

Australian Paper waste to energy works approval decision



Environment
Protection
Authority Victoria

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Summary report

Paper Australia Pty Ltd (trading as Australian Paper) has proposed construction of a 'moving grate' waste to energy facility at its Maryvale site, in Victoria's Latrobe Valley (Figure 1). The facility will process residual municipal solid waste, and industrial and commercial waste.

The proposed facility requires a works approval from the Environment Protection Authority Victoria (EPA) under the *Environment Protection Act 1970* (the Act). A works approval is required for industrial and waste management activities that have the potential for significant environmental impact. The approval permits the construction of a plant, the installation of equipment or the modification of processes.

On 24 April 2018, EPA received an application for works approval from Australian Paper. EPA requested additional information before accepting the application as complete. On 25 May 2018, EPA received the updated application and commenced its assessment. On the statutory decision due date of 28 November 2018, EPA approved the works proposal, subject to conditions.

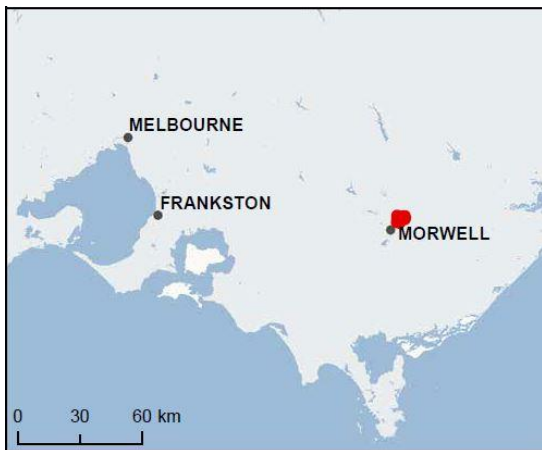


Figure 1: Map showing the location of the Australian paper facility (source – Australian Paper Works Approval Application, Jacobs 2018).

This publication summarises the key aspects of EPA's assessment and the decision-making process for the works approval application. The full works approval application assessment report is available via EPA's website.

EPA decision on the works approval application

On 28 November 2018, EPA approved the works approval application, subject to conditions.

What was proposed in the works approval application?

Australian Paper proposed building and operating a waste to energy facility adjacent to the pulp and paper mill on its Maryvale site. The proposed facility will be capable of producing steam for the operation of the mill, and electricity for the mill or for export to the grid. The facility will thermally treat approximately 650,000 tonnes (+/- 10%) per year of residual municipal solid waste and industrial and commercial waste.

Activities to follow works approval

Activities that Australian Paper will need to undertake following works approval include:

- obtaining other permits (for example, a planning permit)
- completion of final detailed designs
- securing waste contracts consistent with the works approval conditions
- a construction phase (approximately 2 years)
- a commissioning phase
- obtaining an EPA operating licence

The facility has an expected operational lifetime of 25-years.

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Works approval application process

The diagram below shows some of the key steps in the works approval application and assessment process.



Background: waste to energy

There are over 1,600 operational waste to energy facilities globally. Modern, well-run facilities are commonly found throughout countries of Europe (Sweden, France, United Kingdom) and East Asia (Japan, South Korea).

The technology generates energy as heat from the combustion of waste materials that would otherwise go to landfill. Heat is converted to steam, which can be used to generate electricity and/or in operational processes.

Victoria has a number of EPA-approved and licensed waste to energy facilities. However, these operate at a smaller scale and use different waste feedstocks from those proposed by Australian Paper.

Works approval application details

Australian Paper's Maryvale paper and pulp mill requires a significant amount of operational steam and energy. In 2016, the mill used 30 MW of electricity and approximately 6.7 PJ (6.7 million GJ) of natural gas (which represents approximately 5 per cent of Victoria's total annual gas consumption). The proposed waste to energy facility would reduce the mill's gas consumption to approximately 2 PJ per year, and generate almost all its electricity needs.

Australian Paper has conducted an international search and shortlisted three contractors with a strong track record of designing, building and commissioning waste to energy facilities which are capable of meeting the European Union's Industrial Emissions Directive and Best Available Techniques requirements.

The proposed design is based on eight equivalent operational facilities in the United Kingdom.

The facility will have capacity to treat a total annual residual waste volume of approximately 650,000 tonnes (+/- 10%), coming from Melbourne and Gippsland. The facility will not treat waste which is prescribed industrial waste, hazardous waste or pre-sorted recycling waste.

