

Melbourne Water Innovation Competition – Reducing Scope 1 Greenhouse Gas Emissions

Responses to Questions Received between 08 November 2018 and 13 November 2018

NOTE: Some similar questions have been consolidated into a single question and answer.

Q 74. What is the water quality of the polishing/maturation ponds of the WTP? Could you please provide quality in terms of COD, TSS, DO, Nitrogen concentration, Phosphorous concentration, pH and turbidity?

Please see the summary table, below, for typical discharge parameters at the ETP and WTP, where available:

Parameter	Measure	Unit	WTP	ETP
cBOD	Annual median	mg/L	1.4	2.0
TSS	Annual median	mg/L	16	1
DO	unavailable	mg/L	unavailable	unavailable
Total N	Annual average	mg/L	8	2
Total P	Annual median	mg/L	8.7	5.9
pH	Annual median	pH	unavailable	7.3
Turbidity	Annual median	NTU	unavailable	0.35

For WTP this discharge quality is a flow-weighted average of various lagoon systems.

Q 75. Is the sludge drying process included in the scope of the innovation competition?

Yes. Melbourne Water is interested in any ideas, technologies or novel process solutions that would materially reduce Scope 1 greenhouse gas emissions from its wastewater treatment plants.

Q 76. What technology is currently used for sludge drying at Melbourne Water's ETP and WTP?

Please refer to Melbourne Water's response to "Question 28", in "Innovation Competition FAQ responses 30 October 2018" on the website <http://www.melbournewater.com.au/innovation-competition>

Q 77. Can you provide more information on the analysis values and distribution of the emissions at the wastewater treatment plants?

Please refer to Melbourne Water's response to "Question 61", in "Innovation Competition FAQ responses 7 November 2018" on the website
<http://www.melbournewater.com.au/innovation-competition>

Q 78. Can you please confirm the total emissions for WTP and ETP, noting the different figures documented in the competition brief (188,000 t/yr CO₂e) and RFS (203,744 t/yr CO₂e)?

Please refer to Melbourne Water's response to "Question 65", in "Innovation Competition FAQ responses 7 November 2018" on the website
<http://www.melbournewater.com.au/innovation-competition>

Q 79. Do the sludge drying pans in the WTP emit any methane? It was stated that the sludge drying pan in ETP emit methane on the order of 42,984 t/yr CO₂e. What is it about the sludge drying pans in the WTP that make them emit 0 t/yr CO₂e?

Please refer to Melbourne Water's response to "Question 65", in "Innovation Competition FAQ responses 7 November 2018" on the website
<http://www.melbournewater.com.au/innovation-competition>

Q 80. What would be the additional capacity that your digesters would be able to handle in tonnes/yr of waste treated?

Additional digester capacity is unavailable at the ETP. At the WTP some very limited capacity may be available in the anaerobic lagoons, depending on requirement. Please refer to Melbourne Water's response to "Question 70", in "Innovation Competition FAQ responses 7 November 2018" on the website
<http://www.melbournewater.com.au/innovation-competition>

Q 81. Are Scope 1 emissions from vehicles included in the scope of the Innovation Competition?

No. While Melbourne Water desires to reduce greenhouse emissions from all sources, emissions from vehicles are excluded from this Competition.

Q 82. What is the supernatant flow and the composition at the ETP, more specifically the NH₄-N and PO₄-P content?

The ETP supernatant is drawn off the sludge drying pans and is pre-treated in supernatant holding basins with limited surface aeration prior to returning to the head of the treatment process. The flow returned to the treatment plant contains about 840 mg/L TKN and 155 mg/L Phosphorous. The return supernatant flow rate is about 1.7 ML/d.

Web Page: <http://www.melbournewater.com.au/innovation-competition>
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