



Australian Government
Department of Infrastructure
and Regional Development

Request for InformationRequest for Information
Community Development Grants Programme

Before you begin

The Department is asking for information about your project proposal so that we may commence developing a Funding Agreement should the Australian Government decide to approve funding for the project. Missing or unclear information may delay the development of the Funding Agreement.

Please note that information requested in this document may be provided to relevant Commonwealth, State and/or local government agencies, organisations and individuals, including those you identify in this proposal. The purpose of this process is to substantiate your claims and/or statements, and to verify the capacity of your organisation to manage Australian Government funds and deliver the project. It will also seek comment on the viability of the proposal and, if appropriate, identify if the proposal is eligible for funding through an alternative funding stream.

Information relating to individuals will be protected under the Privacy Act 1988. Requests for access to such information, where rejected by proponents, will be dealt with under the provisions of the Freedom of Information Act 1982.

You will need to complete Request for Information and submit with required supporting documentation to support your application.

This information enables the Department to undertake a value with relevant money assessment and provide advice to the Minister prior to an Agreement being negotiated and funding being released. The Department will contact proponents if further information is required.

Should you have any questions on how to answer any part of the Request for Information please submit your query to cdg@infrastructure.gov.au.

How do I submit my Request for Information?

Complete and submit this form via email to: cdg@infrastructure.gov.au as soon as possible.

As your response is likely to include documents that cannot be sent electronically, please submit this form and all necessary documents in hard copy to:

s.22(1)(a)(ii)

Regional Programmes Branch
Department of Infrastructure and Regional Development
GPO Box 594
CANBERRA ACT 2601

REQUEST FOR INFORMATION

Organisation Details

1. Organisation details

Legal Name	Paper Australia Pty Ltd	ABN	63 061 583 533
Trading Name		ACN	061 583 533
GST Status	Registered		

2. What is your Business Structure?

Local Government	
Incorporated Association	
Sole Trader	
Partnership	
Company	Paper Australia Pty Ltd is a private company limited by shares
Trust – provide a copy of the trust deed	
Other, please specify	

3. Your bank account details. Provide details of the bank account where project funding will be deposited

Bank Name	
BSB	
Account Name	
Account Number	

4. Your Organisation's Physical (registered) Address

Street Address Line 1	307 Ferntree Gully Road
Street Address Line 2	
Suburb/Town	Mt Waverley
State/Territory	Victoria
Postcode	3149
Organisational Email	
Organisational Website	http://www.australianpaper.com.au/

5. Your Organisation's Postal Address

Postal Address Line 1	Private Bag 87
Postal Address Line 2	
Suburb/Town	Mt Waverley
State/Territory	Victoria
Postcode	3149

6. Authorised Person Contact Details
(e.g. CEO or the person authorised to sign Deed of Agreements)

Title (eg. Mr/Mrs/Ms/Dr)	Mr
First Name	Peter
Surname	Williams
Position	Chief Operating Officer
Telephone	s.47F(1)
Email Address	

7. Project Manager Contact Details
(e.g. the person who will lead the implementation of your project)

Title (eg. Mr/Mrs/Ms/Dr)	Mr
First Name	David
Surname	Jettner
Position	General Manager – Corporate Development
Telephone	s.47F(1) (f)
Email Address	
Additional Details (Relevant to the project, qualifications, experience, and professional memberships, if applicable)	

8. Key Personnel within the Organisation who will be involved in the project delivery, other than the authorised person or project manager

Title (eg. Mr/Mrs/Ms/Dr)	Mr
First Name	Chad
Surname	Leslie
Position	Chief Financial Officer
Telephone	s.47F(1)
Email Address	
Additional Details	

9. Within the last five (5) years, has your Organisation been subject to an event such as a Government investigation, liquidation, litigation or significant change of financial position

No	Yes
If Yes, please note which of the following events occurred and provide details below	
Government Investigation on your organisation or related entities	
Litigation or liquidation proceedings	No liquidation proceedings, but in the last five years the Company has been subject to some litigation relating to employee claims for worker's compensation and alleged breaches of the Occupational Health & Safety Act 2004 (Vic).
Significant (adverse) change of financial position not reflected in Financial statements provided	
Any other particulars likely to adversely affect your capacity to undertake this project	

Project Details

10. Project Title – Use the title from the confirmation of the election commitment. If proposing an alternative project title, provide reasons why.

Energy from Waste Planning and Development Project

11. Project location. If a street number is not known, please provide the Lot number.

Street Address Line 1	Maryvale Mill
Street Address Line 2	Maryvale Road
Suburb/Town	Morwell
State/Territory	Victoria
Postcode	3840
Longitude	146.445771
Latitude	-38.185901
Federal Electorate	Gippsland

12. Detailed Project Description (Describe in less than 150 words what the project is doing, ie construction of sport precinct including two Rugby League fields, six netball courts and amenities block including change rooms, public facilities, meeting rooms and cafeteria; upgrade of swimming pool to include new grandstand and children's waterpark; or installation of lighting at sports field including purchase and installation of four poles and footings, 16 x 15000W MZ lights and 16 shields and upgrade of existing power supply on on site.). **PROJECT BENEFITS ARE TO BE INCLUDED AT Q14 BELOW).**

The **Energy from Waste Planning and Development Project** will address the planning, preliminary engineering design and costing estimation phase for the potential construction of an Energy from Waste Plant at Australian Paper's Maryvale Mill located in the Latrobe Valley of Victoria. This work is included within the **Energy from Waste Feasibility Study**.

The full project once operational will divert approximately 650,000tonnes pa of residual waste from landfill to the higher order use of energy generation by thermal combustion. This energy will take two forms including steam/heat and electricity for consumption within the Maryvale Pulp and Paper manufacturing facility with the option to export to the National Electricity Grid. The resultant residual ash stream shall be targeted for re-use as road base and concrete aggregate replacement achieving an estimated overall 96% recovery/re-use of the input residual waste.

The preliminary engineering design will evaluate the two most likely technologies and develop an integrated and robust design for the facility including storage bunker, combustion lines, boilers, flue gas treatment, residual ash sorting and storage, electrical turbine, steam piping, electrical transmission, distributed control systems and associated ancillaries.

The cost estimation will assess the relevant aspects of the project including technical, commercial, social and management cost elements and complete sensitivity analyses.

Other planning elements necessary for this stage include environmental assessments and preliminary approvals, and infrastructure utilization planning and modelling.

13. If the CDG funded project is part of a larger project, please provide details below (ie CDG is funding one stage of a multi-stage project).

CDG is funding the planning and design, approvals and cost estimation components of this project.

14. Detail/list the economic and community benefits of the proposal (and the larger project if applicable), and how it contributes to programme outcomes.
(See Guidelines - Section 1.1 Programme Outcomes).

Economic Benefits:

This Energy from Waste Planning and Development Project will develop the preliminary designs, cost estimations and associated approvals work through to project evaluation and if viable establish a bankable business case.

The Energy from Waste Feasibility Study, which includes the planning and development project, will employ an estimated 36 full time equivalent (FTE) employees and consultants engaged on various elements of the work.

The full project once operational will deliver energy security to the AP Maryvale Mill with a mix of electricity and steam to offset purchased electricity and purchased natural gas (NG). Maintaining the economic viability of Maryvale Mill will help protect the 1200 direct and 5786 flow on jobs, \$911 million in gross domestic product (GDP) and \$494million in household income currently generated from this business.

In turn this will release an estimated 3.6PJ to 4.2PJ of natural gas and up to 30MW electricity back into the wider energy network. Engineering design and modelling will evaluate the optimum mix of energy including consideration of Mill reliability and stability aspects.

This will deliver an estimated 46 FTE and up to 800 construction jobs into the Latrobe Valley economy at a time of significant business closures, rising unemployment and challenging socio economic impacts.

With an increased utilization of infrastructure such as rail this may attract other businesses and industries by leveraging that infrastructure's economic potential.

Community Benefits

The Energy from Waste Feasibility Study will explore the community expectations and seek to engage in a collaborative manner regarding the suitability of location, design, operation, logistics and net benefit.

In addition the Feasibility Study findings will provide insight to policy makers on the viability of market forces to deliver the Advanced Resource Recovery Technologies expected to replace landfills over time.

