

Victorian waste to energy framework

Supporting sustainable and appropriate investment



November 2021



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Acknowledgment

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We are committed to genuinely partner, and meaningfully engage, with Victoria's Traditional Owners and Aboriginal communities to support the protection of Country, the maintenance of spiritual and cultural practices and their broader aspirations in the 21st century and beyond.



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At a glance: the Victorian waste to energy framework

Recycling Victoria: A new economy contains the Victorian Government's waste to energy policy position.

Recycling Victoria recognises a role for waste to energy investment in Victoria, and supports waste to energy facilities where they meet best-practice environment protection requirements, reduce waste to landfill, support waste avoidance, reuse and recycling, and demonstrate social licence with affected communities.

Thermal waste to energy technologies can help achieve Victoria's waste to energy goals if we have the right number and scale of facilities. To this end, *Recycling Victoria* commits to placing a 1 million tonne per year cap on the amount of waste that can be sent to thermal waste to energy in Victoria to 2040. *Recycling Victoria* also commits to a review of the waste to energy framework in 2023.

Purpose of the Victorian waste to energy framework

The purpose of this waste to energy framework is to describe how the waste to energy cap will work. The framework details the cap's proposed scope, operation, and administration.

The waste to energy cap will be implemented in legislation and supported by regulations and by guidance issued by Victoria's new waste and recycling regulator.

Objective and principles

The objective of the waste to energy framework is to encourage investment that supports diversion of residual waste from landfill, while avoiding risks to recycling outcomes in the future.

The principles for implementing the framework are:

- encourage investment in facilities that help achieve the goals and targets of *Recycling Victoria*
- support a diverse and competitive waste to energy market
- have a consistent, transparent and fair mechanism.

Refer to section 2 for more information about the objective and principles of the waste to energy framework.

What facilities and processes will the cap apply to?

For the purposes of the cap, 'thermal waste to energy' refers to any thermal process used:

- a) to recover energy from waste in the form of heat, which may be converted into steam or electricity, and/or
- b) to produce a fuel from waste.

This includes, but is not limited to, combustion, gasification and pyrolysis technologies (or any hybrid variant).

The following processes are not considered to be 'thermal waste to energy' for the purposes of the cap:

- Advanced recycling: the conversion to monomer or production of new raw materials (other than fuels) by changing the chemical structure of a material or substance through cracking, gasification or depolymerisation.
- Biological waste to energy technologies, which use microbial action to recover energy from waste. This includes (but is not limited to) anaerobic digestion and fermentation.
- Landfill gas collection and combustion.
- Incineration of waste with no energy recovery.
- Thermal processes that recovery energy from materials that are not waste.

Facilities that were operating or had a planning permit as of 28 June 2021 need not fit within the 1 million tonne per year cap, but must hold a cap licence to process permitted wastes (see section 3.3).

Refer to section 3.1 for more information about what processes the cap scheme applies to, and to section 3.3 for more information about categories of operator exempt from some requirements of the cap scheme.

What wastes will the cap apply to?

The following system will be used to categorise waste for thermal waste to energy facilities:

- Permitted **waste** is waste that can be used for thermal waste to energy under a cap licence. It includes:
 - residual municipal waste from a council that has at least a three-bin kerbside system in place and collects waste in accordance with any applicable regulations.
 - commercial waste that has been source-separated in accordance with any existing legislation or regulations, or can be demonstrated through a market assessment to be impracticable to recycle, even after sorting.
- **Banned waste** is waste that cannot be used in any thermal waste to energy process. It includes:
 - any waste that is not permitted or exempt waste.
- **Exempt waste** is waste that can be used for thermal waste to energy outside of a cap licence. It includes:
 - certain streams of dry or fibrous waste biomass that are suitable for thermal bioenergy.
 - hazardous waste.

Facilities that can demonstrate they will only process exempt wastes for the operating life of the facility need not hold a cap licence.

Refer to section 3.2 for full definitions of permitted, banned and exempt wastes.

How the cap will operate

Thermal waste to energy facility operators need a **cap licence** to recover energy from **permitted** waste. It is prohibited for a waste to energy operator to operate a thermal waste to energy facility without a cap licence if one is required, or to operate a facility in a manner that is not in accordance with its cap licence.

Cap licences will be allocated through a competitive process coordinated by the waste to energy cap scheme regulator. This process will operate as follows:

1. **Expression of interest.** The cap scheme regulator opens a call for **expressions of interest** to seek applications from operators interested in accessing the cap. In response, applicants submit an **expression of interest** with basic details about their proposals. The cap scheme regulator may reject spurious responses at this stage.
2. **Full applications received.** The cap scheme regulator invites suitable applicants to submit a **full application** to the cap scheme regulator. This application contains all the **prerequisite** information required by the cap scheme, and responds to the evaluation criteria under which the proposals will be assessed.
3. **Assessment.** The cap scheme regulator scores each application against fixed, transparent **evaluation criteria** set and published by the cap scheme regulator. Criteria include an assessment of the proposed facilities' resource recovery benefits, greenhouse gas impacts, how well-progressed the proposal is, and whether the facility meets critical waste infrastructure needs in Victoria.
4. **Cap licence granted, with conditions.** The cap scheme regulator grants a **cap licence with conditions** to applicants with the highest assessment scores, until there is no cap capacity remaining. The licence will document a process and timeframe for the operator to reach financial close and conditions to apply once the facility is operational. The cap licence provides certainty to operators at an early stage of facility development so that the project can proceed to financial close and commissioning.
5. **Monitoring through to commissioning.** The cap scheme regulator monitors the operator's progress towards financial close and commissioning, such as establishing waste supply contracts, energy offtake agreements and financial contracts. If an operator does not reach financial close and commissioning in the agreed timeframe, the cap scheme regulator may decide to provide an extension, or to revoke the licence and reallocate the cap capacity.

6. **Ongoing monitoring, compliance and enforcement.** Once an operator starts processing waste, it will be subject to the conditions of its licence, including ongoing quarterly reporting requirements. The cap scheme regulator will have powers to monitor operators' compliance with the cap scheme and prohibit activities that are not in accordance with an operator's cap licence conditions. Operators will need to notify the cap scheme regulator if they have breached their licence conditions, or if they reasonably believe they may be about to breach their licence conditions. The cap scheme regulator will have powers to modify licence conditions under certain circumstances, either by agreement with the licensee or unilaterally.

Refer to sections 3.3-3.6 for more information about cap licences, the application and assessment process, reporting, monitoring and compliance.

1. Introduction

1.1 The way waste to energy is managed in Victoria is changing

Recovering energy from residual waste will drive us towards a circular economy by reclaiming energy from materials that would otherwise be sent to landfill without benefit, and allowing businesses to generate more value from the materials they manage.

