



Low-Emissions Economy
New Zealand Productivity Commission
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TO New Zealand Productivity Commission

SUBMISSION ON: The Low-Emissions Economy: Draft Report – April 2018

FROM: Watercare Services Limited (“**Watercare**”)

ADDRESS FOR SERVICE: The address for service specified below

DATE: 8 June 2018

Watercare could not gain an advantage in trade competition through this submission.

- **INTRODUCTION**

1.1 Watercare’s purpose and mission

Watercare Services Limited (“**Watercare**”) is New Zealand's largest provider of water and wastewater services. Watercare is a council-controlled organisation under the Local Government Act 2002 and is wholly owned by the Auckland Council.

Watercare is a company registered under the Companies Act 1993.

Watercare provides integrated water and wastewater services to approximately 1.4 million people in Auckland. A total of 360 million litres of water is treated each day at 15 water treatment plants and distributed via 89 reservoirs and 90 pump stations to 450,000 households, hospitals, schools, commercial and industrial properties. Watercare’s water distribution network includes more than 9,000 km of pipes. The wastewater network collects,

treats and disposes of wastewater at 18 treatment plants and also includes 7,900 km of sewers.

As a council-controlled organisation ("**CCO**") under the Local Government Act 2002, and a substantive council-controlled organisation under the Local Government (Auckland Council) Amendment Act 2009 ("**Auckland Act**"), Watercare has certain obligations. For example, Watercare must achieve its shareholder's objectives as specified in the statement of intent, be a good employer and exhibit a sense of social and environmental responsibility.¹

As the CCO that provides water and/or wastewater services in Auckland,² Watercare is also required to manage its operations efficiently with a view to keeping overall costs of water supply and wastewater services to its customers (collectively) at minimum levels, consistent with effective conduct of the undertakings and maintenance of long-term integrity of the assets. Watercare must also not pay a dividend.³ Watercare must also give effect to relevant aspects of the Council's Long Term Plan, and act consistently with other plans of the Council.⁴

As a substantive CCO, Watercare has a number of statutory accountability mechanisms, including the requirement to prepare and maintain a statement of intent,⁵ undergo performance monitoring, provide an annual report, give effect to the Long Term Plan, and act consistently with other specified plans and strategies of the Council.

- **SUBMISSION**

2.1 General

Watercare is pleased to have this opportunity to make a submission to the New Zealand Productivity Commissions ("**NZPC**") "*Low-emissions economy: Draft report*" ("**the Draft Report**"), and understands that the final report is expected by August 2018.

Watercare acknowledges that the NZPC's modelling indicates that New Zealand can achieve low greenhouse gas ("**GHG**") emissions by year 2050 via:

- Large-scale new forestry plantation;
- The electrification of transport; and,
- Changes to the structure and methods of agricultural production.

¹ Local Government Act 2002, s 59.

² As defined in section 4 of the Local Government (Auckland Council) Act 2009.

³ Local Government (Auckland Council) Act 2009, s 57.

⁴ Local Government (Auckland Council) Act 2009, s 58.

⁵ This statement of intent covers a three year period, and requires Watercare to publicly declare its activities and intentions for the year, and how this will achieve its objectives: it provides an opportunity for shareholders to influence the organisational direction; and a basis for accountability for directors and shareholders. It also carefully considers section 58 of the Local Government Act 2009, which requires Watercare to give effect to relevant aspects of the Council's Long Term Plan, and each year, prior to the statement of intent review, Watercare receives a letter of expectation from the Mayor which significantly influences Watercare's direction and allows for alignment with the Council.

Watercare also understands that the key message in the Draft Report is that an effective system of emissions pricing, that could be included in the New Zealand Emissions Trading Scheme (“**NZETS**”), should form the centrepiece of a strategy to reduce emissions by creating a price signal to drive innovation.

2.2 Submission Point: Q14.1 – “Should the New Zealand Emissions Trading Scheme be extended to cover wastewater treatment plants?”

2.2.1 Watercare’s climate change action

For some time now, Watercare has had an objective to be at the forefront of climate change action in New Zealand and has implemented the actions described below.

Watercare’s “Climate Change Adaptation and Mitigation Strategy” is currently being drafted in accordance with our Fully Sustainable strategic priority and United Nations Sustainable Development Goal 13 ‘Climate action’.

We increasingly view our wastewater treatment plants as “resource recovery centres”, in a circular economy model. This involves moving away from a linear process (take/treat/dispose) for the treatment of effluent. It is now about harvesting energy, nutrients and water to design waste out, including greenhouse gas.

Watercare has included Net Zero Carbon 2050 in the company’s Energy policy and has steps in place to achieve this target, including energy neutrality at the Mangere and Rosedale wastewater treatment plants by 2025. Energy neutrality involves changing the plants’ processes in order to reduce their energy requirements while increasing energy generation capacity (e.g. methane capture) to achieve self-sufficiency. These two plants treat 93% of the wastewater collected by Watercare. For a plant the size of Mangere WWTP, energy neutrality will be a world first. The energy neutrality programme is in the implementation phase.