The full project once operational will contribute to Australia's climate change commitments with a conservative reduction in equivalent carbon dioxide emissions of more than 500,000tonnes CO_{2-e} per year. Providing support for the Victorian Government's commitment seeking to reduce the state's greenhouse gas emissions by 15 to 20 per cent (from 2005 levels) by the year 2020, setting Victoria on the path to net zero emissions by 2050. Providing support for the Australian Government target to reduce emissions to 26–28 per cent on 2005 levels by 2030.

This will support the Latrobe City Council and surrounding regional Shires to contribute to climate change improvements with a further benefit of reducing future landfill development costs, reducing landfill legacy costs by extending the current life of the existing landfills and avoiding future landfills.

This will support recycling efforts by providing a viable alternative to landfill for the estimated 13% of residual waste dumped from Material Recovery Facilities (MRF). This will lift the total recycled/re-use performance from 87% to 98%.

The ongoing economic viability of Maryvale Mill and Australian Paper will enable future contributions to worthwhile community enterprises such as the Breast Cancer Network Australia and Planet Ark.

15. Has your organisation prepared a Business Case/Plan, or undertaken a Feasibility Study, Market Research or Community Consultation process within the last two years in relation to this project?

No	Yes
If Yes, please supply details below. If documents have been developed please supply as evidence with your proposal.	
Australian Paper has been investigating alternative baseload renewable energy options for the last several years.	
Recently AP has conducted a table top analysis of this Energy from Waste project to establish materials, engineering and financial viability.	
These investigations have been incorporated into the working document "Maryvale Energy Options" (copy attached). This document's intent is to regularly update and capture organizational knowledge and learnings.	
These investigations have been summarized in the Government presentation (Copy attached)	
This initial work has formed the basis for a decision to move to a Feasibility Study including the planning, design, and cost estimation phase of the project.	

16. How many full-time equivalent employee construction jobs and how many full-time equivalent employee ongoing jobs will be created by this project?
Please note a full-time equivalent employee (FTE) is based on an average of 1,800 hours over a 48 week period.

Planning and Development Project (within Feasibility Study)	
How many full-time equivalent jobs will be created during construction?	36
How many full-time equivalent jobs will be retained as a direct result of this project?	0
Full Energy from Waste Project	
How many full-time equivalent jobs will be created during construction?	500 to 800
How many full-time equivalent jobs will be retained as a direct result of this project?	46

17. Please provide the following project dates:

Estimated Project Start Date:	1 July 2017
Estimated Project Finish Date:	30 June 2018
Estimated Construction Start Date:	1 Jan 2019
Estimated Construction Finish Date:	31 Dec 2021

18. Indicate the current stage of development of your proposal. Provide any supporting documents if available (i.e. concept or preliminary designs, final designs, independent cost estimates, ready to commence tender/procurement process or preferred contractor selected and contracted for the project.)

Document	Stage of development
Maryvale Energy Options (Pre-Feasibility)	Working Document
Request for Co-funding of Planning Phase	Working to finalise agreements
Lead Consultant Expressions of Interest	Complete
Support Consultants project introductions	Complete
Preparatory Discussions with potential Financiers	Complete
Preliminary Discussions with Victorian EPA	Complete
Support of Local Councils – Latrobe City, Wellington Shire	Complete
Support of Regional Entities – C4G, CFMEU, GTLC, Qube Logistics	Complete
Project Planning Phase Scope	Complete
Lead Eng Consultant Request For Tender	In Development
Project Risk Matrix	Ongoing

19. Identify and provide details of who will own the asset on completion. Where land and buildings are owned by a Third Party, have leasing arrangements been confirmed and secured? (Written evidence must be provided).

Organisation	Paper Australia		
ABN / ACN	63 061 583 533/061 583 533		
Street Address Line 1	307 Ferntree Gully Road		
Street Address Line 2			
Suburb/Town	Mount Waverley		
State/Territory	Victoria		
Postcode	3149		
Telephone	(w) 03 8540 2300	(m)	(f) 03 8540 2280
Leasing arrangements	NA		

20. Provide detail of who will manage and maintain the project after completion and who will provide the funding.

Paper Australia will take this project to financing stage, if appropriate.

21. Provide information on at least three projects your organisation has managed in the past five years which have received funds from either the Commonwealth, state government or local government authority (local government authority funded projects do not apply for applicants who are a local government authority).

Jurisdiction and managing Department Name	Project Name	Funding Amount
Commonwealth	De-Inked Pulp (DIP) Plant	\$9,500,000

s.45(1)

Financial Details

22. What is the total project cost? (Use GST exclusive amounts) \$7,500,000 _

23. What is the amount of funding committed by the Australian Government? (Use GST exclusive amounts) \$ 2,500,000 _

24. Partner funding. Complete the table with details of all confirmed funding to this project, and the status of the funding.

Partner name	ABN	Amount (GST Excl)	Cash / In Kind	Received, Confirmed, To be confirmed
Paper Australia	63 061 583 533	\$2.5M	Cash & In Kind	Subject to co-funding
State Government of Victoria		\$2.5M	Cash	Pending and subject to co-funding

25. Provide details of the arrangements in place to provide for any cost overruns or funding shortfalls on your proposed project.

This project includes a contingency of 20%.

Any remaining contingency at project conclusion will be returned to providers at pro rata rates.

26. Have you completed a tender/procurement process and appointed a preferred contractor or do you have a cost estimate which has been independently developed/assessed?

Please provide details below:

AP has developed a detailed estimate of the project based on detailed task list and estimated hours. Over the last decade AP has invested over \$1billion in capital projects which enables a strong level of in house cost estimation capability and confidence in the estimate.

We have engaged with four major engineering consultants to establish expressions of interest. One of these organisations has indicated that our estimate is broadly in line with their expectations of such a project.

A formal request for tender document is currently in development.

List of Cost Items

Planning / Design

Construction/Fit-out

Research and Development

Plant/Equipment Hire

Plant/Equipment Purchase

Government Approvals

Operating Costs (e.g. rent, computers, etc)

Wages, salary and superannuation

Consultants/contractors

Project Management

Materials

Training

Marketing/Promotion

Legal/accounting

Other Costs

NOTE1: *Evidence of these costs are to be provided as a required supporting document (e.g. cost estimate, quotes, market comparisons, valuations, contracted cost, etc)*

NOTE2: *Australian Government Funding will not be provided for ongoing operation and maintenance costs or for salaries for existing staff members of the funding proponent organization.*

REQUIRED SUPPORTING INFORMATION

- Audited financial statements for the last two (2) years (only required for projects with a total project cost over \$80,000);
- Cash flow forecasts for the next five (5) years (only required for projects with a total project cost in excess of \$1.5 million for state or local government authorities or \$1 million for other organisations);
- Business Plan and/or Feasibility Study (if applicable);
- Project Management Plan (if applicable);
- Market research/community consultation (if applicable)
- Asset Operations Management Plan (if applicable);
- Confirmation of partnership funding including evidence of bank borrowings (if applicable)
- Evidence of third party leasing arrangements (if applicable)
- Designs
- Cost estimate or contracted cost

Legal Authorisation

I Peter Williams <full name of Authorised Officer>
 as Chief Operating Officer <position/title>
 of Australian Paper <organisation name>
Private Bag 87 <postal address> >
Mt Waverley Vic 3149

confirm that:

- I am a person authorised to make this declaration on behalf of my organisation and all relevant persons have made a full disclosure of information.
- The information provided in this form and all appended documents is complete and correct. I understand that information provided in this *Request for Information* will form the basis of the funding agreement and that giving false or misleading information is a serious offence.
- The Department of Infrastructure and Regional Development (the Department) is authorised to undertake the necessary steps to assess the proposal from my organisation by checking the information provided in this proposal, or by obtaining additional information from:
 - Departmental databases and records, including information related to previous funding provided to my organisation;
 - Other Australian Government agencies such as the Australian Taxation Office and the Australian Securities and Investments Commission;
 - State, Territory or Local Government agencies;
 - Law enforcement agencies;
 - Credit reference agencies;
 - Courts or Tribunals; and
 - Any other appropriate organisation, information source or person as reasonably required to perform background checks.
- I agree that the Department may arrange for an Independent Viability Assessment (IVA) of my project by an external adviser or consultant to the Department. Where applicable, the Department may request a yearly breakdown of costs for on-going operational and maintenance of the complete project for a minimum of five (5) years.
- To the best of my knowledge, I have disclosed (Part A Declaration of Conflict of Interest) all actual, apparent or potential conflicts of interest that would prevent my organisation from proceeding with the proposal outlined in this *Request for Information* or from entering into a Funding Agreement with the Australian Government to deliver a project which relates to this *Request for Information*.

s.47F(1)

Signed:.....

