Scheme. It seeks recommendations from the Lake Rotorua Stakeholder Advisory Group. Discussion by StAG requires the consideration of:

- the differences between trading with long and short term entitlements
- the risk that the Incentives Board does not achieve the 100 tonne reduction required
- whether a nitrogen discharge target for 2027 would assist in reaching the NDA

The discussion needs to reference the incumbent position that has been developed through substantial debate and discussion. The incumbent position is sector averages with ranges.

1 Recommendations

That the Lake Rotorua Stakeholder Advisory Group:

1 Receives the report, *Trading Nitrogen Discharge Allowances.*

2 Confirms support for trading nitrogen discharge allowances.

3 Provides recommendations on:

i. Trading of short term entitlements (STE)

ii. Trading of long term entitlements (NDA) prior to 2022 to provide a head start to the Incentives Scheme.

2 Background to trading discussions

Trading nitrogen allowances has been discussed in the context of the Lake Rotorua rules. Robin Connor (Ministry for Primary Industry) has provided general and specific information and advice about trading and how a market could be established for farmers to trade NDA in the Lake Rotorua

catchment. StAG has discussed the options at previous meetings, and while there has been general support for trading, specific recommendations have not been sought.

It is envisaged the information will assist the Lake Rotorua Stakeholder Advisory Group (StAG) in making recommendations regarding whether trading should be part of the Lake Rotorua Integrated Framework, and if so, whether it should include both short term and long term entitlements for nitrogen discharge allowances (NDA), and when trading of long term allowances should be introduced.

2.1 The policy context

Nutrient enrichment in Lake Rotorua has been recognised as a problem for more than 10 years, and has been the subject of research, policy development and practical action by the Regional Council and other stakeholders.

Rule 11 in the Regional Water and Land Plan effectively halted land use intensification in the Lake Rotorua catchment at 2001-2004 levels of nitrogen discharges. Curtailing land use intensification did not solve the problem of nutrient enrichment in the lakes but did prevent it worsening.

The Bay of Plenty Regional Policy Statement (RPS) includes policies and methods that require rules to reduce nitrogen discharges and allocate allowances. The Integrated Framework of rules, incentives and gorse conversion has been developed to meet the requirements within the RPS[1]. The relevant RPS policies are:

- **Policy WL 3B** confirms that the total amount of Nitrogen entering Lake Rotorua shall not exceed 435 tonnes per year
    - *A 270 tonne reduction is required to achieve this (under Overseer Version 5). The Integrated Framework splits this reduction into 140 tonnes to be reduced on-farm, 100 tonnes through the Incentives Fund, and 30 tonnes through gorse conversion.*
- **Policy WL 5B** requires that the capacity of Lake Rotorua to assimilate contaminants be allocated amongst land use activities based on identified principles and considerations
- **Policy WL 6B** requires that nutrient losses be reduced to meet the sustainable limit by means including rules
    - *For Lake Rotorua this limit is 435 tonnes per annum.*
- **Policy WL 6B(c)** defines the nitrogen discharge target for 2022 is 70% of the total reduction required, and requires that no discharges that result in the lake limit being exceeded are authorised beyond 2032
    - *The 2022 70% reduction target equates to 218 tonnes. Of this, 130 tonnes is to be achieved through the Incentives Fund and gorse conversion and 50 tonnes through engineering options, leaving 38 tonnes to be achieved by on-farm reductions in the 2017-2022 period.*

3 The pros and cons of trading

Trading regimes can provide flexibility in resource sharing under scarcity and the efficiencies that sharing can deliver an economy. Markets offer resource users the ability to compare their marginal value for a resource, and make decisions on whether to use more or less of the resource in order to maximise their economic position. Ideally this would enable the resource to be used in the combination of ways that has the highest value to society.

In the Lake Rotorua catchment, trading has the potential to increase flexibility for farmers by enabling short term operational changes as the nitrogen cap reduces, and facilitating longer term decisions to intensify or de-intensify land use. For example, a farmer may choose to remain at the benchmarked level by purchasing NDA, or delay mitigation to fit a preferred timeframe.

[1] Refer Appendix 1 for wording of policies in the RPS

The costs of mitigation for individual farmers can be reduced through trading. Farmers who can reduce at least cost may do so, and sell allowances to those who have higher costs of mitigation. Both are better-off if this occurs, and the rights, which are scarce resources, move to their highest valued use. The ability to sell excess rights may encourage farmers to find new and different ways of reducing discharges.

Essential for an effective and efficient market are resource scarcity, heterogeneity and well-defined rights.

In the Rotorua catchment, resource scarcity relies on the level of the nitrogen cap. Given that the cap is less than current use, NDAs will be scarce.

