

**BEFORE THE INDEPENDENT HEARINGS PANELS APPOINTED TO HEAR AND MAKE  
RECOMMENDATIONS ON SUBMISSIONS AND FURTHER SUBMISSIONS ON PROPOSED CHANGE 1  
TO THE REGIONAL POLICY STATEMENT FOR THE WELLINGTON REGION**

**UNDER** Schedule 1 of the Resource Management  
Act 1991 (the Act)

**IN THE MATTER OF** Hearing Submissions and Further  
Submissions on Proposed Change 1 to the  
Regional Policy Statement for the  
Wellington Region

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**STATEMENT OF SUPPLEMENTARY TECHNICAL EVIDENCE OF  
GIJSBERTUS JACOBUS (JAKE) ROOS**

**ON BEHALF OF WELLINGTON REGIONAL COUNCIL**

**HEARING STREAM 3 – CLIMATE CHANGE**

**22 AUGUST 2023**

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## **INTRODUCTION**

- 1 My full name is Gijsbertus Jacobus Roos, known as Jake Roos. I am Acting Climate Change Manager at Greater Wellington Regional Council.
- 2 I have read the respective evidence of:
  - 2.1 Elizabeth McGruddy on behalf of Wairarapa Federated Farmers (WFF).
  - 2.2 Roger Scott Lincoln on behalf of Dairy New Zealand (DairyNZ).

## **QUALIFICATIONS, EXPERIENCE, CODE OF CONDUCT**

- 3 My qualifications and experience are set out in paragraphs 5-6 of my Technical Evidence for Hearing Stream 3 - Climate Change, dated 7 August 2023. I repeat the confirmation given in that report that I have read and agree to comply with the Code of Conduct for Expert Witnesses.

## **RESPONSES TO EXPERT EVIDENCE**

### **Elizabeth McGruddy (for Wairarapa Federated Farmers)**

- 4 In paragraph 44 of her evidence, Ms McGruddy highlights part of my technical evidence where I note that work on the Wellington Regional Emissions Reduction Plan (RERP) is intended to include development of sector targets. I have later found out that this is not the case. However, the RERP work will explore emissions reduction opportunities at a regional level, and this work could be used to inform future changes to the RPS, including setting sector-specific targets.
- 5 Ms McGruddy has provided in paragraphs 53 -59 of her evidence a calculation of what each sector of the regional economy may need to do to meet the 2030 target in Objective CC.3. She has applied a 50% reduction to each sector's gross emissions in 2018-19 (as given in the Wellington Region GHG Inventory<sup>1</sup>) and has arrived at a figure of 2 million tonnes CO<sub>2</sub>e of net sequestration by forests to close the gap with the net emissions target in Objective CC.3. I have arrived at a similar number of 1.9 million tonnes CO<sub>2</sub>e, but only when the gross emissions reductions from the transport sector are set to a 35% reduction and 0% to gross agricultural emissions, in alignment with the notified version of RPS Change 1 Objective

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<sup>1</sup> [Greater Wellington — Monitoring emissions \(gw.govt.nz\)](https://www.gw.govt.nz/monitoring-emissions/)

CC.3 and Policy CC.5 – the latter of which set direction to be no increase in gross agricultural emission.

- 6 However, this amount of net sequestration by forests is not a doubling of sequestration by forests as asserted by Ms McGruddy in paragraph 59 of her evidence, it is an 8% increase, well within the range of sequestration by forests in the Region for each of the last 4 years. See the row 'forestry' in the table below.

tCO <sub>2</sub> e	2018/19	2019/20	2020/21	2021/22	Example reduction compared to 2018/19 for 2030	Projected emissions in 2030
Stationary Energy	684,024	696,492	825,205	651,841	50%	342,012
Transport	1,627,651	1,429,443	1,416,810	1,337,293	35%	1,057,973
Waste	240,937	222,576	216,072	203,811	50%	120,468
IPPU (Industry)	151,798	151,335	150,740	150,486	50%	75,899
Agriculture	1,529,572	1,619,266	1,509,193	1,509,193	0%	1,529,572
Forestry	-1,735,345	-2,098,374	-2,281,047	-2,281,047	-8%*	-1,876,606