Date: 13 / 6 / 17

Declaration of Conflict of Interest

Please complete either Part I or Part II of the Declaration of Conflict of Interest

Part I – No Known Conflict

I confirm that at the time of signing, to the best of my knowledge I am unaware of any actual, apparent or potential conflicts of interest that would prevent my organisation from proceeding with the proposal outlined in this *Request for Information* or from entering into a Funding Agreement with the Australian Government to deliver a project which relates to this *Request for Information*.

I undertake that if at any time I become aware that I, or any other employees or persons associated with the **Paper Australia Pty Ltd** have an actual, apparent or potential conflict of interest, then I will:

- immediately notify the Department of Infrastructure and Regional Development in writing of that Conflict and of the steps the **Paper Australia Pty Ltd** propose to take to resolve or otherwise deal with the Conflict;
- make full disclosure to the Department of Infrastructure and Regional Development of all relevant information relating to the Conflict; and
- take such steps as the Department of Infrastructure and Regional Development may, if they choose to, reasonably require to resolve or otherwise deal with that Conflict.

I understand that if I fail to notify the Department of any actual, apparent or potential conflicts of interest or am unable or unwilling to resolve or deal with the Conflict as required by the terms noted above, the Department of Infrastructure and Regional Development may seek to terminate any Funding Agreement established in relation to a project which relates to this *Request for Information*.

s.47F(1)



(signature)

..... **Peter Williams**

(printed name)

13/6/17

s.47F(1)



(date)

(signature of witness)

..... **David Jettner**

(printed name of witness)

13/6/2017

(date)

Part II - Disclosure of Interests

I disclose the following interests:

..... Nil

.....

.....

.....

I undertake that if at any time I have an actual, apparent or potential conflict of interest, then I will:

- immediately notify the Department of Infrastructure and Regional Development in writing of that Conflict and of the steps the **Paper Australia Pty Ltd** propose to take to resolve or otherwise deal with the Conflict;
- make full disclosure to the Department Infrastructure and Regional Development of all relevant information relating to the Conflict; and
- take such steps as the Department of Infrastructure and Regional Development may, if they choose to, reasonably require to resolve or otherwise deal with that Conflict.

I understand that if I fail to notify the Department of Infrastructure and Regional Development of any actual, apparent or potential conflicts of interest or am unable or unwilling to resolve or deal with the Conflict as required by the terms noted above, the Department of Infrastructure and Regional Development may seek to terminate any Funding Agreement established in relation to a project which relates to this *Request for Information*.

s.47F(1)

..... (signature)

Peter Williams

..... (printed name)

13/6/17

..... (date)

s.47F(1)

..... (signature) of witness

DAVID JETTNER

..... (printed name of witness)

Any information disclosed in this form will only be used by the Australian Government for the purposes of assessing CDG proposals and will be maintained in accordance with the Privacy Act 1988.

Energy from Waste (EfW)

Maryvale Mill, Australian Paper



1. VISION
2. BACKGROUND
3. OBJECTIVE
4. EfW TECHNOLOGY
5. TABLE TOP
6. NEXT STEPS
7. FEASIBILITY

Maryvale Background



5786 FTE including indirect
Largest Employer in Latrobe Valley
#1 Exporter via Port of Melbourne
Largest office paper recycler in southern hemisphere
Largest industrial user of recycled water from GWF
Largest freight rail user in Gippsland.
Largest base load renewable energy generator in Vic.

Maryvale Mill

- 344 Hectares (850 acres), Site+Wetlands.
- 1.8million tpa of wood, all certified sustainable resource
- 3 pulp mills + state-of-the-art bleaching
- 5 Paper Machines producing 600,000tpa
- Extensive water filtration, recycling & treatment facilities
- DIP Recycling Plant,
- Packaging Recycling Plant
- GWF offsite treatment of liquid trade waste

Maryvale Mill Energy

- 2 Recovery Boilers (~300tph Steam)
- 3 gas fired boilers (~200tph Steam)
- Major Natural Gas user (6.75PJ)
- Produce ~50MWe, Import ~30MWe
- 4 back pressure steam turbine alternators
- >55% Renewable power
- RECs 83,727 in 2016
- Existing boiler feedwater filtration plant

Maryvale: A History of Sustainability

- Imported Energy Efficiency
- RECs ~85,000 per year
- Landfill rate falling
- Reduce water usage

s.47G(1), s.47(1)(b)



s.47G(1), s.47(1)(b)

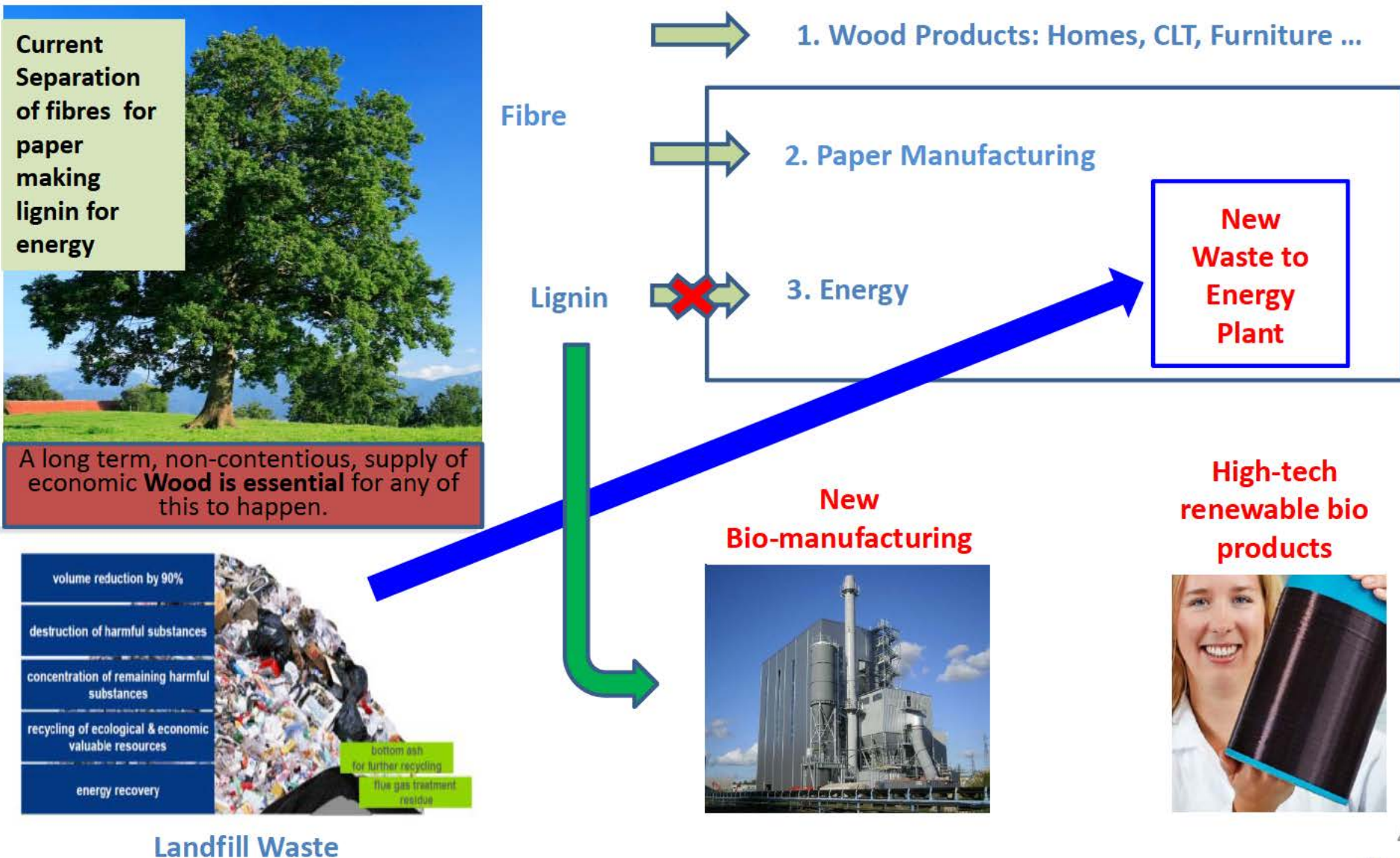


s.47G(1), s.47(1)(b)