Victoria's landfill capacity is becoming more constrained, particularly in metropolitan Melbourne, as a result of population growth and other pressures. Increasing Victoria's landfill levies in the coming years will drive investment in innovative technologies and alternatives to landfill, such as advanced recycling and waste to energy.

Appropriate investment in waste to energy will support jobs growth and economic development.

The Victorian Government's waste to energy policy was published in February 2020 as part of *Recycling Victoria: A new economy*. The Victorian Government has invested over \$515 million to deliver the biggest transformation and reform of Victoria's waste and recycling industry. This includes \$380 million to deliver Recycling Victoria which will fundamentally reduce waste, boost jobs and establish a recycling system Victorians can rely on.

Recycling Victoria supports a balance between the benefits of waste to energy compared to landfill and its potential to undermine waste reduction and recycling practices if not managed appropriately.

Recycling Victoria recognises a role for waste to energy investment in Victoria, and supports waste to energy facilities where they:

- meet best-practice environment protection requirements
- reduce waste to landfill
- do not inhibit innovation in or displace reuse or recycling
- reduce greenhouse gas emissions
- have sustainable business models that create jobs and economic development
- work well with local communities in which they operate.

Waste to energy facilities can only operate successfully in the long term if they build trust within affected communities and enable them to have a say in how facilities will be built and operated. Securing a social licence to operate is critical to the success of a waste to energy proposal.



To manage any risks of over-reliance on waste to energy, *Recycling Victoria* committed to placing a 1 million tonne per year cap on the amount of residual waste that can be sent to thermal waste to energy in Victoria to 2040.

The *Victorian waste to energy framework* describes how this waste to energy cap will work.

Promoting jobs in the economic recovery from COVID-19

Waste to energy investment has a role in supporting economic development in Victoria, particularly as we recover from COVID-19.

Recycling Victoria's \$380 million investment is expected to create 3,900 jobs as we change the way we use materials and turn waste into more valuable products. In particular, the government has kicked off investment in the Circular Economy Business Innovation Centre and the Recycling Victoria Infrastructure Fund, which will create jobs by avoiding waste in the first place and substantially boosting Victoria's capacity to process recyclables locally.

Recycling more and throwing away less is good news for jobs. For example, modelling performed by Access Economics for the Australian Government suggests that 9.2 direct jobs are created per 10,000 tonnes of waste recycled, compared to 2.8 jobs per 10,000 tonnes of waste sent to landfill.

Experience from other jurisdictions shows that waste to energy can be a major source of investment and job creation. For example, the Kwinana waste to energy plant currently being constructed in Western Australia, will provide up to **800 jobs** during construction and **60** new permanent jobs for future operation and maintenance.

More recycling means more jobs.



4,000 jobs

created by
Recycling Victoria



350 jobs

from Round 1 of
the **Recycling Victoria**
Infrastructure Fund



9.2 jobs

per 10,000 tonnes
of waste recycled

(Versus 2.8 jobs per
10,000 tonnes landfilled)

1.2 Consultation on the draft waste to energy framework

Substantial stakeholder feedback has informed this cap framework including in 2019 during the development of *Recycling Victoria*.

More recently, industry and local government provided feedback on the *Victorian waste to energy framework – draft for consultation*. The draft framework proposed a model for how the cap could work, a system for how the cap would apply to different wastes, and options for how the cap could be allocated to different operators. Over 50 submissions were received. Common themes from the consultation feedback included the following:

- Respondents were generally satisfied with the proposed application of the cap to municipal waste. However, they sought more clarity about the application of the cap to commercial and industrial (C&I) and construction and demolition (C&D) waste streams. Respondents requested more information about how to demonstrate that C&I or C&D waste has no market for recycling in order for it to be a permitted waste.

- Some respondents raised concerns that the cap would inhibit investment in chemical recycling processes which convert wastes into new products, such as plastic monomers to make recycled plastics, rather than energy or fuels.
- A majority of respondents supported allocating the cap to operators through an expression of interest (described as the 'coordinated approach' in the draft framework) instead of through a first-in, best-dressed method (the proposed 'on-demand' approach). The coordinated approach was preferred because it would prioritise well-rounded facility proposals which met a wide range of assessment criteria.
- Several stakeholders expressed concerns that the timeframes for establishing the cap scheme regulator would create uncertainty for waste to energy projects in development.

This final waste to energy framework responds to stakeholder feedback by:

- clarifying the technologies and processes to which the cap applies
- simplifying the definitions of permitted, banned and exempt waste and aligning them with other reforms under Recycling Victoria
- providing further detail about how waste to energy operators may demonstrate that a waste stream is impracticable to recycle
- confirming that the cap will be allocated through an expression of interest process, with applications assessed against specified criteria, and
- providing more detail about the application, assessment, monitoring and compliance arrangements.

1.3 Links to other reforms

Recycling Victoria features four high-level goals, under which there are 11 key commitments and 26 actions. Other actions with strong links to the reforms in this draft framework include:

- reforming Victoria's kerbside waste collection systems, to increase source separation and standardise bin contents across Victoria (Action 5.1)
- reforming Victoria's landfill levy to bring it in line with other states, recognise the social, economic, and environmental value of reducing waste, reusing and recycling, and support the shift to a circular economy (Action 6.1)
- legislative and governance reform to ensure transparency, reliability and accountability for what happens to our waste, including establishing a dedicated waste and recycling Act and cap scheme regulator (Action 7.1)
- building on existing waste and recycling infrastructure planning to include all waste streams and improving risk and contingency planning (Action 7.2)
- implementing a Recycling Markets Acceleration package to drive demand for recycled materials across the economy (Action 8.1)
- developing an industry and infrastructure development package to accelerate and stimulate investment in infrastructure to increase recovery and the safe management of waste (Action 8.3)
- ensuring the safe management of high-risk and hazardous wastes through stronger regulation, policy and planning (Action 10.1).

1.4 Next steps

This section outlines anticipated timeframes for legislating the waste to energy cap and its administration by the cap scheme regulator.

To give effect to the waste to energy cap framework, legislation will be introduced in the Victorian Parliament. Following successful passage of that legislation, there will be public consultation on detailed regulations that will outline how the new waste and recycling regulator will administer the cap. In 2022 the new regulator will commence, and an initial priority will be to grant the first round of cap licences.



2. Objective and principles

2.1 Objective and principles of the waste to energy framework

The objective of the waste to energy framework is to encourage investment that supports diversion of residual waste from landfill, while avoiding risks to recycling outcomes in the future.

Several principles inform how the waste to energy cap is designed to meet the overall objective. The objective and principles are summarised in Figure 1.