Construction is set to commence in November 2019, commissioning to commence in 2022 and project completion expected in 2023.

Proposed key design controls

The proposed key design controls include:

- continuous emission monitoring of pollutants
- continuous monitoring of crucial operating parameters (for example temperature, pollutants in flue gas) to enable optimisation of plant operation (for example waste combustion, energy generation and flue gas treatment efficiency)
- flue gas treatment system optimised to remove acidic gases, heavy metals and complex halogenated compounds (e.g. dioxins and furans)
- hazardous waste and waste that does not comply with waste acceptance criteria to be segregated and rejected

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- moving grate combustion process with sufficient temperature, residence time and turbulence to destroy harmful pollutants
- waste bunker and tipping hall operated under negative pressure to capture and prevent escape of odorous gases from waste
- storage of chemicals (such as water treatment chemicals and pollution control chemicals) in an area with containing walls and impervious floor to reduce potential for chemicals to escape into soil, groundwater and surface waters.

EPA assessment process

Relevant legislation and policies

A works approval application is required to comply with the Act and subordinate legislation. Other legislation also needs to be considered, such as the *Climate Change Act 2017*.

The Act, regulations, and state environment protection policies (SEPPs) establish a framework to ensure that waste treatment infrastructure is appropriately located, designed, constructed, operated and managed to minimise risks to the environment and public health.

EPA considers that the following SEPPs and protocols for environmental management are particularly relevant for this proposal:

- [SEPP \(Waters of Victoria\) now SEPP \(Waters\)](#)
- [SEPP \(Groundwaters of Victoria\) now SEPP \(Waters\)](#)
- [SEPP \(Prevention and Management of Contamination of Land\)](#)
- [SEPP \(Air Quality Management\)](#)
- [The Protocol for Environmental Management: Greenhouse Gas Emissions and Energy Efficiency in Industry \(Publication 824\)](#)

Departmental and agency consultation

In assessing the application, EPA consulted with several other departments and agencies including:

- Country Fire Authority
- Department of Environment, Land, Water and Planning
- Department of Health and Human Services

- Gippsland Waste and Resource Recovery Group
- Latrobe City Council
- Latrobe Health Advocate
- Metropolitan Waste and Resource Recovery Group
- Sustainability Victoria
- West Gippsland Catchment Management Authority
- WorkSafe Victoria.

Determination of best practice

The proposed development must meet international best practice. Integrated within the SEPPs is the requirement to meet best practice. This includes *'the best combination of eco-efficient techniques, methods, processes or technology used in an industry sector or activity that demonstrably minimises the environmental impact of a generator of emissions in that industry sector or activity'*. In determining best practice, EPA has considered the application against the following international standards:

- [European Union – Industrial Emissions Directive](#)
- [Best available techniques reference document - incineration](#)

In addition, members of EPA's assessment team inspected operational waste to energy facilities in the United Kingdom, France and across Scandinavia; and met with environmental regulators of these facilities and organisations associated with thermal treatment of municipal solid waste. The team reviewed European directives and member state legislation that govern the approval and oversight of waste to energy facilities.

Community engagement

Engagement by Australian Paper

Australian Paper engaged with stakeholders (including local community and business groups) prior to making its submission, including: focus group meetings held in Traralgon, Morwell and Moe; establishment of an information centre in Morwell; production of stakeholder newsletters; advertising in local newspapers; information booths in Traralgon, Morwell and Moe; and regular updates with the Maryvale Community Consultative Committee.

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Engagement by EPA

As required by the Act, the works approval application was advertised in newspapers, and communicated on a dedicated EPA webpage and the Engage Victoria website.

There was an extended period of public comment, from 30 May to 6 July 2018, with dedicated public information sessions held on 5, 6 and 19 June.

EPA received 115 submissions during the consultation period. Of the 109 submissions received through Engage Victoria, 84 supported the application, 8 supported it subject to conditions and 8 objected to it (9 submissions did not specify an opinion).

Following a review of these responses, EPA organised a community conference, held on 25 July 2018 in Traralgon. The conference, hosted by an independent chair, provided an additional opportunity for the community to raise concerns and, where possible, attempt to reach a just resolution of them, consistent with section 20B of the EP Act.