AP Vision: 4 Pillars

- Fibre Security
- Mill Stabilisation
- Energy From Waste
- Bio Manufacturing

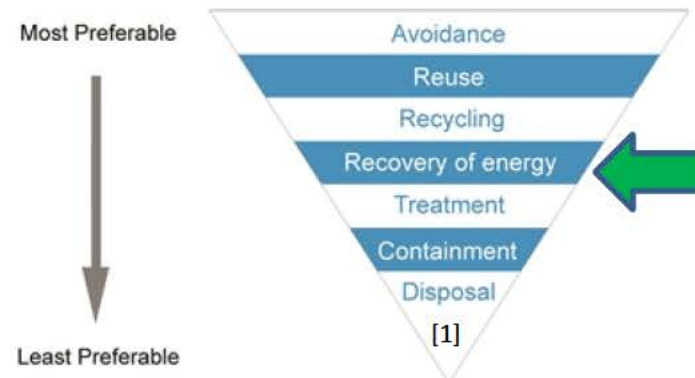


Objective – AP Future Direction

1. Reduce risk of energy market volatility - Energy from Waste
2. Diversify products into growing markets – bio manufacturing

- Generate baseload energy for industrial processes from renewable resource
- Displace the majority of imported natural gas & electricity
- Release Lignin as bio manufacturing feedstock

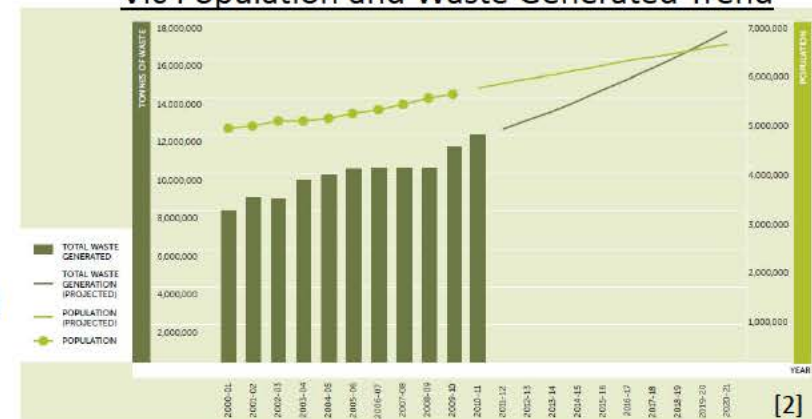
s.47G(1), s.47(1)(b)



- Apply waste management hierarchy
- Engage with Waste Management Resource Recovery Groups – Metro & Gippsland

- Provide sustainable solution to landfill problem
- Net GHG emission reductions [3], [4], [5], [6]
 (= Avoided Landfill emissions – EfW emissions + avoided coal emissions)

Vic Population and Waste Generated Trend



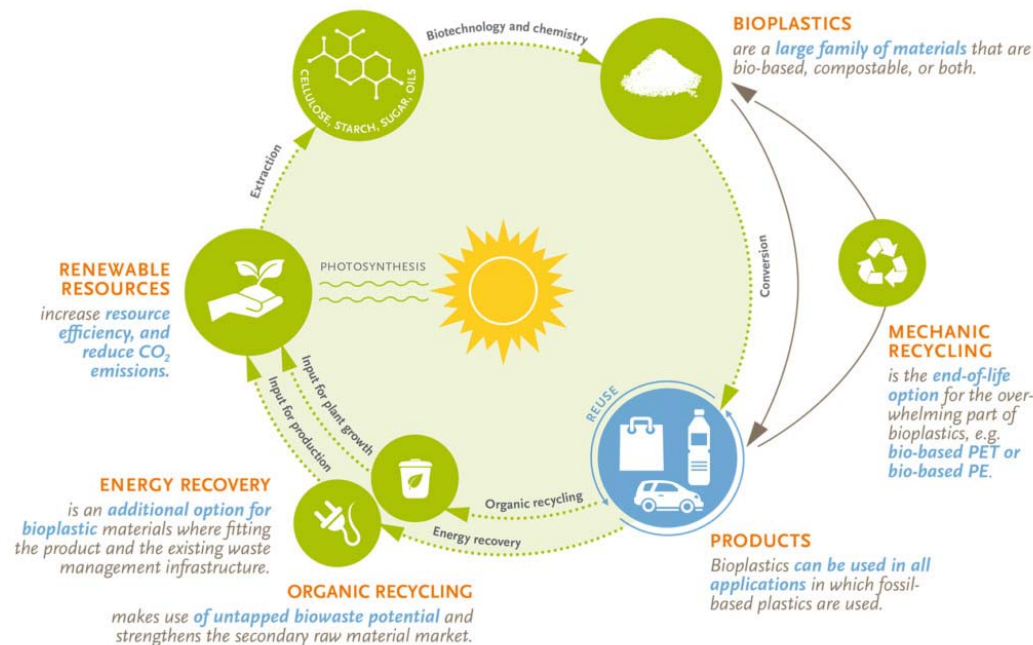
Objective – AP Future Direction

1. Reduce risk of energy market volatility - Energy from Waste
2. Diversify products into growing markets – bio manufacturing

Shaping the future with trees – new generation bio products derived from renewable forest resources:

- Release Lignin as bio manufacturing feedstock
- Develop new products for sustainable and new age manufacturing

Bioplastics – closing the loop



Source: European Bioplastics e.V.

APPLICATION SECTORS:



ENERGY



MATERIALS



PACKAGING

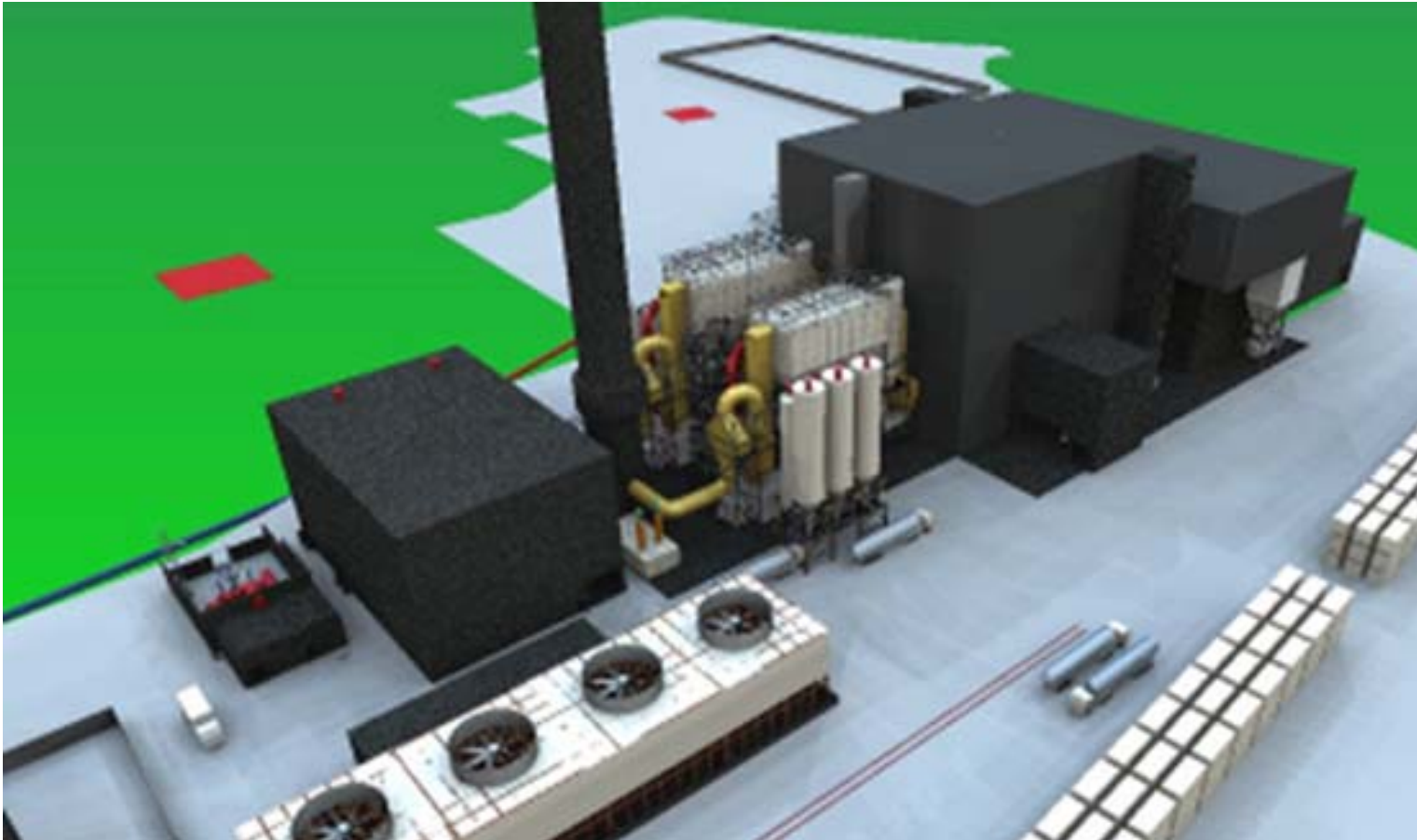


BUILDING

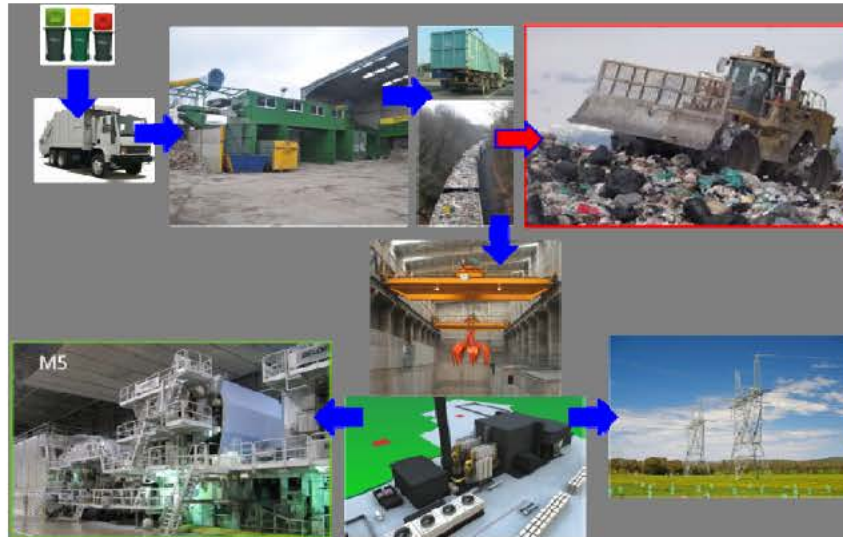


ADHESIVES & PAINTS

Energy from Waste (EfW)

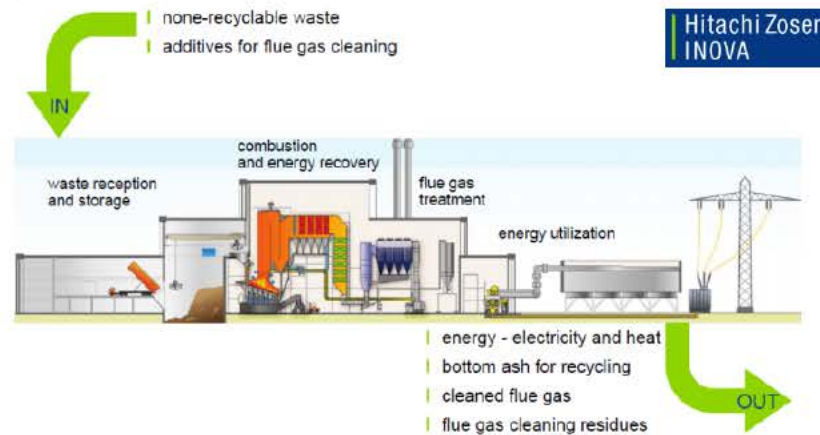


Energy from Waste(EfW) is a reality



Energy from Waste
An Essential Part of a Sustainable Waste Management System

Hitachi Zosen
INOVA



Ferrybridge UK Commenced in 2016



Hitachi Zosen
INOVA



Maryvale Mill Operations in 2021



Start-up
Project Investment
Jobs

2016
2016 £300m \$550m AUD
Over 500 Construction, 46 Direct FTE

Start-up
Project Investment
Jobs

aim 2021/22 (subject to approval)
Estimated \$600m AUD
Up to 800 Construction, 46 Direct FTE

EfW Technology Options

Vic EPA EfW Technologies:

- Thermal
 - Combustion (TC)
 - Gasification
 - Pyrolysis
- Biological
 - Anaerobic digestion
 - Fermentation

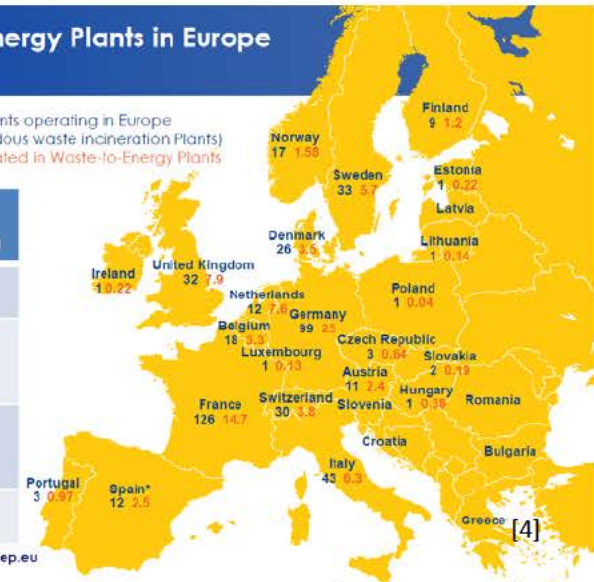
[1]

Most common is thermal combustion. [1]

Waste-to-Energy Plants in Europe 2014

- Waste-to-Energy Plants operating in Europe (not including hazardous waste incineration Plants)
- Waste thermally treated in Waste-to-Energy Plants in million tonnes

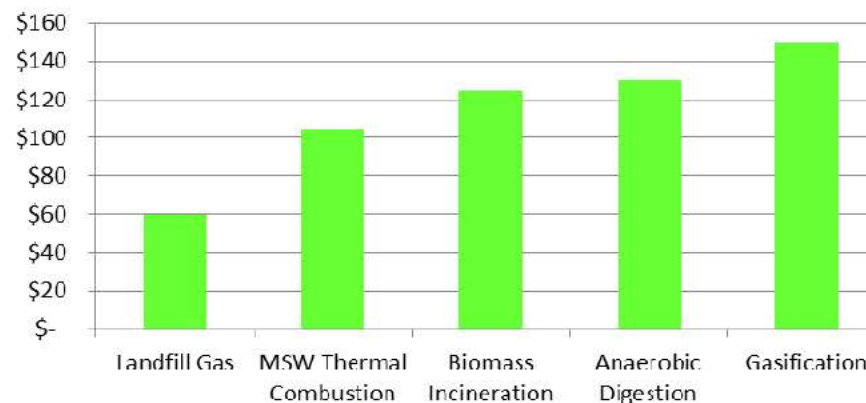
Region	EfW Plants Installed	% Plants with Thermal Combustion
Japan	~1000 [3]	84% [6]
Europe	455 [2]	France 90% [2] Germany 95% [2]
China & Sth Korea	~120 [3]	~90% [6]
USA	86 [2]	



info@cewep.eu • www.cewep.eu

SE Asia is seen as an expanding opportunity for EfW with increasing household waste and landfill environmental issues. [7]

EfW Technologies Total Equivalent Costs (US\$/MWh) [5]