Figure 1: Objective and principles of the waste to energy framework

Principle 1 - The cap should encourage investment in facilities that achieve the goals and targets of *Recycling Victoria*

Recycling Victoria sets goals and targets to support Victoria's transition to a circular economy. These goals include supporting business to explore new circular economy business models, embedding the waste hierarchy, supporting the development of appropriate waste to energy facilities, and protecting communities and the environment from high-risk and hazardous wastes.

Victoria's circular economy targets provide a basis for achieving these goals by 2030:

- 15 per cent per person waste reduction
- 80 per cent resource recovery rates across all waste streams, following the waste hierarchy
- 50 per cent reduction in the amount of organic waste sent to landfill for disposal by 2030.

Waste to energy has an important role to play in achieving *Recycling Victoria*'s goals and targets. The cap supports investment in facilities that meet these targets – protecting innovation in waste avoidance and recycling while encouraging innovative waste to energy investment at appropriate scale.

Principle 2 – The cap should support a diverse and competitive waste to energy market

Victoria's waste markets benefit from having multiple operators that operate in a responsible way. A diverse market encourages competitive prices and provides contingency during market disruptions.

The waste to energy cap should maximise diversity and competition within the market as much as possible. It should allow for contingency in managing market disruptions – both through diversity of infrastructure as well as the contract structures those facilities use.

The cap should also support sensible distribution and scale of facilities across Victoria. This includes aligning with the new Victorian Recycling Infrastructure Plan committed under *Recycling Victoria*.

Principle 3 – The cap should be applied through a consistent, transparent and fair mechanism

Providing certainty is essential to supporting waste to energy investment in Victoria. This means creating a stable regulatory environment and a clear process for complying. The waste to energy cap should apply consistently to different types of proposals.

Transparency should be provided about the process for seeking an allocation within the cap, what information facilities need to provide, and how much capacity is available within the cap at any time.

Certainty should be provided to proponents about when in the development process they can access the cap, what requirements they need to meet, and any criteria used to assess applications.

A fair cap allocation process will also encourage best-practice facilities, reduce risk, and avoid unintended consequences or opportunities to game the system.

3. Waste to energy cap framework

This section outlines how the waste to energy cap will operate. This includes:

- defining thermal waste to energy for the purposes of the cap scheme
- how different wastes are categorised and managed under the cap scheme
- how operators apply for and are granted cap licences
- reporting and compliance measures
- considerations for future reviews of the cap.

3.1 Processes the cap applies to

The waste to energy cap applies to thermal waste to energy processes. For the purposes of the cap, ‘thermal waste to energy’ refers to any thermal process used:

- a) to recover energy from waste in the form of heat, which may be converted into steam or electricity, and/or
- b) to produce a fuel from waste.

This includes, but is not limited to, combustion, gasification and pyrolysis technologies (or any hybrid variant).

The following processes are not considered to be ‘thermal waste to energy’ for the purposes of the cap:

- Advanced recycling: the conversion to monomer or production of new raw materials (other than fuels) by changing the chemical structure of a material or substance through cracking, gasification or depolymerisation.
- Biological waste to energy technologies, which use microbial action to recover energy from waste. This includes (but is not limited to) anaerobic digestion and fermentation.
- Landfill gas collection and combustion.
- Incineration of waste with no energy recovery.
- Thermal processes that recover energy from materials that are not waste.

In this waste to energy framework, an **operator** refers to a person or entity that operates a thermal waste to energy facility, or will operate a proposed facility.

3.2 Wastes that can be used for thermal waste to energy

Under the proposed waste to energy framework, waste is divided into three categories based on its suitability for use as a thermal waste to energy feedstock:

- **Permitted waste:** waste that can be used for thermal waste to energy under a cap licence.
- **Banned waste:** waste that cannot be used in any thermal waste to energy process.
- **Exempt waste:** waste that can be used for thermal waste to energy outside of a cap licence.

Permitted wastes are truly residual wastes for which no further recycling is practicable, even with additional sorting. In contrast, banned wastes are recyclable, or need to undergo further recycling or sorting, so are not suitable for waste to energy.

This waste categorisation system applies to refuse-derived fuels in the same way it applies to other waste. It applies to all kinds of wastes, including different kinds of biomass.

Determining whether a waste is permitted, banned or exempt depends on whether the waste is municipal waste or not.

- **Municipal waste** (sometimes called ‘municipal solid waste’ (MSW)) is waste arising from municipal or residential activities, and includes waste collected by, or on behalf of, a local council.
- **Commercial waste** means waste arising from commercial, industrial or trade activities or from laboratories. It also includes any waste prescribed to be a commercial waste. It includes both C&I and C&D wastes.

The section below describes which municipal and commercial wastes are permitted, banned and exempt. Figure 2 summarises this waste categorisation system.

