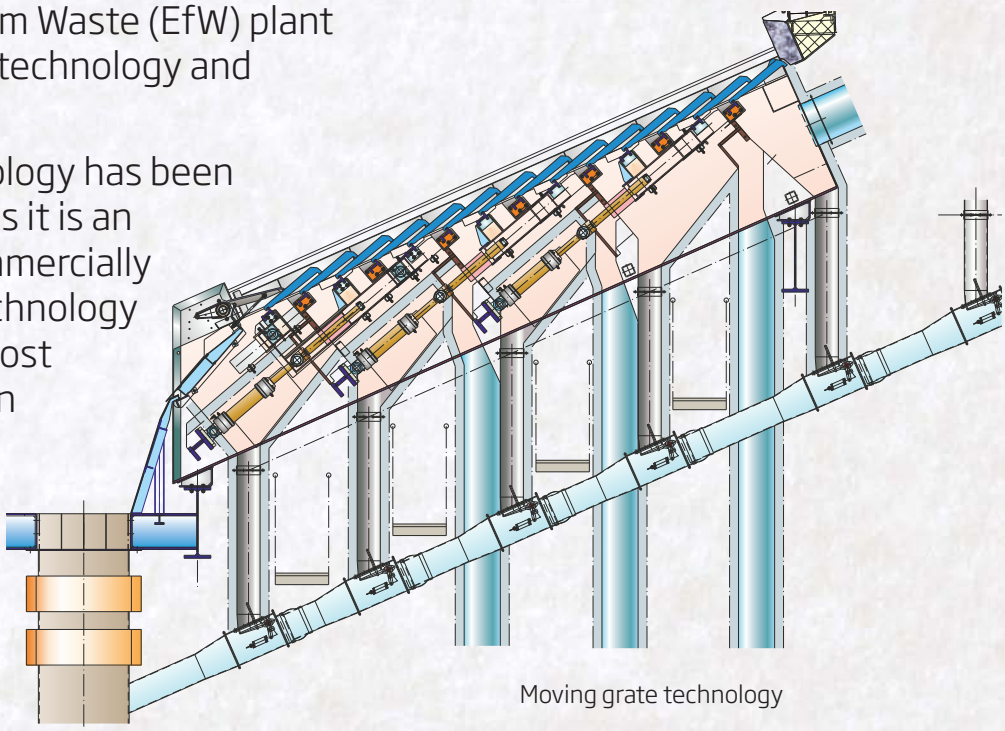
Energy from Waste – using the best available technology

Update: 01/2019

The proposed Energy from Waste (EfW) plant will use modern, reliable technology and techniques.

Moving grate EfW technology has been selected for the project as it is an environmentally and commercially proven low emissions technology that complies with the most stringent European Union standards. It is also the dominant worldwide thermal combustion technology because of its proven and reliable performance.



Moving grate technology

Environmental best practice

Victoria's Environment Protection Authority (EPA) is responsible for regulating industrial and waste management activities. To be granted an EPA Works Approval, the EfW project needs to:

- demonstrate that the siting, design, construction and operation of the facility uses best practice measures for the protection of land, water and air environments
- demonstrate superior energy efficiency and greenhouse gas emissions management, and
- provide evidence of how pollutants, odour, dust, litter, noise and residual waste is to be minimised and managed.

Australian Paper followed the EPA's best practice methodology to determine the EfW plant's suitability for the region. This involved conducting a project risk assessment, reviewing available alternative energy solutions and analysing the project's predicted emissions, economic, social and environmental considerations.

Smart design

The proposed EfW plant is an essential investment in world class waste management and resource recovery infrastructure for Victoria.

The plant design, after benchmarking of installations in the UK, Europe and Singapore, will include the following features:

1. Moving grate technology to ensure waste and air mixing to optimise combustion.
2. Flue gases will achieve a minimum temperature of 850°C for at least two seconds to completely combust organic compounds and destroy dioxin and furan.
3. Flue gas cooling with boiler Economiser section.
4. Flue gas recirculation to minimise nitrogen oxide generation in the furnace and assist with complete combustion.
5. Online flue gas oxygen measurement to ensure sufficient oxygen for complete combustion, including a carbon monoxide analyser for further combustion tuning.
6. Selective Non-Catalytic Reduction (SNCR) methods with urea injection and air mixing to reduce nitrogen oxide emissions.
7. Burnt or hydrated lime injection systems to neutralise acid gases (HCl, HF and SO_2).
8. Activated carbon injection to absorb trace heavy metals and trace hydrocarbons such as dioxins in the flue gases.
9. Single stage bag filters to collect fly ash particulates, lime and activated carbon solid residues.
10. Recirculation of the air pollution control residues to optimise reagent use and minimise solid waste.
11. A modern certified continuous emissions monitoring system (CEMS) installed on the stack linked to emission control variables, with an installed live spare.
12. Odour minimisation, including the tipping hall being a fully enclosed building maintained under negative pressure, with odorous air combusted in the boiler to minimise escape from the facility.
13. Recovery of metals from the bottom ash residues to promote recycling.
14. Superior energy recovery efficiency from the residual waste fuel through the generation of combined heat and power (steam and electricity) when compared to standalone electricity generation.

An EfW facility for the Maryvale Mill promotes 'new energy' development and skills in the Latrobe Valley and it will reduce Australian Paper's reliance on natural gas and coal-fired electricity, creating a platform for sustainable growth and investment in the region.

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