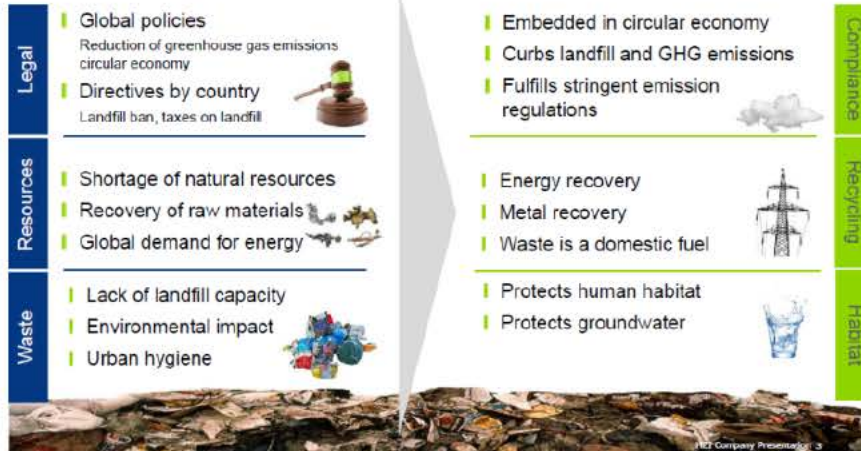


EfW Technology	Notes
Landfill Gas	Need incremental landfill volumes Methane = 25 x equivalent CO ₂ tonnes
MSW Thermal Combustion	Incorporates gate fees & energy Mature and Stable
Biomass Incineration	Only captures energy produced
Anaerobic Digestion	Australian history shows 5 facilities have closed for viability
Gasification	Promising
Pyrolysis	Immature technology

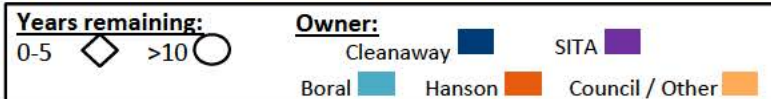
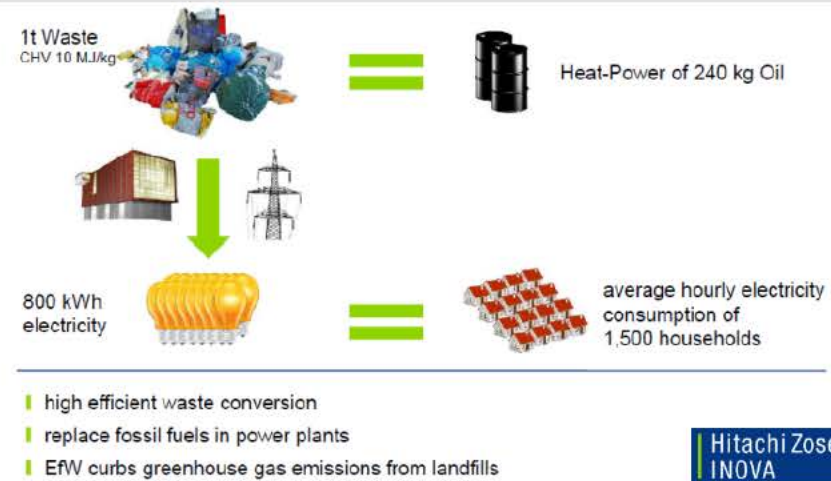
Why waste feedstock?

Waste Problems & Solutions

Waste Industry Drivers



Energy from Waste - Sustainable Energy



Significant landfills in Melbourne (ordered by remaining capacity)

Site	Name (Owner / operator)	Annual volume	Expected closure
1	Ravenhall landfill (Cleanaway)	1,000kt	>2035
2	Werribee Landfill (Council)	>500kt	>2035
3	Wollert Landfill (Hanson)	300kt	>2035
4	Hampton Park (Suez)	400kt	~2025
5	Fraser Road (TPI)	300kt	2017
6	Victory Road (TPI)	350kt	2017*
7	Carroll Road (TPI)		2015*
8	Clayton Regional Landfill (Council)	150kt	2017

Impending
closures

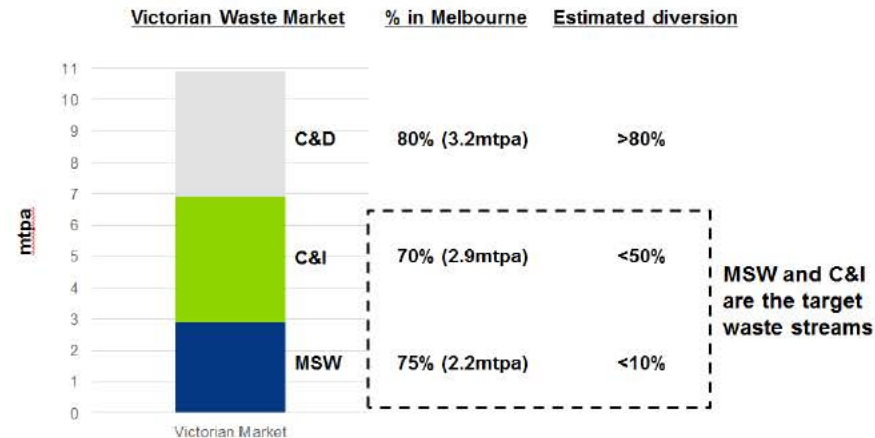
EfW feedstock availability

A real opportunity exists to win the 500ktpa of MSW and C&I waste from SE Melbourne and transport it to Maryvale



Municipal Solid Waste (MSW)
Commercial & Industrial (C&I)
Construction & Demolition (C&D)

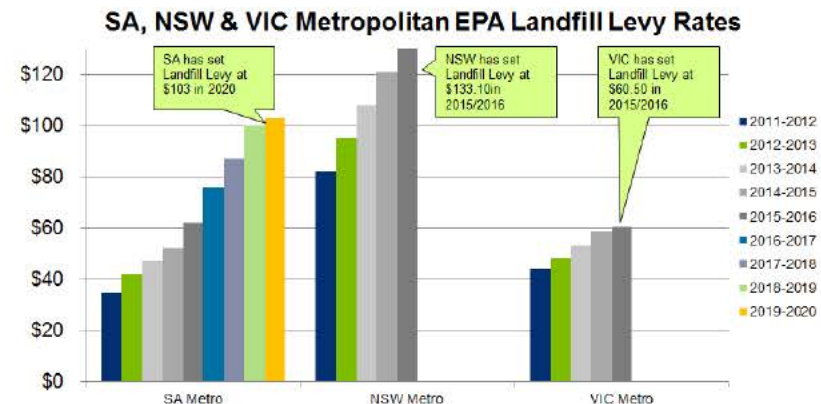
The Vic waste market is ~11m tonnes in total and is growing at approximately 2% per year (~200ktpa); MSW & C&I is the target



Energy from waste policy supports: waste levies by state



EPA Landfill Levy Rates



Victorian Landfill Levy rates are significantly less than those in NSW and SA.

EfW Greenhouse Gas Emissions

GHG Emissions (CO _{2-e} tpa)	Best Case	Project	Worst Case
Transport Loss	2,916	3,332	3,749
Landfill Methane Fugitive Gain	- 345,424	- 342,064	- 319,687
EfW Loss	224,633	248,144	299,510
Grid Elec Gain	- 212,605	- 196,200	- 178,760
Natural Gas Gain	- 215,880	- 215,880	- 205,600
NET IMPACT (CO_{2-e} tpa)	- 546,360	- 502,667	- 400,788

BASE PROJECT SCOPE

- 1 LINE FEEDS STEAM INTO BACK PRESSURE TURBINES ELIMINATING NATURAL GAS
- 1 LINE FEEDS STEAM INTO CONDENSING TURBINE ELIMINATING GRID ELECTRICITY
- LESS ELECTRICITY CONSUMED BY EfW
- FEEDSTOCK 500KTPA FROM SE MELBOURNE, 150KTPA FROM GIPPLSAND
- 300KTA MSW and 350KTA C&I
- LANDFILL FUGITIVE EMISSIONS ONLY

Energy Balance

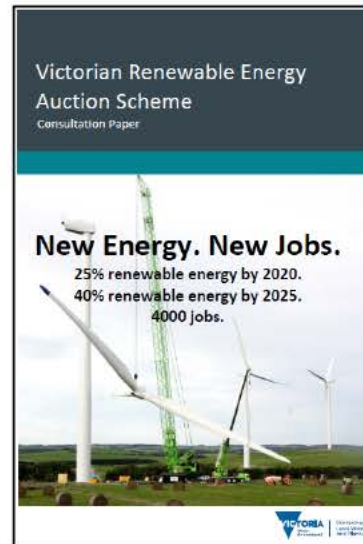
Maryvale Mill (8000hrs/yr)	Energy (MWh/yr)	Notes
Purchased Elec Power	30	
Purchased Gas for Elec	20	Excludes Kiln Gas
Recovery Elec	30	100% renewable energy (Remains in EfW scenario)
Total Elec Energy	80	
EfW	58	>50% renewable energy (Replaces Purchased)

** A range of scenarios exist and the Feasibility Study will test the assumptions and evaluate in detail the most sustainable option.*

Why Australian Paper?