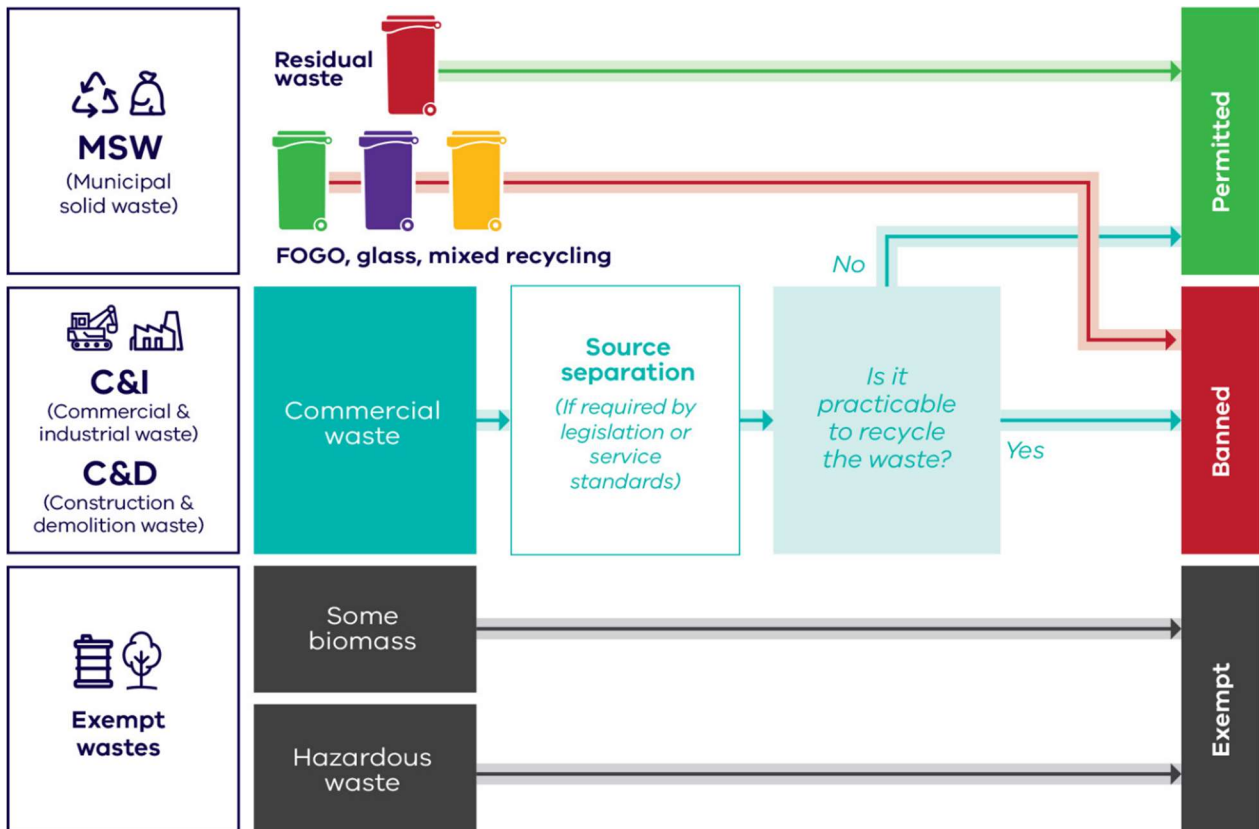


Figure 2: Summary of permitted, banned and exempt wastes under the waste to energy framework. This is an outline only. Refer to text below for exact definitions.

Permitted waste

Permitted waste is:

1. Municipal waste collected in a kerbside residual waste bin, provided that:
 - the local council has at least a three-bin kerbside collection system in place, which must include a residual waste bin, a commingled recycling bin, and an organic waste bin; and
 - the council collects waste in a manner consistent with any relevant regulations.
2. Any other municipal residual waste that is collected in a manner consistent with any relevant regulations.
3. Residual commercial waste, provided that:
 - the waste has undergone source-separation as required by legislation or regulations, or
 - if no such source-separation requirements apply to the waste, or if the waste is homogenous, the waste to energy operator can demonstrate that it is not technically, environmentally or economically practicable to reuse or recycle the waste, or extract recyclable materials from the waste.

The cap scheme regulator will issue further guidance that specifies what an operator must do to demonstrate that a waste is not technically, environmentally or economically practicable to recycle. However, in principle, the operator must demonstrate one of the following is true:

- there is no commercially available facility in the region that offers a **technology** or process that could recycle the waste stream or sort it to a standard where it could be recycled.
- The reuse or recycling of the waste stream is prohibited by legislation.
- After comparing the **environmental** impacts of reusing or recycling a waste stream with the environmental impacts of recovering energy from the waste, it is clear that energy recovery is net beneficial.

- The **financial** costs of available reuse and recycling options (including transportation costs) are disproportionately higher than the financial costs of alternative disposal or treatment options, including waste to energy processes.

The onus of this analysis will be on the waste to energy facility operator. In performing the analysis, operators will be expected to document their assessments and be able to demonstrate their reasoning and evidence if called upon by the cap scheme regulator to do so.

If necessary, the cap scheme regulator could compel an operator to stop accepting a waste stream if it determined that the waste stream was recyclable, rather than residual.

Banned waste

Any waste that is recyclable, or has not undergone a proper assessment to determine whether it is permitted waste, will be banned from use in thermal waste to energy facilities in Victoria.

Specifically, banned waste is any waste that is not permitted waste or exempt waste.



Exempt waste

Some wastes are proposed to be exempt from the waste to energy cap. In general, this is because these wastes are already commonly used for renewable thermal bioenergy production in Victoria, or because there are more important priorities for their management (such as safe management of hazardous waste).

Exempt waste is:

1. Waste biomass which is:
 - a. wood waste as defined by regulation 8 of the Renewable Energy (Electricity) Regulations 2001 (Cth)
 - b. one of the following wastes from primary production activities:
 - i. straw, chaff and other waste from agricultural crops
 - ii. nut hulls and shells
 - iii. pips, pits and seeds from olives and other fruits
 - iv. grape marc and other grape processing waste
 - v. poultry litter
 - vi. paunch and abattoir wastes
 - c. one of the following wastes from manufacturing activities:
 - i. fruit and vegetable processing waste
 - ii. residues from pulp and paper manufacturing and processing that cannot be recycled into new paper products
 - d. biosolids
 - e. treated through a thermal pyrolysis process to sequester carbon.
2. Hazardous waste¹.

1. 'Hazardous waste' is defined as wastes that are reportable priority wastes for the purposes of both section 142 and section 143 of the *Environment Protection Act 2017*.

3.3 Cap licences

A **cap licence** is a legislative tool which allows a waste to energy facility operator to use permitted waste in a thermal waste to energy facility as part of the cap scheme. Permitted waste may only be used in a thermal waste to energy process in Victoria under a cap licence, and in accordance with the conditions of that licence.

Cap licences are issued by the cap scheme regulator. They place **conditions** on how operators can undertake thermal waste to energy activities under the cap. Existing permissions regulating matters such as human health, environment protection and planning requirements are not changed by the waste to energy cap framework.

It is prohibited for a waste to energy operator to operate a thermal waste to energy facility without a cap licence if one is required, or to operate a facility in a manner that is not in accordance with its cap licence. Operators also need to notify the cap scheme regulator if they have breached their licence conditions, or as soon as they reasonably believe they may be about to breach their licence conditions.

Operators will be granted a cap licence subject to reaching **financial close and commissioning the facility**. Financial close is the time in the development of a project when the operator satisfies all the project financiers' pre-conditions to enable the drawdown of funds and commencement of construction. Once an operator commissions its waste to energy facility, the operator can use thermal waste to energy in accordance with the cap licence.

Operators are able to apply to the cap scheme regulator to amend licence conditions if appropriate. For example, an operator may wish to reduce the amount of permitted waste it is licensed to process and instead process more exempt waste. Operators are also able to apply to transfer cap licences to another entity, provided the change is purely administrative and does not affect the amount of permitted waste processed.

Operating facilities and facilities with planning approval in place before 28 June 2021

The requirement to fit within the 1 million tonne cap limit does not apply to thermal waste to energy facilities that were operating or had an approved planning permit before 28 June 2021. These facilities will therefore not be assessed against the evaluation criteria detailed in section 3.4 but instead will automatically be granted a cap licence following receipt of a completed application.

The government's intention is that these facilities will continue to operate and develop during the transition to the new framework.

Although they are exempt from the 1 million tonne cap, other aspects of the framework, including reporting arrangements (section 3.5) and rules about the waste types that can be used in thermal waste to energy facilities (section 3.2) will apply to these operators. It is the government's expectation that these new rules will not be substantially more onerous than their existing permissions under the *Environment Protection Act 2017*. More guidance about waste feedstock rules will follow consultation in 2022 to inform regulations.