<b>Total (net) incl. forestry</b>	2,498,636	2,020,739	1,836,974	1,571,578	50%	1,249,318
<b>Total (gross) excl. forestry</b>	4,233,981	4,119,113	4,118,021	3,852,625	26%*	3,125,924

**Table 1 – GHG emissions inventory results for the Wellington Region and an example projection for 2030. Reduction percentages marked with a \* are derived by calculation from the other reduction percentages.**

- 7 The scenario in Table 1, which is fully aligned with Objective CC.3 and Policy CC.5, does not require the agricultural sector in the Region to reduce its emissions at all. Therefore, I am unsure how Ms McGruddy has reached the conclusion in paragraph 58 of her evidence that “This implies Council anticipate – or intend – that livestock numbers in this region should reduce by around 700,000 by 2030”. From my involvement in Objective CC.3 and Policy CC.5, this has never been the intent of Greater Wellington Regional Council.
- 8 The scenario I have shown in table 1 serves to illustrate one way in which Objective CC.3 may be achieved and to explore Ms McGruddy’s claim in paragraph 58 of her evidence. There are unlimited other combinations, each with their own advantages and disadvantages and degrees of practicality. Clearly if there were greater levels of reduction from the transport and agriculture sectors, the other sectors would need to reduce less than I have shown in the example in table 1. But regarding what combination would be the most achievable, I reiterate a statement from my technical evidence:

Paragraph 81: *“What is achievable in practice depends on not only what is physically possible but the political priority and resources that are devoted to the goal and the level of public support there is to sustain the effort. It is not possible to know all these factors in advance of setting an emissions reduction target. But our leaders frequently need to make decisions with imperfect information that balance competing interests.”*

- 9 Ms McGruddy states in paragraph 53 of her hearing statement that: *“Council propose that industry be excluded from the regional target”*. That is not correct. The Council’s proposed amendments to Policy 2 concerning industry do not exclude the sector from the regional emissions target in Policy CC.3
- 10 In paragraph 62, Ms McGruddy says that WFF is confused by the reference I made that Change 1 specifies a low emissions reductions target for the agricultural sector (*“...relatively low gross emissions targets for transport and agriculture”*) in paragraph 75 of my technical evidence. To clarify, I am referring to Policy CC.5, which in the notified version of Change 1 required no increase to gross agricultural emissions. Mr Wyeth in his section 42A report for the Climate Change: Agricultural topic recommends an amendment to Policy CC.5 to require a reduction in agricultural emissions of unspecified magnitude. The earlier version of the wording was in effect a target. The version of the policy recommended by Mr Wyeth arguably falls outside the definition of a target, and this may have caused the confusion. However, I consider my characterisation of both old and new versions Policy CC.5 as representing ‘low’ emissions reductions requirements, to be reasonable, given they are both considerably lower than the net emissions targets in Objective CC.3.
- 11 In paragraph 63, Ms McGruddy states that Auckland Council and Wellington City Council’s community emissions reduction plans are non-statutory, which is correct. She implies that this means that they are therefore able to be aspirational, and states that *“but different disciplines apply in the RMA context”*. However, it is my understanding that the process each council went through to devise their targets was guided by sound science. In the case of Wellington City’s target, they chose to take a ‘fair share’ approach that recognises responsibility for New Zealand’s higher historic emissions, and therefore arrived at a target for a deeper cut to emissions than the IPCC’s median emissions pathway that provides a 50% chance of limiting global warming to 1.5°C with low or no overshoot.
- 12 Ms McGruddy provides no rationale to support her view that GHG reduction targets in statutory documents should be weaker than those in non-statutory documents. These

emissions reduction plans and RPS Change 1 Objective CC.3 have the same intent – to manage activities to make a useful and fair contribution to meeting the goals of the Paris Agreement. In all three cases the targets set are the result of political process with scientific input. The only difference is emitters may feel non-statutory targets can be disregarded without consequence, which has been borne out in court this year in the case of Auckland Council’s climate plan Te Tāruke-ā-Tāwhiri (TTT)<sup>2</sup>.