Watercare is a signatory to the Climate change statement from a group of business leaders representing 50% of New Zealand’s business generated emissions and coordinated by the Sustainable Business Council to be released in June 2018. Watercare also committed to the electrification of 100% of its headquarters vehicle fleet by the end of 2019 as part of the 2016 business pledge of 30 large New Zealand organisations. To date, we have shifted 30% of the headquarters fleet to electric, are on track to achieve 100% in 2019 and are expanding the implementation of charging stations to our plants. Our energy efficiency programme kicked off in 2016 is well underway. Projects implemented already or planned for the next months will deliver 10GWh of yearly efficiency gains. The Hunua ranges revegetation project aims at turning areas previously operated as commercial forestry into a native forest. This will involve growing eight million trees on the land operated by Watercare over the next 30 years, capturing a significant amount of carbon.

2.2.2 Watercare’s greenhouse gas emissions

Watercare’s greenhouse gas emissions have been reported publicly for many years through our annual report, with a more in depth update in 2015 through an online Energy and Greenhouse gas supplement. Since there is no standard methodology for the accounting of greenhouse gas emissions from wastewater treatment in New Zealand, Watercare developed its accounting tool in house in 2009 using IPCC and GHG protocol guidelines. The tool was reviewed and significantly improved by consultants in 2014, including an increase in the scope of emission sources included. Watercare’s accounting tool was discussed and shared with Water New Zealand and the Ministry for the Environment in March 2018 to contribute to the thinking on greenhouse gas accounting methodologies.

In 2016/2017, a total of 23,811 tonnes of CO₂ equivalent was generated by the wastewater treatment operations of Watercare, with the following breakdown:

Scope	Category	Emission source	Value	Unit
Scope 1	Stationary combustion	Natural gas use at WWTPs	3,310	t CO ₂ e
		Biogas combustion	112	t CO ₂ e
	Process Emissions	Wastewater treatment process	4,538	t CO ₂ e
		Deposition of biosolids	4,615	t CO ₂ e
	Sub-total Scope 1		12,575	t CO ₂ e

Scope	Category	Emission source	Value	Unit
Scope 2	Purchased electricity	Electricity imported at WWTPs	5,275	t CO ₂ e
	Sub-total Scope 2		5,275	t CO ₂ e

Scope	Category	Emission source	Value	Unit
Scope 3	Purchased goods and services	Lime used at WWTPs	5,962	t CO ₂ e
	Sub-total Scope 3		5,962	t CO ₂ e

Total scopes 1, 2 and 3: 23,811 t CO₂e

No carbon dioxide emissions are reported under the wastewater category in the draft report, only methane and nitrous oxide, which means that its scope must exclude energy use. Also, biosolids from the wastewater treatment process are likely to be counted under the solid waste category in the national inventory. As a result, our understanding is that only a fraction of our wastewater treatment emissions reported above is considered under the “wastewater” category in the draft report, namely the “wastewater treatment process” line of the table above, at 4,538 tCO₂e. These wastewater treatment process emissions used to be in the order of 125,000 tCO₂e a year until 2003, when Watercare implemented a major upgrade of the Mangere plant involving changes in processes and upgrade of the co-generation facility.

2.2.3 The Emission Trading Scheme

Watercare agrees that action in the reduction of emissions is not only justified, but needs accelerated programmes and initiatives. Therefore, we support the general approach and theme of the Draft report and the pursuit of reduced greenhouse gas emissions. Given the uncertainty around wastewater treatment emissions however, we think it is too early to state that treatment plants should be included in the ETS. The uncertainty revolves around methodology and scope.

There is no nationally agreed accounting methodology for greenhouse gas emissions in wastewater treatment plants. The guidance for voluntary emissions reporting published by the Ministry for the Environment does not cover wastewater treatment. Each utility reporting their emissions does it in a way that they have developed with the best information they could find. We believe it is not suitable to implement a legally binding scheme for wastewater emissions when the understanding of those emissions is limited nationally.

Regarding scope, our understanding of the Draft report is that for municipal wastewater utilities, the ETS would cover only the wastewater treatment process emissions reported in scope 1 (mostly methane, with a smaller portion of nitrous oxide). Watercare is working on emission reduction at its wastewater treatment plants, starting with the energy neutrality programme. While it will also impact process emissions, the significant gain from energy neutrality is through the elimination of CO₂ emissions from purchased electricity located in scope 2. This order of priority is consistent with the signals received from central government that carbon dioxide emissions are more critical to eliminate than methane emissions. The ETS would give us the opposite price signal.

Watercare will continue to research global development in this area and progress towards Net Zero 2050 as stated in its Energy policy. We will carry on working collaboratively to contribute to emission reductions in the industry and support Auckland Council in the development of Auckland Council's Auckland Climate Action Plan. The draft report suggests "engagement with interested parties on the draft report" between May and August. We welcome this opportunity to clarify the next steps for emission reduction in the wastewater sector in New Zealand and will await your contact, should you wish to work with us on this matter.

2.3 Relief sought

Given the current uncertainty around the wastewater treatment plant emissions, Watercare submits the following:

- Wastewater Treatment Plants should not be included in the expanded NZETS;
- That Central Government should lead the development of a nationally agreed accounting methodology for greenhouse gas emissions for wastewater treatment plants;
- That Central Government should encourage all major municipal wastewater treatment plant operators to report greenhouse gas emissions annually to track changes over time; and
- That Central Government should work with the wastewater industry on the future steps for emission reductions within the wastewater sector.

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