The cap licences for these facilities will include some but not all the conditions for other cap licences listed in Table 1, below. They will include the quantity of permitted waste that may be accepted, which will be the quantity of waste the operator is already processing (for operating facilities) or is permitted to process under its planning permit and EPA permission (for permitted facilities). These licences will also include reporting requirements and stipulate the life of the cap licence (which will be the projected life of the facility).

The cap regulator will have powers to tailor cap licence conditions to each facility, including with regard to waste feedstock types if necessary to support the legislated objectives of this framework. For facilities operating or permitted before 28 June 2021, the regulator will have regard to existing feedstock contracts when considering licence conditions.

If these operators propose to increase the amount of permitted waste their facilities process, they will need to seek additional capacity through the regular cap application process, in the same way that a new facility would.

South-east advanced waste procurement

It is the Victorian Government's intention to give priority access under the proposed waste to energy cap to facilities that will meet a critical waste infrastructure need. With the anticipated closure of landfill capacity in Melbourne's south east, the Victorian Government is supporting local governments to procure a facility that can take the displaced residual waste. It is the Victorian Government's intention that a successful project in

this procurement project, which secures a contract with partner councils for that residual waste, will be granted a cap licence. That licence would give access to an allocation under the 1 million tonne cap.

Facilities processing only exempt waste

A waste to energy operator does not require a cap licence if it only processes exempt waste. If an operator processes a combination of exempt and permitted waste, a cap licence is required. However, only the permitted waste processed by the operator will be subject to capacity restrictions.

Operators are able to self-assess whether they require a cap licence for their operations. Confirmation from the cap scheme regulator is not required if an operator is confident it will only process exempt waste.

If these operators propose to accept permitted waste in the future, they will be required to seek a cap licence and allocation through the regular cap application process, in the same way that a new facility would.

Facilities using advanced recycling technologies

As described in section 3.1, advanced recycling processes, which convert wastes into new raw materials, are not thermal waste to energy facilities and do not fall within the cap scheme. This means they do not need a cap licence to operate.

However, some facilities may conduct both advanced recycling and waste to energy or waste to fuel processes. These facilities will be subject to the cap scheme and the cap scheme regulator will have flexibility to tailor cap licences and conditions as needed. For example, the regulator could provide a cap licence and *pro rata* allocation equivalent to the proportion of waste feedstocks used by the facility to generate energy or fuel.

Cap conditions

Table 1 describes the types of conditions that will be included in cap licences. The specifics of each condition will vary depending on the characteristics of each facility, and will be established in regulations and/or guidance that will be subject to consultation.

Table 1: Types of condition that will be included in operators' cap licences. Note: details of each condition will vary for each operator.

Type of condition	Details
Quantity of permitted waste accepted	The operator must recover energy from the allocated quantity of permitted waste, within a small margin of variation, over the course of a financial year. The allocated quantity will be determined on a facility-by-facility basis
Financial close deadline	The operator must reach financial close by a particular date as determined at the cap scheme regulator discretion.
Commissioning deadline	The facility must be fully commissioned within five years of the cap licence being granted. The cap scheme regulator may adjust this timeframe depending on the characteristics of each facility, and will monitor achievement of project milestones during this time.
Reporting requirements: <i>Reporting requirements are discussed in detail in section 3.5.</i>	The operator must report every quarter to the cap scheme regulator on: <ul style="list-style-type: none"> • progress towards reaching financial close, constructing or commissioning the facility (depending on the status of the project at the time a licence is granted) • the amount of waste processed in that period, and at the conclusion of a financial year, the total amount of waste processed during that financial year • the composition of waste processed, by material type (information to be reported will be specified in regulator guidance) • the composition of that waste by source sector (municipal waste, commercial and industrial, construction and demolition) • what fraction of waste accepted was permitted waste and what fraction was exempt waste • how much waste was provided by each waste supplier.

Life of cap licence	The cap licence will have effect for the projected life of the facility. After this date, the cap licence ceases to be in effect unless renewed by the cap scheme regulator.
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3.4 Applying for cap licences

The cap scheme regulator will decide which operators gain access to the 1 million tonne per year cap. Operators must apply for a cap licence from the cap scheme regulator, which will then assess applications and allocate cap licences through a consistent and transparent process.

Applications will be assessed and cap licences allocated through an expression of interest process. The process is described in full below, and summarised in Figure 3.