Community:

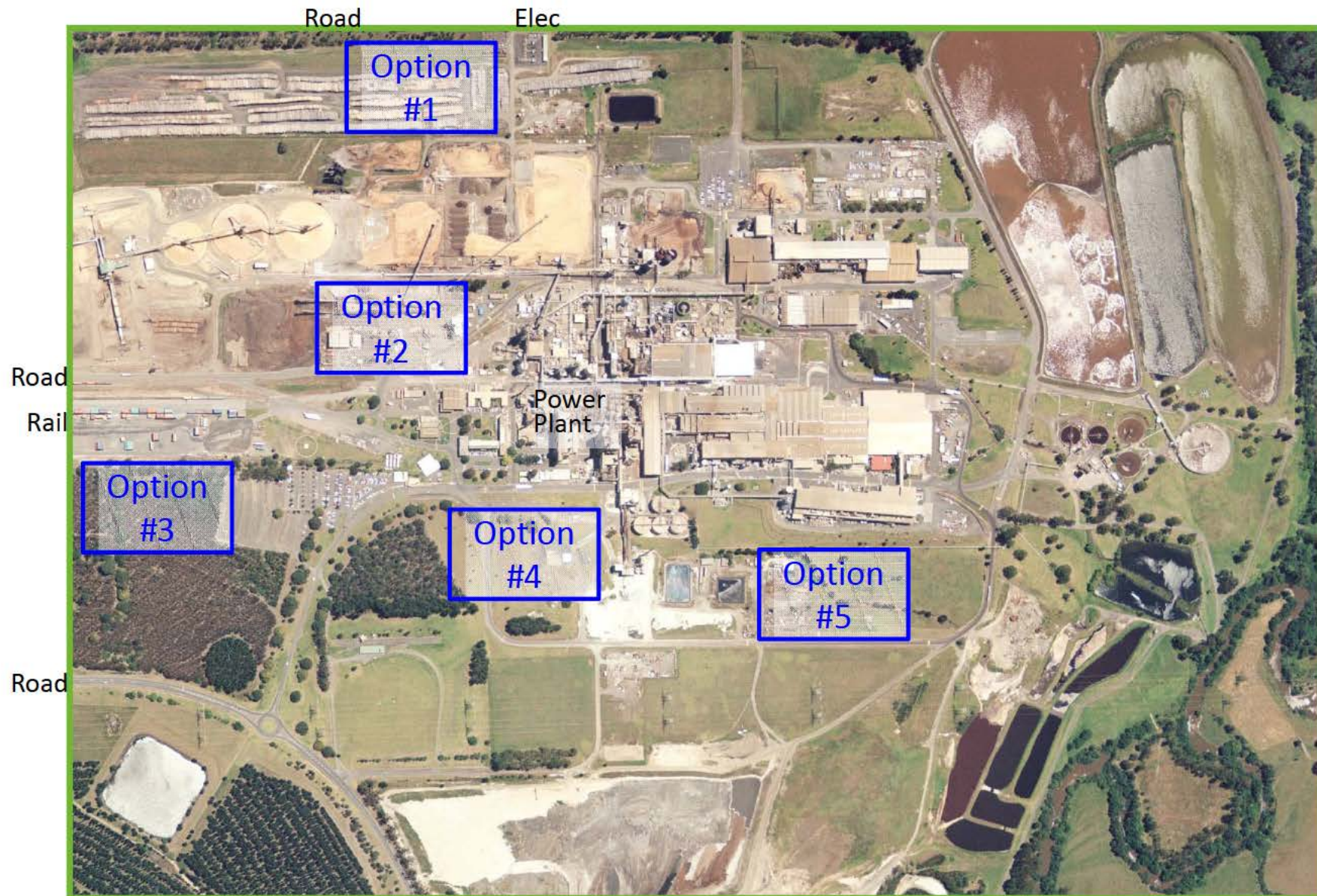
- Net GHG Emission reduction
- Contribution to VRET
- Reduce waste sent to landfill
 - Landfill life extensions
 - Landfill management and development cost reduction
- Higher order use of residual waste
- Fossil fuel displacement
- Employment opportunities & skills development
- Alignment with MWRRG Plan
 - Utilisation of waste as a resource
 - Reduce waste sent to landfill (25% in 10yrs = 300,000tpa)
 - Planning for population Growth (South East corridor)
 - Avoidance of new SE landfill
 - Avoidance of cross City waste movement
 - Create opportunities for aggregating commercial waste streams
 - Develop WRRG hubs



Maryvale Mill:

- Protect existing jobs (5786)
- Create new jobs and industry for Latrobe Valley
- Integrated with Mill (Combined heat & power) to achieve higher efficiencies than standalone at other locations
- Economically viable and based on proven technology deployed at scale internationally
- Utilisation of suitable land, infrastructure & logistics

Maryvale Site Location Options



EfW Table Top Assessment

FINANCIALS

- 650,000t MSW & C&I EfW Boiler
- 500kt SE Melb, 150kt Gippsland

s.47G(1), s.47(1)(b)

- Capacity = 2 Lines @ 4.2PJ (29MW_e) each

KEY RISKS




- Construction
- Supply security (>20yr)
- Waste contamination (emissions & residues)
- Residues (~20%) beneficial re-use options
- Competing business models
- Long lead time & innovative technologies
- Community & ENGO acceptance
- Landfill policy
- Elec Grid supply arrangements

EfW Maryvale		2016				2017				2018				2019				2020				2021				2022			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
CONCEPT DEVELOPMENT	9m																												
PRE-FEASIBILITY	6m																												
PRELIMINARY APPROVAL																													
FEASIBILITY - Technical	12m																												
FEASIBILITY - Stakeholders	6m																												
IN PRINCIPLE APPROVAL	3m																												
DETAILED DESIGN	9m																												
FINAL APPROVAL & FUNDING	6m																												
CONSTRUCTION	24m																												
COMMISSIONING	6m																												
OPTIMISATION	6m																												
TODAY																													

EfW Financial Overview

s.47G(1), s.47(1)(b)



Next Steps

- Stakeholder Briefings – **Obtain Govt in principle support**
- Source Feasibility co-funding (\$2.5M, \$2.5M, \$2.5M)
- Finalise milestones
- Establish oversight progress meetings
- Allocate internal resources
- Engage external resources
- Wider Stakeholder communications

Feasibility Study Structure

AP EXECUTIVE

Project Lead: DJ

Project Lead Team (AP & Senior Consultant)

Technical

AP

Engineering Consultation

Feedstock Consultation

Emissions Consultation

Supply Chain Consultation

Commercial

AP

Capital Funding Consultation

Financial Modelling

Social

AP

Community Consultative Committee

Stakeholder Consultation

Government & Agencies

Dept
Enviro &
Energy

DEDJTR

LCC

Dept
Infrastructure
& Regional
Development

RDV

LVA

Transport

WRRG

Dept
Industry
Innovation
& Science

DELWP

Vic EPA

Clean
Energy
Regulator

Sustainy
Vic

EfW Feasibility Cost Estimate



- Business Case recommendations
- Governance, quality & timing
- Govt & Key Stakeholder engagement
- Residue re-use/disposal
- Energy Network Integration
- Logistics Study
- Risk assessment &
- Management plan

MANAGE

s.47G(1), s.47(1)(b)

- Community Engagement
- Employment Impacts
- Environmental Impacts
- Economic Impacts
- Circular Economic Assessment

SOCIAL

s.47G(1), s.47(1)(b)

COMMERCIAL

s.47G(1), s.47(1)(b)

- Business case analysis
- Procurement assessment
- Municipal waste, logistics, construction
- Life-Cycle costing & Sensitivity Analysis
- Finance Options & recommendations

TECHNICAL

s.47G(1), s.47(1)(b)