The chair subsequently published recommendations, which have been considered as part of EPA's determination.

EPA assessment

What did EPA assess?

This section summarises the findings relating to the most important issues as part of EPA's assessment. For more information on how EPA assessed all the key issues of concern, see Section 6 of the full report.

Regulatory compliance

EPA has determined that the proposal:

- is protective of human health and the environment
- is consistent with the SEPPs
- meets the Environment Protection Principles of the Act
- is consistent with the Statewide Waste and Resource Recovery Infrastructure Plan and two relevant regional plans
- will contribute to meeting waste disposal needs for Victoria, is compliant with the relevant resource recovery implementation, plans and does not undermine recycling

- has comprehensively considered potential climate change impacts in accordance with EPA's obligations
- Australian Paper meets the 'fit and proper person' requirement of the Act.

Key issues

Air emissions

Why is it a concern?

Combustion of waste generates emissions of a range of air pollutants. EPA received a number of submissions raising concerns specifically about the potential environmental and health impacts of emissions from the facility. Air quality modelling was performed according to the requirements of the SEPP.

Conclusions of the assessment

The application complied with the requirement to achieve best practice and continuous improvement for all relevant indicators and reductions to the 'maximum extent achievable' for hazardous air pollutants.

How will it be managed?

There will be a flue gas treatment system and best practice controls will achieve compliance with the SEPP.

There will be continuous monitoring of air pollutants, with the results governing treatment of the flue gas to achieve best practice emission control. EPA will require monitoring data to be made publicly available.

Best practice

Why is it a concern?

Best practice is a requirement of the SEPPs. New sources of emissions must apply best practice to manage those emissions. EPA considers best practice one of the most important requirements of the policy as changes over time will place stricter controls and requirements on new sources of emissions.

Conclusions of the assessment

Waste to energy is an established disposal method that is used globally, with international best practice standards available and used in this assessment. Accordingly, the potential environmental risks and impacts are well known, with evolving improvements in containment, control and monitoring technologies. The European Union's Industrial Emissions

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Directive (IED 2010/75/ EU) and the Best Available Techniques reference document, are key compliance policy documents that the facility will need to meet. These directives and policies are regularly updated to reflect international best practice. The applicant has committed to comply with international best practice.

How will it be managed?

The requirements of EPA approval conditions will ensure the operation of the plant is managed in accordance with best practice.

Health impacts

Why is it a concern?

Protecting human health is integral to the intent of the Act, subordinate legislation and policies. The EPA assessment process specifically considers the potential impacts to human health and how these impacts are controlled.

To supplement its application Australian Paper submitted a health impact assessment.

In addition to an assessment of the works approval application, EPA commissioned an independent literature review of publicly available research on human health impacts from air emissions from modern waste to energy facilities. The objective was to determine the possible impacts on the health of residents living close to the facility and across the Latrobe Valley region.

Conclusions of the assessment

The EPA review of literature concluded that there was little potential for health impacts or risk from exposure to emissions from modern waste to energy facilities, noting the few studies available.

The contribution of emissions from the proposed activity were found to be very low and the technology of the facility design combined with conditions of operation, capable of ensuring protection of human health.

How will it be managed?

Management will largely be through the implementation of the key design controls and operation of the facility to meet Best Practice. Conditions of EPA approvals will require routine review of the operations and emissions to ensure the necessary protections of health.

Waste feedstock

Why is it a concern?

It is critically important to understand the waste that is targeted and received at the site to ensure that the facility has the capability of treating that waste. The composition of kerbside collected waste varies both over time and across councils. The design of the facility needs to be adjusted to account for this variation.

If waste at the site is detected via onsite operational controls (e.g. visual inspection) to contain material unsuitable for combustion, that waste will be quarantined and handled in accordance with Victorian waste regulations.

Conclusions of the assessment

Twelve months of Victorian waste composition data was compared to waste composition data from the operational facility in Suffolk (UK). It was demonstrated that the wastes are comparable.

Before the final detailed design are completed, further investigation and verification of targeted kerbside waste will be performed to ensure it is fully understood.

How will it be managed?

During the operation of the plant Australian Paper will be required to perform regular audits on the waste feedstock to ensure that the facility is operated in accordance with EPA approvals.