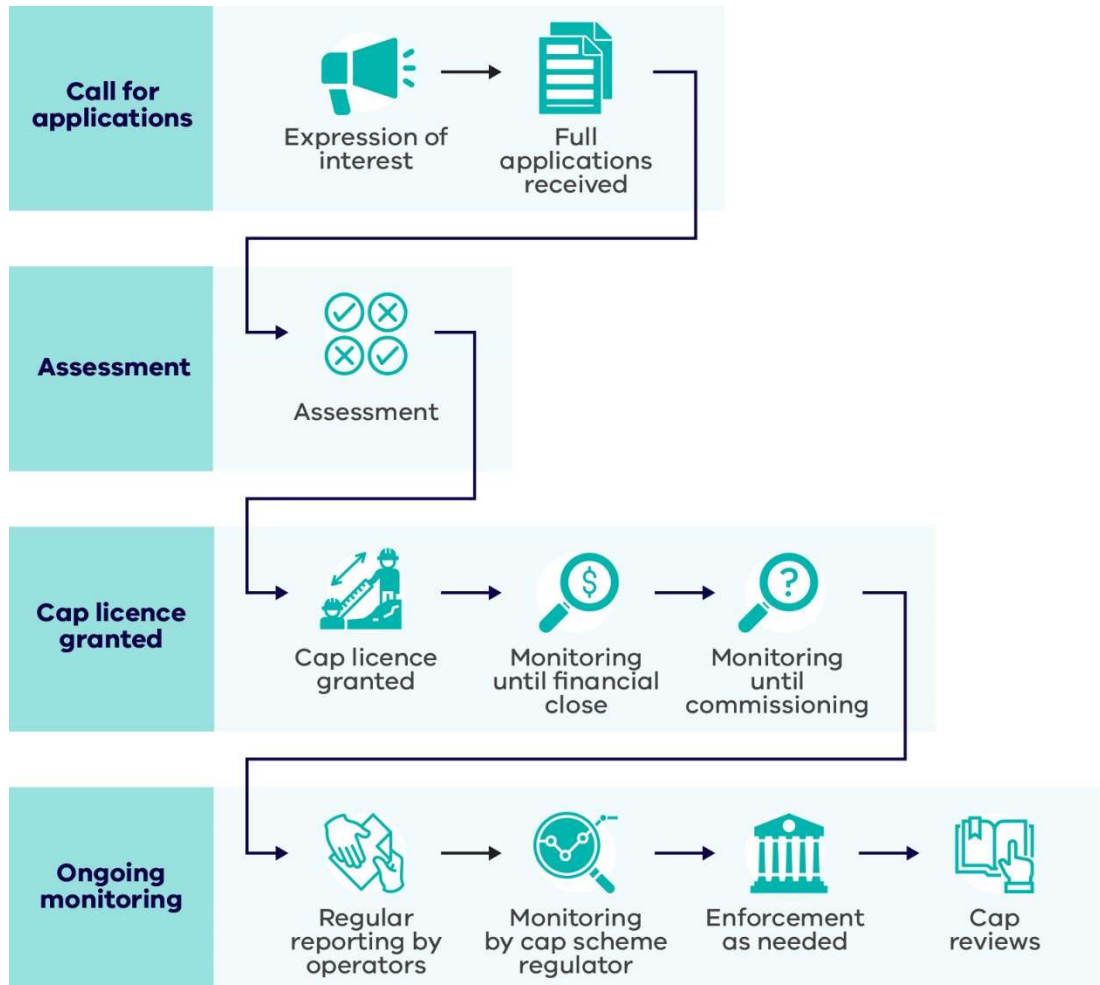


Figure 3: Summary of the cap licence application and assessment process. Refer to the body of the document for a full explanation of the cap framework.

1. Expression of interest

The cap scheme regulator will release a call for **expressions of interest** from prospective waste to energy facility operators to apply for a cap licence within the 1 million tonne per year cap limit.

An applicant submits an **expression of interest** to register its interest in accessing a cap licence and provides a summary of the proposed waste to energy operation. The cap scheme regulator will provide further guidance on the expression of interest process, but Table 2 describes anticipated **prerequisite information**.

After the expression of interest closes, the cap scheme regulator will review the responses. If a response is deemed satisfactory, the applicant will be invited to submit a full application for a cap licence. If a response is

considered to be inadequate (because it lacks necessary detail, proposes a spurious process, or does not demonstrate a serious intention to use the cap productively) the cap scheme regulator will reject the application.

Further information about the timeframes for the expression of interest process, the form of the response to the expression of interest, and what is considered an acceptable response will be specified in regulations and/or guidance issued by the cap scheme regulator.

2. Full applications received

Suitable applicants from the expression of interest stage will be invited to submit a full application. A full application provides comprehensive detail about the proposed waste to energy operation and responds to the evaluation criteria the cap scheme regulator will use to assess applications.

The cap scheme regulator will provide further guidance on the application process, but Table 2 describes anticipated prerequisite information. Prerequisite information will be established in regulations and/or guidance that will be subject to consultation

Table 2: Prerequisite information waste to energy facility operators must include in responses to the expression of interest and full applications.

Prerequisite information	EOI	Full application
1. A description of the proposed waste to energy facility, including: <ol style="list-style-type: none"> its proposed location the energy recovery technology it would use the energy products the facility would produce the entities involved in the project the projected lifetime of the facility. 	Yes	Yes
2. Features of the waste proposed to be processed, including: <ol style="list-style-type: none"> the amount of waste to be processed each year the composition of waste to be processed, by source sector and material type how much sorting the waste will have undergone before or once received at the site the proportion of waste to be accepted that is permitted waste and exempt waste the amount of permitted waste the applicant seeks to be approved in its cap licence. 	Yes	Yes
3. A business case for the proposed facility. The business case should include the following at least: <ol style="list-style-type: none"> project status at the time of application submission commercial project milestones already achieved and expected timing for achieving the remaining milestones the contract model adopted by the facility (for example, merchant plant or public-private partnership) details of any waste feedstock agreements the applicant has obtained or is seeking details of any energy or by-product offtake agreements the applicant has obtained or is seeking any other commercial and/or financial agreements the applicant has obtained or is seeking. expected job creation a qualitative assessment of the financial risks of the project Any relevant legal compliance matters Any relevant technical elements. 		Yes

Prerequisite information	EOI	Full application
4. Regulatory and compliance progress, including: <ol style="list-style-type: none"> details of any environmental and planning permissions the applicant has obtained or is seeking details of any cap licence already held other safety and environmental approvals the applicant has obtained or is seeking 	Yes	Yes
5. A description of completed and planned community engagement activities to build social licence for the proposed facility.		Yes
6. A description of how the operator expects the facility will: <ol style="list-style-type: none"> meet a critical waste infrastructure need in Victoria align with the objective and principles of the waste to energy cap align with the waste to energy policy position in <i>Recycling Victoria: A new economy</i> align with the Victorian Recycling Infrastructure Plan align with other relevant government policy settings. 		Yes
7. An assessment of the expected lifecycle greenhouse gas impact of the proposed facility compared to landfill.		Yes

3. Assessment

Once the application period has closed, the cap scheme regulator will assess the applications against **evaluation criteria**. Evaluation criteria will be fixed and transparent, and the cap scheme regulator may issue guidance that further explains how it will consider applications against the criteria.

Evaluation criteria will be established in regulations and/or guidance that will be subject to consultation, but As discussed in section 3.3, operators that had secured planning permits for facilities as of 28 June 2021 will need to submit cap applications that contain prerequisite information but will not be assessed against evaluation criteria nor compared against other applicants. They will be granted cap licences independently of the competitive assessment process.

Table 3 describes the anticipated evaluation criteria the cap scheme regulator will use to assess applications.

As discussed in section 3.3, operators that had secured planning permits for facilities as of 28 June 2021 will need to submit cap applications that contain prerequisite information but will not be assessed against evaluation criteria nor compared against other applicants. They will be granted cap licences independently of the competitive assessment process.

Table 3: Evaluation criteria to be used by the cap scheme regulator to assess cap licence applications.

Criterion	Description
1. Infrastructure need	Does the proposed facility meet a critical waste infrastructure need in Victoria?
2. Policy alignment	How does the facility align with: <ul style="list-style-type: none"> the objective and principles of the waste to energy cap the waste to energy policy position in <i>Recycling Victoria: A new economy</i> the Victorian Recycling Infrastructure Plan other relevant government policy settings?
3. Waste composition	Regarding waste composition: <ul style="list-style-type: none"> What is the amount and composition of waste that would be used? What risks might those waste characteristics pose to recycling outcomes?