Heterogenity exists in terms of land use type, soil type and rainfall (for example), and this creates differences in the availability and cost of mitigation options.

Defining the rights of the NDA holder includes what they can do, where, when, and for how long – these aspects must be defined in the rules. Today's discussions will contribute to decisions about defining the rights associated with NDA.

The efficiency gains that markets can bring rely on trading occurring, and so there should be plenty of buyers and sellers, and transaction costs must be manageable (it must be worth trading). Transaction costs include those related to finding someone to trade with and making changes to farm plans and resource consents.

Markets for environmental goods can be expensive to set up and administrate. Trading conditions may dictate the expense does not justify the costs.

Given all of this, the need and desirability of an environmental trading market should be assessed in terms of potential contribution to:

- Achieving the environmental goal. For Rotorua, the 70% reduction by 2022, and the 435 tonne limit by 2032
- Lowering costs of compliance compared with alternative mechanisms (e.g. rules alone)
- Providing regulated entities with an incentive to innovate to create efficiencies
- Lowering regulatory costs (admin, monitoring, enforcement) than alternative mechanisms

The success of a trading regime will be judged through its use: by the number of trades and through higher economic performance under resource constraints.

Table 1: Summary of benefits and costs of trading

Benefits	Costs
Provides a further tool to allow farmers to manage transition to low nutrient state (flexibility)	Requires trading mechanisms to be established
Incentivises efficient resource use	Adds complexity to the rules framework
Potentially the lowest cost for society of achieving reductions and reaching the sustainable limit	Administration costs associated with referencing changed in traded NDA
	Requires that Council develops rules in relation to NDA rights (where, when and how the NDA can be used, how sold, to whom, duration of right etc)
	Increases the need for effective monitoring and enforcement in order to maintain the value of the right

4 Trading short term entitlements (STE)

An option that has been discussed is having a short term entitlement system that would allow nitrogen to be traded on a short term basis through to 2032. Such STEs would proportionally disappear from the market. A framework would have to be developed in the rules to support this mechanism. Examples could include proportional shares of N, shares that equate to an amount of N or a system of trading assessed N against each property.

As stated above:

(1) trading long term NDA may assist a small number of farmers, but for most it will not provide flexibility in achieving the 2022 target, and
(2) the 2022 target is set in the RPS. Even if the Incentives Board is able to achieve the 100 tonne purchase, all farmers still have a commitment to reduce nitrogen discharges. For this, a system for trading short term entitlements (STE) has some merit.

Tradable STEs offer the potential efficiency benefits of NDA trading and are subject to the same challenges. For farmers, tradable STEs would provide operational flexibility in terms of meeting the 2022 targets. Their short term nature suggests they would not be unduly expensive, and at a price that should incentivise farmers who can reduce discharges to do so early. A market for STEs would likely have more participants than an NDA market and would not undermine the 2022 target for the Incentives Board. The summary of benefits and costs produces a mix of both trading and delaying trading options.

Table 2: Summary of benefits and costs of tradable STEs

Benefits	Costs
Provides a further tool to allow farmers to manage transition to low nutrient state. Enables short term and long term flexibility	Requires trading mechanisms to be established
Incentivises efficient resource use both in the short term and the longer term	Adds complexity to the rules framework
Potentially the lowest cost for society of achieving reductions and reaching the sustainable limit	Administration costs associated with referencing changed in traded STE
With the 2022 delay, STEs would enable to benefits of trading (as above) while increasing certainty of reaching the 100t Incentives Scheme target	Requires Council to develop rules in relation to STE rights (where, when and how the NDA can be used, how sold, to whom, duration of right etc)
If in conjunction with NDA trading, would allow more farmers to participate in trading	May need additional support from Council to ensure transaction costs are manageable

4.1 An agreed target for 2027

To enable STE trading a further point would be recommended on the managed reduction pathway. This would be a 2027 target for on-farm reductions. This would allow STE trading on the basis of 5-year blocks. Not having such a point would create a very unconstrained market landscape. As things stand, in 2022 a farmer must identify actions to reach the 2032 NDA in a Farm Nutrient Plan. This requires a farmer to make decisions on a 10 year time horizon. Plans can be changed, but a shorter time horizon may be more practical and provide more certainty at the property level and for the catchment nitrogen reduction target. Having 5-year increments would reinforce the managed reduction intent of the rule framework.

5 Trading prior to 2022 – head start for the Incentives Scheme

In September 2013, StAG put a proposal to Council for an Integrated Framework approach to achieving the targets set in the RPS. This framework comprises on-farm nitrogen reductions through rules, an incentive scheme, and gorse conversion. As part of this, the national and regional community has contributed to a $45m fund to purchase 100 tonnes of nitrogen reductions and deliver advice and support to farmers.

