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Ms Colleen White
Acting Deputy Secretary, Regions, Environment, Climate Action and First Peoples
Department of Energy, Environment and Climate Action
Level 1, 8 Nicholson Street
EAST MELBOURNE VIC 3002

14 December 2023

Dear Ms White

REGULATORY IMPACT STATEMENT FOR THE CIRCULAR ECONOMY (WASTE REDUCTION AND RECYCLING) (WASTE TO ENERGY SCHEME) AMENDMENT REGULATIONS 2024

I would like to thank your staff at the Department of Environment, Energy and Climate Action (the Department) for working with the team at Better Regulation Victoria on the preparation of the Regulatory Impact Statement (RIS) for the Circular Economy (Waste Reduction and Recycling) (Waste to Energy Scheme) Amendment Regulations 2024 (the proposed Regulations).

As you know, the Commissioner for Better Regulation provides independent advice on the adequacy of the analysis provided in all RISs in Victoria. A RIS is deemed to be adequate when it contains analysis that is logical, draws on relevant evidence, is transparent about any assumptions made, and is proportionate to the proposal's expected effects. The RIS also needs to be written clearly so that it can be a suitable basis for public consultation.

I am pleased to advise that the final version of the RIS received by us on 14 December 2023 meets the adequacy requirements set out in the *Subordinate Legislation Act 1994*.

Background and Problems

Waste to energy (WtE) is any technology that is applied to waste to generate energy resources such as electricity, gas, and liquid fuels. This includes processes that generate heat, steam, fuels, and electricity from combustible waste, and can include thermal and biological waste to energy technologies.

Thermal WtE activity in Victoria is currently regulated by the Circular Economy (Waste Reduction and Recycling) (Waste to Energy Scheme) Regulations 2023, under the *Circular Economy (Waste Reduction and Recycling) Act 2021* (CE Act). Thermal WtE is defined by the CE Act as a thermal process used “to recover energy from waste in the form of heat” or “to produce fuel from waste”. Under Victoria’s Waste to Energy Scheme (WtE Scheme), WtE operators who had appropriate approvals prior to 1 November 2021 are eligible for ‘existing operator licences’ to process a certain amount of permitted waste under this scheme and are known as ‘existing operators’ (EOs).

Permitted waste is waste which cannot reasonably be subject to any further sorting or recycling and would otherwise be landfilled. This is in contrast to exempt waste, which does not require a licence under the WtE Scheme to process, and banned waste, which must not be used in thermal WtE facilities in Victoria. Exempt waste includes mostly organic matter which stems from agricultural and forestry by-products, which cannot easily be recycled. Banned waste is all waste apart from permitted and exempt waste, which captures waste that is recyclable or would be recyclable with a reasonable amount of further sorting.

The Department explains that WtE can support Victoria’s circular economy objectives by extracting value out of waste (in the form of energy) which would otherwise be sent to landfill. WtE can generate far more energy output than is typically generated from landfill gas capture from the same waste.

Once the already licensed existing operators’ WtE facilities come online, there will still be additional landfilled waste which would be better suited for processing in WtE. The Department explains that the value of additional WtE facilities should be balanced with the risk of over-investment in WtE capacity, which is costly and is usually combined with long-term supply contracts (e.g. 15 years). If there is an over-investment in WtE capacity, this investment may commit waste streams that could be recyclable in the future to WtE facilities. This may reduce the commercial viability of future recycling projects, leading to under-investment in recycling infrastructure in the future, and therefore less recycling than would otherwise be the case.

To avoid over-investment in WtE facilities, the CE Act provides that the amount of permitted waste processed in new WtE facilities in Victoria be capped in regulations.

Options

For a cap licensing scheme, three cap limits for permitted waste have been analysed in the RIS:

1. a cap of 500,000 tonnes,
2. a cap of 1 million tonnes, and
3. a cap of 2 million tonnes.

For the fees associated with the cap licensing scheme, three fee structures for cap licence applications were analysed in the RIS:

1. A flat fee structure – where all applicants pay the same fee,
2. A differentiated fee structure – where small applicants (up to 30Kt capacity) pay a smaller fee, and
3. A sliding scale fee structure – where applicants pay a fee based on a percentage of the value of development costs up to a capped amount.