Criterion	Description
	<ul style="list-style-type: none"> How much source separation or sorting will the waste have undergone before energy recovery?
4. Energy products	What energy products will the facility produce?
5. Proven technology	How demonstrated and proven is the energy recovery technology proposed? If the technology is new, what evidence exists to demonstrate its potential?
6. Regulatory approvals	How advanced is the applicant in terms of securing environmental, planning, safety, and other relevant permissions and licences?
7. Business case	Based on the business case and other relevant information, how advanced and sophisticated is the proposal from a financial perspective, considering: <ul style="list-style-type: none"> What supply and/or offtake contracts or agreements are already in place, provisionally in place, or in development? What progress has been made towards seeking finance? Are there any concerns about past conduct of entities involved in the project? What financial risks may be present?
8. Greenhouse gas impacts	What are the expected lifecycle greenhouse gas impacts of the facility in comparison to other alternatives?
9. Community engagement	What community engagement activities have been put in place or are planned to build social licence for the proposed facility? What is the sentiment towards the facility of affected stakeholders
10. Job creation	What are the expected job creation benefits of the facility, in terms of construction, ongoing and indirect jobs created?
11. Social benefits	What other social benefits might the facility achieve?

4. Cap licence granted, with conditions

The cap scheme regulator will grant cap licences to operators with the highest-ranked applications from the assessment stage until there is no capacity remaining under the 1 million tonne cap. This process means that facilities which performed best against the evaluation criteria in the assessment process will be prioritised for access to the cap.

As discussed in section 3.3, cap licences will impose conditions on the operator's activities. Importantly, this will include conditions on when the operator must reach financial close.

5. Monitoring through to financial close

Once an operator has been granted a cap licence, the operator will report on progress towards reaching financial close. This enables the cap scheme regulator to determine that the operator is making genuine progress towards constructing a facility and is not wasting a cap licence that another operator could use more productively.

Once financial close occurs, the operator can begin constructing, commissioning and operating its facility in accordance with the conditions of the licence (see section 3.3). If an operator has not achieved financial close or commissioning within the time required in its licence conditions, the cap scheme regulator may work with the operator to return to compliance. If the operator does not satisfy the cap scheme regulator that it is making enough progress in returning to compliance, the regulator may revoke the operator's cap licence. If an allocation were revoked, it would be available for reallocation to another project or projects through a separate expression of interest.

Refer to sections 3.5 for more information about ongoing reporting and compliance requirements for waste to energy operators.



3.5 Ongoing reporting and monitoring

Cap licence holders will be required to regularly report to the cap scheme regulator on their operations under the cap scheme. New waste and recycling legislation will contain a reporting framework which will apply to a large number of waste facilities, including waste to energy facilities. Cap licence reporting will fall under this broader reporting framework. The cap scheme regulator will seek to leverage existing reporting frameworks to reduce regulatory burden where possible.

As described in Table 1, operators with cap licences will be required to report on the following matters each quarter:

- Progress towards reaching financial close or commissioning the facility
- The total amount of waste processed
- The amount of permitted and exempt waste processed
- The composition of waste accepted, by material type and source sector
- Which entities supplied what quantities of waste to the operator

An operator must advise the cap scheme regulator if it has not complied or reasonably believes it will not be able to comply with any of the conditions of its cap licence.

Further details about the form and frequency of reporting on cap licence conditions may be prescribed in regulations or specified in guidance issued by the cap scheme regulator.



3.6 Compliance and enforcement

The cap scheme regulator will have powers to monitor waste facilities' activities and enforce compliance with legislation and licences. For example, the cap scheme regulator will have the ability to:

- serve notices on waste facility operators requiring them to provide information
- issue improvement notices, prohibition notices or enforceable undertakings that require operators to perform or stop certain activities in response to non-compliance
- appoint authorised officers who can enter, inspect and monitor waste premises, and
- appoint auditors to perform waste-related functions specified in legislation or regulations.

The cap scheme regulator will have graduated enforcement tools to support operators to return to compliance in a proportionate way, depending on the seriousness of the non-compliance.

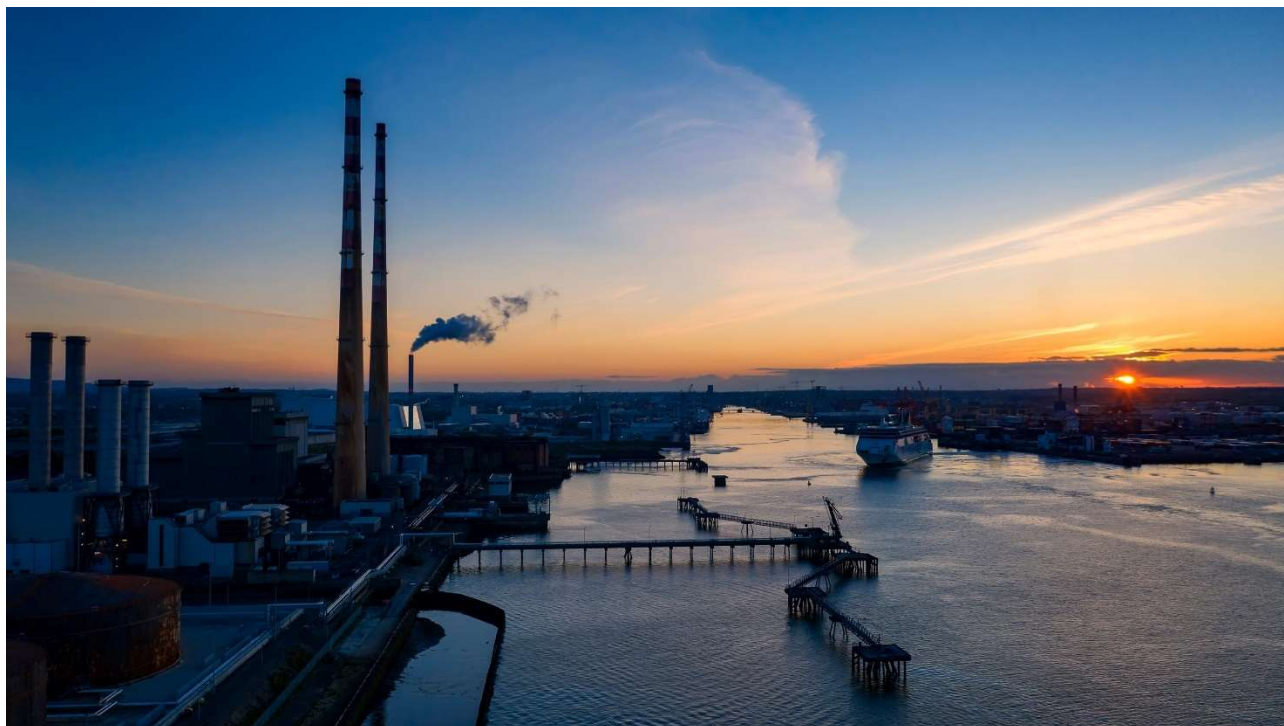
It is prohibited for a waste to energy operator to operate a thermal waste to energy facility without a cap licence if one is required, or to operate a facility in a manner that is not in accordance with its cap licence. Operators also need to notify the cap scheme regulator if they have breached their licence conditions, or as soon as they reasonably believe they may be about to breach their licence conditions.