Prior to the StAG's proposal for the Integrated Framework, responsibility for the entire nitrogen discharge reduction rested entirely with landowners, including achieving the 2022 target. Economic analysis suggested that the level of reduction required was a tough and possibly unachievable target without financial assistance (BOPRC, 2013).

Under the Integrated Framework, the Incentives Board, on behalf of the community, has until 2022 to purchase the 70% target of 100 tonnes of permanent reductions of nitrogen discharges. This level of reduction will be a significant challenge. A 'free market' where farmers and the Incentives Board are competing for NDA is likely to further increase this challenge. For some farmers, the ability to trade long term allowances prior to 2022 would provide flexibility to intensify productive activities. However, further intensification before 2022 reduction commitments are met is a risky strategy. NDA trading in this period is likely to undermine the Incentive Board's ability to meet its target.

From Council's point-of-view, the overarching goal is to reach the environmental target. There are many ways of doing this, and a market that allows trading may contribute to this and would provide flexibility to the people affected by the rules. However, the Council has to ensure the 2022 target is met, and open trading is likely to jeopardise this. Delaying open trading of long-term NDAs until 2022 will assist the environmental target being reached, and may provide other benefits.

Central Government has an interest in ensuring that systems for trading long term rights are robust and stable. By 2022 a national framework for trading entitlements for both a water abstraction and nutrient discharges may be available. This would significantly reduce the costs of establishing a trading regime and of trading.

Trading nitrogen discharge allowances in the Taupō catchment

Delaying trading is not always appropriate or desirable. When the nutrient rules were implemented in the Lake Taupō catchment, a free market was immediately established and farmers were able to trade alongside the Lake Taupō Protection Trust. Under the Taupō rules, farmers were able to continue farming as they had been when benchmarked. The sustainable nitrogen limit defined for Taupō was achieved solely through the purchase of NDA. Business-as-usual is not an option for farmers in the Lake Rotorua catchment, and the requirement to reduce from benchmarked nitrogen discharge levels is expected to be a significant driver for trading. The flexibility trading can offer in the short term is more likely to be useful in the allowances that must be reduced in the short term rather than in long term NDAs.

Other relevant differences between the two schemes are the size of the catchments (42,000ha vs 275,000ha), the area and type of farming (Taupō almost all drystock), and the good price for carbon credits at the time of the Taupō scheme implementation. For the Trust, the characteristics of the catchment and the availability of carbon credits were factors contributing to success of the scheme.

Table 3: Summary of benefits and costs of delaying trading until 2022

Benefits	Costs
Increases the certainty of reaching the 435 tonne sustainable limit for the lake	Farmers cannot choose who they sell to in the short term (to 2022). This may create the perception of unfair pricing
Provides more certainty that the Incentives Scheme can purchase the 100t reduction to meet the 2022 target, but does not eliminate the risk of not reaching it	Farmers can't buy NDA, they can only sell. This reduces choice; farmers cannot remain at or increase same levels of discharges prior to the 2022 target
Ensures the community gets the level of reduction agreed in the Integrated Framework	

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APPENDIX 1: RPS policies pertaining to Lake Rotorua rules

Policy WL 3B: Establishing limits for contaminants entering catchments at risk

- For Lake Rotorua the total amount of nitrogen that enters the lake shall not exceed 435 tonnes per annum

Policy WL 5B: Allocating the capacity to assimilate contaminants

- Allocate among land use activities the capacity of Rotorua Te Arawa lakes and other water bodies in catchments as risk to assimilate contaminants within the limits established in accordance with policy WL 3B having regard to the following principles and considerations

a) Equity/fairness, including intergenerational equity;
b) Extent of the immediate impact;
c) Public and private benefits and costs;
d) Iwi land ownership and its status including any Crown obligation;
e) Cultural values;
f) Resource use efficiency;
g) Existing land use;
h) Existing on farm capital investment; and
i) Ease of transfer of the allocation.

Policy WL 6B: Require, including by way of rules, the managed reduction of any nutrient losses that are in excess of the limits established under Policy WL 3B by ensuring that:

(a) Rural production land use activities minimise their loss of nutrients as far as is reasonably practicable by implementing on-farm best management practices;
(b) Any land use change that is required within the Rotorua Te Arawa lakes catchments to achieve the limits takes into account equitable balancing of public and private costs and benefits; and
(c) No discharges shall be authorised beyond 2032 that results in the limit for Lake Rotorua being exceeded. A catchment intermediate target for the managed reduction of nitrogen loss is to be set to achieve 70% of the required reduction from 746t/yr to 435t/yr by 2022.