Fees for expressions of interest and applying to decrease an allocated cap amount are the same across options as these fees are relatively small in magnitude, and the costs associated with processing them are similar regardless of facility size.

Impact Analysis

The RIS assesses the three cap options through a mix of quantitative and qualitative analysis against a base case of these Regulations not being made, and therefore no additional WtE facilities being permitted in the future.

The Department's quantitative analysis in the RIS relies on a material flow model, which projects waste production and recovery (recycling) trends out to 2050. The Department explains that existing and announced policies and programs including: the container deposit scheme, reforms to kerbside waste, and the introduction of mandatory waste sorting by businesses are assumed to improve the recovery rates of specific materials. According to the Department the aggregate effect of this is the improvement of the economy-wide recovery rate from about 71 per cent in 2023-24 to about 75 per cent in 2030-31. From 2030-31 to 2049-50 the Department uses a broad recovery rate improvement assumption across all materials, intended to capture future: policy changes, recycling investment, technological development, and behaviour change. This assumption improves the recovery rate of the currently least recovered materials (e.g. plastic) more than it increases the recovery of the currently most recovered materials (e.g. tyres). According to the Department the aggregate effect of this is the improvement of the economy-wide recovery rate from about 75 per cent in 2030-31 to about 84 per cent in 2049-50.

The material flow model estimates the tonnes of each material that end up being landfilled, recycled, or used as a feedstock for WtE. It does this by assuming that WtE facilities capable of processing the full amount of the cap are operating by 2027-28, and that these facilities always use the entire cap through to 2049-50. The cap amount is filled by drawing on the following waste types in the proportion in which they are generated in the following order of priority:

1. permitted waste until this is exhausted; then
2. exempt waste until this is exhausted; and finally
3. otherwise recovered material.

The model draws on otherwise recovered material to demonstrate the impact of foregone recycling, if there was over-investment in WtE facilities leading to less

investment in recycling infrastructure than in the base case of not setting a cap, and therefore lower rates of recycling in the long-term. In reality, WtE facilities will not be allowed to process waste that has been separated and can be practicably recycled.

Only Option 3 results in waste being used as feedstock for WtE that would otherwise have been recovered under the base case. In total, this results in 8.2 million tonnes of waste being processed through WtE facilities that would otherwise have been recycled up to 2050. This is associated with additional land use of 4,445 km² and additional water use of 82.6 GL associated with virgin material extraction and processing (e.g. timber forestry) compared to recycling processes. The Department notes that due to data limitations these are based on a comparison of landfill to recycling, but that it believes this reasonably approximates the environmental impacts of additional virgin material extraction and processing, while noting there are other unquantified environmental impacts.

The model quantifies some of the other impacts associated with the change in material fates associated with the options, that is, materials being processed by WtE rather than being landfilled or recycled, which are summarised below:

| Impacts | Option 1 500kt cap | Option 2 1mt cap | Option 3 2mt cap |
|--|-----------------------|---------------------|---------------------|
| Additional average annual energy generation from waste (GWh) | 636.4 | 1,254.7 | 2,450.4 |
| Total avoided landfill throughput up to 2050 (m ³) | 7,900 | 15,567 | 25,407 |
| Avoided landfill throughput in 2049-50 (Kt) | 500 | 1,000 | 1,379 |
| Total greenhouse gas emissions avoided up to 2050 (Mt CO ₂ e) | 5.2 | 10.2 | 19.6 |
| Value of total avoided greenhouse gas emissions up to 2050 (\$M NPV) | 650 | 1,278 | 2,448 |

The RIS also includes financial transfers between sectors of the economy associated with the Options. The Department explains that it has made the simplifying assumptions that:

- energy prices are not affected by the amount of WtE processed under the cap;
- 'gate fees' waste producers pay to waste processors are the same for landfill, WtE and recyclers; and
- the landfill levy remains at its current level (in real terms).

The effect of these assumptions is that all financial flows between sectors are transfers, with no net effect on the economy. These transfers are summarised below.