- 13 Ms McGruddy also states in paragraph 63 of her hearing statement that “Auckland (with 5% agriculture) in fact sets split-gas methane targets for agriculture”. This is not correct. TTT ‘s main community-wide emissions reduction target<sup>3</sup> is an ‘all-gases’ target. TTT specifies methane emissions reduction targets for livestock, along with emissions reduction targets for other sectors, but their agricultural sector emissions are not excluded or split from their main, overarching target.

**Roger Scott Lincoln (for DairyNZ)**

- 14 Mr Lincoln outlines the rationale for setting targets for methane emissions, separate from long lived GHGs, including the global temperature response to changing rates of GHG emissions. I do not dispute the science of this, as clearly reflected in my technical evidence which covers much of the same territory. Where we part company is the practical advantages of taking a ‘split gas’ approach. In my view they are minimal.
- 15 In paragraph 40, Mr Lincoln draws attention to a paper by Allen *et al* in the journal Nature which recognises the separate contributions to global warming of long-lived and short-lived gases when setting targets and monitoring progress. Presumably this evidence is being raised to support Ms Hunter's evidence for DairyNZ in which she proposes amendments to Objective CC.3 to include split-gas targets. The paper describes a method for identifying the contribution of ‘long-lived climate forcers’ and ‘short-lived climate forcers’ (i.e., the various greenhouse gases) to global warming separately. The focus of this paper is to help the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat more accurately estimate the effect on global temperatures of all countries’ Nationally Determined Contributions – NDCs (which are emission reduction targets) being

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<sup>2</sup> <http://www6.austlii.edu.au/nz/cases/NZHC/2022/1620.html>

<sup>3</sup> [Auckland Council’s climate plan Te Tāruke-ā-Tāwhiri](#)

achieved in aggregate. They do this by encouraging countries to provide more detail on how they are planning for their emissions of specific GHGs to change in the future.

- 16 The matters addressed in this paper are not relevant to the development of a subnational or regional emissions target, such as Objective CC.3 in RPS Change 1. Unlike the process that is undertaken at the global level by the UNFCCC Secretariat out of necessity, the New Zealand Government has not determined the national emissions reduction pathway by adding together regional emissions targets and pathways – it determines its preferred pathway and NDC itself at the national level. Whether and how subnational entities, including local authorities, set their own emissions reduction targets has no bearing on how the government communicates its NDC to the UNFCCC secretariat, and therefore has no bearing on the accuracy of global emissions and temperature projections derived from those NDCs. This underscores my point that using a split gas approach is not necessary from a practical point of view.
- 17 Regarding Mr Lincoln’s point in paragraph 43 (*“For this reason, methane does not need to reach net zero and should be treated differently”*), I have addressed this in my technical evidence that emissions of short lived GHGs themselves, such as methane, do not need to be reduced to zero, and in fact in the case of biogenic methane, they cannot. But to his point that methane emissions do not need to be “net zero”, that is, their warming effects offset by removals of CO<sub>2</sub> from the atmosphere, this is debatable at best. The latest IPCC report shows that total global GHG emissions, including methane as measured using GWP<sub>100</sub>, do become net negative in the latter part of the century in many of the emissions scenarios they have used: unsurprisingly in the ones that have a higher likelihood of meeting the Paris Agreement goals<sup>4</sup>. Deeper reductions in all types of GHGs will give a better chance of achieving the Paris Agreement goals. Creating a cooling effect by reducing the rate of methane emissions will be highly advantageous in meeting these goals, as recognised by the New Zealand Government when it joined the Global Methane Pledge.
- 18 Therefore, whether methane emissions should or should not be part of a net-zero goal is essentially a debate regarding how much risk society should tolerate with respect to not meeting the Paris Agreement goals and destabilising the global climate further. I do not consider that the evidence Mr Lincoln provides is sufficient to justify the need for ‘split gas’ targets in these circumstances.

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<sup>4</sup>[https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC\\_AR6\\_WGIII\\_SummaryForPolicymakers.pdf](https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_SummaryForPolicymakers.pdf) Figure SPM 5

**DATE:**

**22 August 2023**

**Gijsbertus Jacobus (Jake) Roos**

**Acting Climate Change Manager, Greater  
Wellington Regional Council**