Waste hierarchy

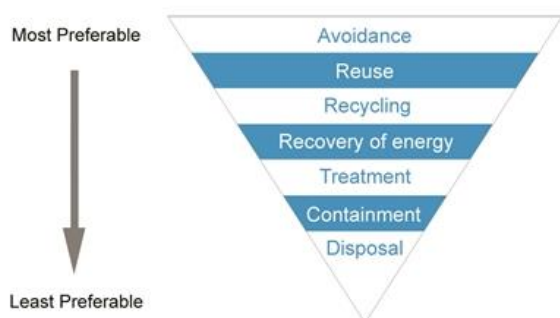
Why is it a concern?

The waste hierarchy is one of the eleven principles of the Environment Protection Act. The EPA needs to give consideration of how an application and a decision aligns with these principles.

Conclusions of the assessment

The waste hierarchy preferences recovery of energy from waste after recycling as a method for managing waste over sending the waste to landfill. Landfilling is currently the dominant option available in Victoria for residual waste. This proposal targets only residual wastes and so does not undermine recycling options.

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At the time of approving this works approval, it is not considered feasible to viably recover material from the residual waste feedstock prior to burning the waste.

How will it be managed?

The EPA has required the facility maintains capacity to install a system capable of higher waste recovery and an investigation reviewing the feasibility of building such a pre-sort facility every 5 years.

Other issues assessed

Waste generated by the facility

Incineration creates three types of ash: incinerator bottom ash, boiler ash, and air pollution control residue (also known as fly ash). Incinerator bottom ash will be stored onsite pending reuse or disposal. Boiler and fly ash will be stored in a silo pending treatment prior to being disposed of in a suitable landfill. Any waste generated by the facility will need to be disposed of in accordance with the framework of the Act, including the [Environment Protection \(Industrial Waste Resource\) Regulations 2009](#). Any reuse will require EPA approval.

Wastewater

EPA has investigated the capability of the site's existing system and has concluded that it can treat the additional wastewater generated by the new facility. The existing wastewater treatment system can accommodate the additional wastewater without exceeding the EPA licence discharge limits.

Energy use and greenhouse gas emissions

EPA has determined that the proposal will result in a net reduction in greenhouse gas emissions through its lifetime. This takes into consideration the offset of GHG emissions from the current energy use at the Australian Paper mill and through the diversion of waste from landfill.

Noise

Operational noise will meet the noise levels set in the [Noise from industry in regional Victoria](#) (publication 1411) guideline at all times. Measurements will be taken during the operation of the facility to confirm that the actual noise of operations reflects the application predictions.

Odour

Controls will be sufficient to reduce the risk of odour beyond the site boundary. The waste bunker will be constantly under negative pressure, with air injected to the combustion chamber to destroy odorous gases.

Land

To enable the construction of the facility, land will need to be cleared on the site. EPA does not regulate land clearing in Victoria. Australian Paper will perform a thorough assessment of potential existing contamination of that land and manage any contaminated material in accordance with Victorian waste regulations.

Groundwater

The facility will be built on concrete, which will minimise the risk of pollution to groundwater. The existing groundwater has been correctly assessed and described in the application, and the impact from the proposed facility is compliant with policy.

Conditions of approval

The works approval is subject to conditions. Some conditions must be met prior to commencement of construction; others relate to commissioning of the facility. In addition, operation of the facility will be regulated through an EPA-issued licence. The works approval conditions include:

- The final detailed design must be verified by an EPA-appointed industrial facilities auditor (or alternative expert approved by EPA).
- The facility is to be verified at commissioning stage by an EPA-appointed industrial facilities auditor prior to issue of an operating licence. The auditor will assess whether the facility has been constructed and is operating (in the commissioning stage) in accordance with the conditions of the approvals from EPA.
- Verification that the facility can treat the waste in a safe manner.
- Australian Paper must clearly describe the waste

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streams that will be accepted at the premises, including the waste categories, volume and sources.

- Australian Paper must develop a comprehensive commissioning programme that includes verification of stack emissions and ongoing monitoring.
- Australian Paper must make monitoring data publicly available at daily, monthly and quarterly intervals.
- An independent auditor appointed during the first three years of operation to verify that the material received onsite is compliant with the works approval and operating licence.
- Annual audits during the first three years of operation, with timing of subsequent audits determined by the auditor to verify operational performance.
- Provision for future incorporation of options to improve material recovery from the waste feedstock prior to incineration, if this becomes viable.