The Department notes that, while the Government's waste levy revenues would be reduced by building additional WtE capacity, that it is the policy of the Government to increase diversion from landfill, with a target of 80% diversion by 2030. So the meeting of this target already entails lower landfill levy revenues.

| Financial transfers (\$m NPV) | Option 1 500kt cap | Option 2 1mt cap | Option 3 2mt cap |
|--|-------------------------------|-----------------------------|-----------------------------|
| Decrease in landfill operator revenue | (473) | (923) | (1,521) |
| Decrease in recycler operator revenue | - | - | (774) |
| Decrease in Government waste levy revenue | (874) | (1,708) | (2,836) |
| Decrease in grid generator energy export revenue | (610) | (1,194) | (2,322) |
| Total costs | (1,957) | (3,825) | (7,453) |
| Increase in WtE operator revenue | 1,957 | 3,825 | 7,453 |
| Total Benefits | 1,957 | 3,825 | 7,453 |

The Department notes that the quantitative analysis relies on imprecise data and a significant number of assumptions to be able to generate outcomes, so should be interpreted as indicative of expected impacts, rather than a precise forecast. As a result, this quantitative analysis is complemented by a qualitative analysis of the impacts and a discussion of possible developments in the sector.

The Department qualitatively assesses the three cap options against five criteria in the RIS to determine the preferred option, using the quantitative analysis to support this assessment. The Department uses the following five criteria, and notes that it considers the first two criteria the most important as they align with the goals of Victoria's circular economy policy:

1. increasing the value of waste managed in Victoria;
2. avoided use of virgin materials through increased material recovery and reuse/recycling;
3. avoided use of landfill;
4. net effect on greenhouse gas emissions; and
5. financial, distributional, and other impacts.

Based on these criteria, the Department assesses that Option 3 poses too high a risk that waste that could otherwise be recycled will be sent to WtE facilities instead. The Department selects Option 2 as its preferred option, as it assesses that it strikes the best balance between the criteria.

The RIS assesses three options for fee structures using a Multi-Criteria Assessment (MCA). The Department scored the options against three equally-weighted criteria, with the results summarised in the table below.

| Criterion | Weight | Option 1 Flat | Option 2 Differentiated | Option 3 Sliding scale |
|--|---------------|--------------------------|------------------------------------|-----------------------------------|
| Fair distribution of costs | 33% | 6 | 8 | 9 |
| Barrier to entry, competition, or innovation | 33% | -3 | -2 | -1.5 |
| Simplicity | 33% | -1 | -1.5 | -5 |
| Total weighted score | 100% | 0.66 | 1.49 | 0.83 |

The Department explains that Option 2 is preferred because it provides a fairer distribution of costs between large and small operators than a flat fee while being simpler to understand and administer than a sliding scale and without posing an undue barrier to entry, competition, or innovation. The Department expects the fees to recover about 83% of expected costs but notes that the actual costs of operating the new scheme are unknown and depends on the volume of applications received.

The proposed fees are summarised in the table below:

| Application | Fee units | 2023-24 fee |
|--|------------------------|------------------------------|
| Cap licence application | 1,045 (small facility) | \$16,615.50 (small facility) |
| | 2,095 (large facility) | \$33,310.50 (large facility) |
| Expression of interest | 780 | \$12,402.00 |
| Application to decrease cap allocation | 390 | \$6,201.00 |

Implementation and Evaluation

The Department explains that the cap licensing scheme will commence in mid-2024, with expressions of interest to be received and assessed by the end of 2024, and with final licences issued in the third quarter of 2025. The Head, Recycling Victoria (RV) will be responsible for the scheme, including communicating with WtE proponents, processing expressions of interest, cap licences and reductions of allocated cap amounts, in addition to the ongoing monitoring of WtE operations in Victoria.

The cap licensing scheme will be first partially evaluated in June 2026, once licences are issued, but before all licensees are operational. A full 5 year evaluation will be undertaken in June 2029, once all licensees are expected to be operational. These evaluations will be based on both qualitative and quantitative data to assess the operation of the scheme and licensee compliance. Baseline data for these evaluations will be compiled in June 2024, before new licensed WtE facilities come into operation, and further data will be compiled at yearly and 5 yearly intervals.

Should you wish to discuss any issues raised in this letter, please do not hesitate to contact my office on (03) 7005 9772.

Yours sincerely



Rebecca Billings

Interim Commissioner for Better Regulation