3.7 Reviews of the waste to energy framework

Recycling Victoria commits to a review of the government's waste to energy policy settings in 2023. Beyond this, the Minister for Energy, Environment and Climate Change may instruct a review of the waste to energy cap framework at any time.

Matters that may be considered in reviews of the waste to energy framework include an assessment of existing and proposed waste to energy infrastructure in Victoria and the impacts it may have on Victorian waste flows and greenhouse gas emissions. Further information about the content of waste to energy framework reviews may be specified in regulations.

The Department of Environment, Land, Water and Planning will support the Minister in conducting reviews of the waste to energy cap.



Glossary

Term	Definition
Advanced recycling	The conversion to monomer or production of new raw materials (other than fuels) by changing the chemical structure of a material or substance through cracking, gasification or depolymerisation
Anaerobic digestion	The biological breakdown of organic matter by microorganisms in the absence of oxygen, producing biogas (a mixture of carbon dioxide and methane) and digestate (a nutrient-rich residue).
Banned waste	Waste that may not be used in any thermal waste to energy process.
Biological waste to energy	Waste to energy processes which use biological processes to convert organic waste into useful energy resources. Examples include anaerobic digestion and fermentation.
Biosolids	Solid organic residues from the wastewater treatment process; treated sewage sludge.
Cap licence	A legislative tool which allows a waste to energy operator to use permitted waste in a thermal waste to energy facility under the waste to energy cap.
Cap scheme regulator	The entity that will be responsible for administering and enforcing the waste to energy cap scheme. The regulator was committed in <i>Recycling Victoria: A new economy</i> and will be established under new legislation. Also referred to as 'waste and recycling regulator' in this framework.
Combustion	Thermal oxidation of waste to produce heat, which may then be used to produce steam or electricity.
Commercial and industrial (C&I) waste	Waste produced by institutions, businesses and industries.
Commercial waste	Waste arising from commercial, industrial or trade activities or from laboratories, including any waste prescribed to be a commercial waste by the government. Commercial waste includes both 'commercial and industrial' and 'construction and demolition' wastes.
Construction and demolition (C&D) waste	Waste generated from residential and commercial construction and demolition activities.
DELWP	Department of Environment, Land, Water and Planning.
EPA Victoria	Environment Protection Authority Victoria.
Exempt waste	Waste that may be used in a thermal waste to energy process without a cap licence.
Financial close	The time in the development of a project when the operator satisfies all the project financiers' pre-conditions to enable the drawdown of funds and commencement of construction.
Gasification	Thermal technology that converts material into combustible gases by partial oxidation under high temperatures (generally greater than 700°C) and limited oxygen conditions, leaving a solid ash or slag residue.

Term	Definition
Hazardous waste	Wastes that are reportable priority wastes for the purposes of both section 142 and section 143 of the <i>Environment Protection Act 2017</i> .
Materials Recovery Facility (MRF)	A facility which mechanically separates commingled dry recyclables into different material streams.
Municipal waste	Waste arising from municipal or residential activities, including waste collected by, or on behalf of, councils. Also referred to as municipal solid waste (MSW).
Operator	A person or entity that operates or proposes to operate a thermal waste to energy facility.
Permitted waste	Waste that can be used for thermal waste to energy under a cap licence.
Priority waste	A subset of industrial waste which has greater regulatory controls and duties because it is prone to mismanagement, is hazardous to human health or the environment, or has potential for reuse or recycling opportunities. (Refer to <i>Environment Protection Act 2017</i> for full definition.)
Pyrolysis	Thermal breakdown of waste in the absence of air to produce char, pyrolysis oil and syngas (for example, the conversion of wood into charcoal).
Refuse-derived fuel (RDF)	A fuel produced after processing of waste to increase the calorific value, homogenise the material, remove recyclable materials, remove inert materials, or remove hazardous contaminants. The terms 'process engineered fuel (PEF)' and 'solid recovered fuel (SRF)' are often used to refer to refuse-derived fuels which are made to meet a specification or standard.
Reportable priority waste	A subset of priority waste which carries the highest levels of controls and poses the greatest level of risk to human health and the environment. (Refer to <i>Environment Protection Act 2017</i> for full definition.)
Residual waste	Residual material that remains after any source separation or reprocessing activities of recyclable materials or organics.
Residual waste sorting facility	A facility where mixed residual waste is sorted to remove some recyclable materials using a range of technologies. Includes 'dirty materials recovery facilities' (dirty MRFs).
Source separation	The practice of segregating materials into discrete material streams prior to collection by, or delivery to, processing facilities.
Technically, environmentally and economically practical (TEEP)	Technically practicable: a process that may be implemented through a system which has been technically developed and proven to function in practice. Environmentally practicable: a process for which the added value of ecological benefits justifies possible negative environmental effects of the process (for example, additional emissions from transport). Economically practicable: a process that does not cause excessive costs, considering the added value of recovery and recycling and the principle of proportionality.
Thermal waste to energy	Waste to energy processes which use heat to turn waste into useful energy resources. Examples include combustion, gasification and pyrolysis.

Term	Definition
Thermal waste to energy for the purposes of the waste to energy cap	<p>For the purposes of the cap, 'thermal waste to energy' refers to any thermal process used:</p> <ul style="list-style-type: none"> a) to recover energy from waste in the form of heat, which may be converted into steam or electricity, and/or b) to produce a fuel from waste. <p>This includes combustion, gasification and pyrolysis technologies (or any hybrid variant). (Refer to section 3.1 for full definition.)</p>
Three-bin (or service) system	A kerbside source-separation collection system with bins (or collection services) for: commingled recyclables (glass, metals, plastic, paper and cardboard); organic waste; and residual waste.
tpa	Tonnes of waste per annum
VRIP	Victorian Recycling Infrastructure Plan
Waste	Matter that is discarded, rejected, abandoned, unwanted or surplus, irrespective of any potential use or value. (Refer to the <i>Environment Protection Act 2017</i> for full definition.)
Waste biomass	Wastes that are biological in origin; wastes that are animal or plant matter, such as food waste, garden waste, timber, crop waste and biosolids. Note that only some types of waste biomass are exempt waste for the purposes of the cap (refer to section 3.2 for full definition).
Waste to energy	Any process that is used to convert waste into useful energy resources such as heat, electricity, gas and fuels. Also referred to as 'energy from waste'.
Waste to energy cap	A limit on the amount of waste that can be used as feedstock for thermal waste to energy facilities in Victoria.