Appeal process

If you object to the issuing of the works approval or its conditions, you may have the decision reviewed by applying in writing within 21 days of the date of issue to:

**Registrar, Planning and Environment Division
Victorian Civil and Administrative Tribunal
(VCAT)
7th Floor, 55 King Street, Melbourne, 3000**

An application fee may be applicable when lodging an appeal with VCAT. Contact VCAT on (03) 9628 9777 for further details on fees associated with an appeal. A copy of the appeal should also be forwarded, within seven days of lodgment, to:

**Director, Development Assessments Unit
Environment Protection Authority Victoria
GPO Box 4395, Melbourne, 3001**

If you would like further information, please contact us by emailing contact@epa.vic.gov.au or calling 1300 372 842 (1300 EPA VIC).

More information

Read EPA's full assessment report on [Engage Vic](#).

Please contact EPA on 1300 372 842 (1300 EPA VIC) or via email on contact@epa.vic.gov.au

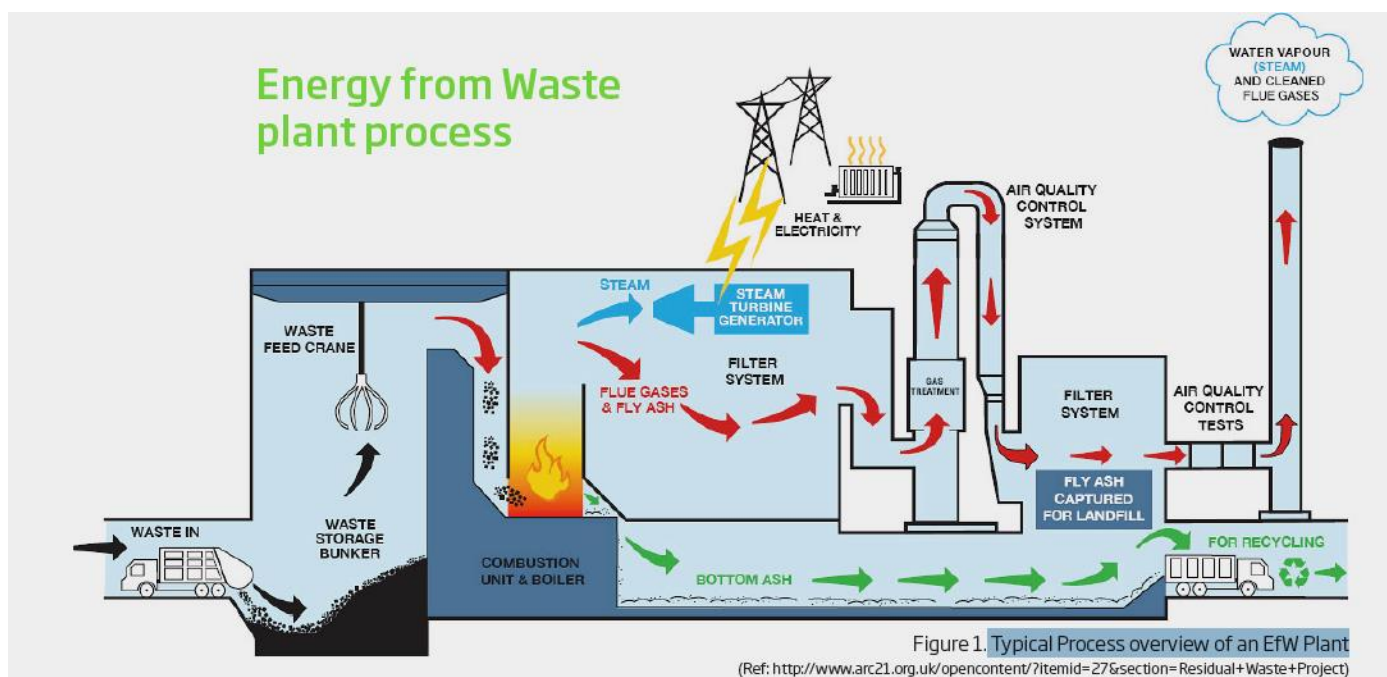


Figure 1. Typical Process overview of an EfW Plant

(Ref: <http://www.arc21.org.uk/opencontent/?itemid=27§ion=Residual+Waste+Project>)