- Research analysis
- Waste & residues
- Technology Options
- Optimal Mill Integration
- Preliminary Design
- Project Cost Estimate


TOTAL

s.47G(1), s.47(1)(b)

Additional Information in relation to questions

EfW Financial Overview

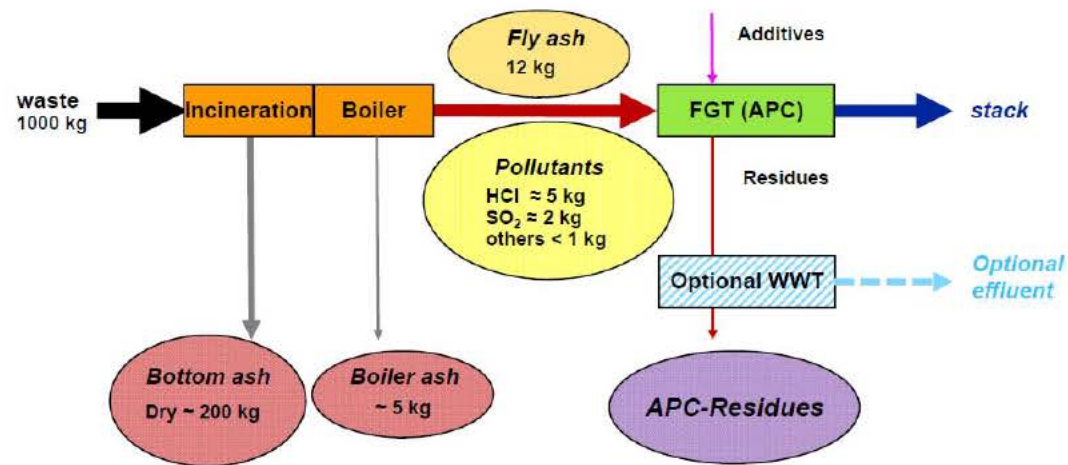
s.47G(1), s.47(1)(b)



EfW Pollution Control

Hitachi Zosen
INOVA

Residues in Energy-from-Waste Plant



APC = Air Pollution Control = Flue Gas Treatment (FGT)
WWT = Waste water treatment

H2I Client

- Temperature of Boiler 850C-950C
- de-novo dioxin synthesis at 350C - 400C removed via the APC
- Best Available Technology is defined by European IED (DIRECTIVE 2010/75/EU) and requires minimum 2s residence over 850C at all times measured after the last injection of combustion air.

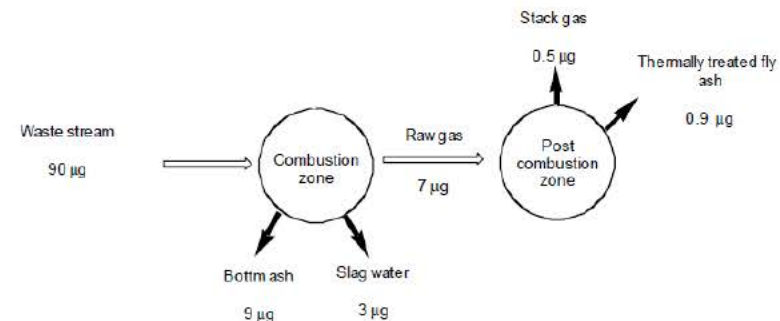


Figure 12. Balance of dioxin flows around the post-combustion zone of a modern MWC. All flows are expressed per tonne of waste in ITEQ (estimated from Lahl et al, 1991). [4]

*Bottom ash recycled to road base or sintered products (tiles, pavers, blocks).
APC residues to prescribed waste landfill due to heavy metals.*

*Temperatures and Controls ensure Modern EfW plant are a **net** dioxin sink.*

Thermal Combustion

EfW Technology	Notes
Landfill Gas	Need incremental landfill volumes Methane = 25 x equivalent CO ₂ tonnes
MSW Thermal Combustion	Incorporates gate fees & energy Mature and Stable Heterogeneous feed
Biomass Incineration	Insufficient on-site material No gate fee
Anaerobic Digestion	Insufficient on-site material Not suitable for MSW
Gasification	Promising, increased complexity High cost, homogeneous feed
Pyrolysis	Small Scale

Two clear options for Thermal Combustion:-

1. *Moving Grate (MG)*
2. *Circulating Fluidised Bed (CFB)*

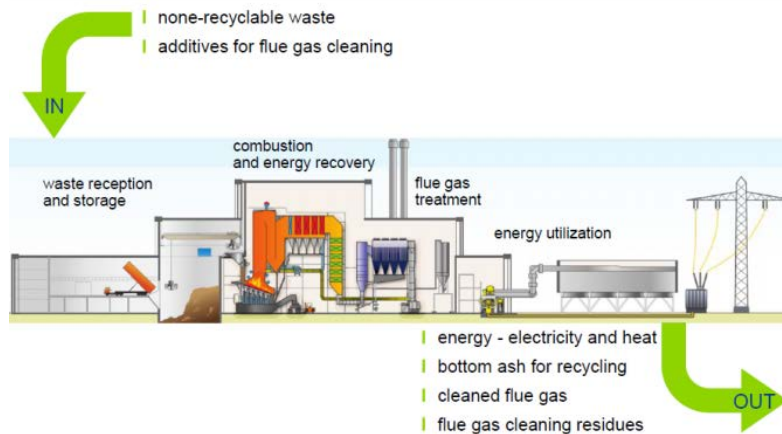
Technology Supplier	Grate Combustion System for MSW?	Fluidised Bed Combustion System for MSW?	Largest Process Line (Tonnes per day)	Number of Reference Plants
Moving grate combustion systems				
Martin	Reverse reciprocating grate	No	1200	389
Keppel Seghers	Multi-acting reciprocating grate (Dynagrate) and forward acting grate (Volund)	No	800	circa 35
Fisia Babcock	Forward acting reciprocating (Steinmuller) and roller	No	960	59
Babcock & Wilcox Volund	DynaGrate, Volund grate	No	640	50
Hitachi Zosen Inova	Forward acting reciprocating (formerly Von Roll Inova, HZ was Japanese licensee)	No	920	Approx. 480
Kawasaki Heavy Industries	Horizontal water cooled grate ('advanced stoker system')	No	450	200 – 300 small plants in Japan
Mitsubishi Heavy Industries	Reverse acting reciprocating (Martin grate licensee)	No	?	circa 250
JFE	Horizontal stoker grate ('Hyper Grate Stoker')	No	450	120
Fluidised Bed combustion systems				
Ebara		'TIF' FB incineration system	500	90
EPI Outotec	No	BFB	250	3
Metso Power	No	BFB	Relatively small	10
Metso Power	No	CFB	Relatively small and process other fuels with RDF	4

Source: WSP analysis of various data sources

Moving Grate and Circulating Fluidised Bed

Energy from Waste
An Essential Part of a Sustainable Waste Management System

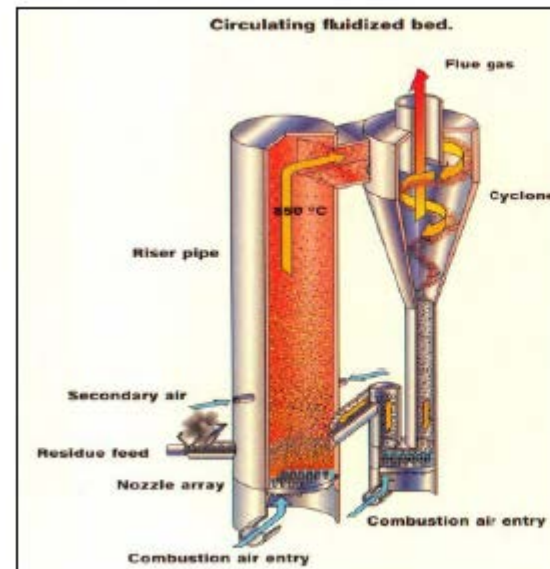
Hitachi Zosen
INOVA



The moving grate mechanism (normally inclined although horizontal grate designs are operating) moves the burning solid waste from the inlet to the outlet. Primary combustion air passes from below the grate underneath the burning solids and flow through the waste bed into the freeboard zone above the bed. Secondary and tertiary air injection ports are used to ensure complete combustion of the gas phase components volatilised from the solid waste. Typical regulations require the flue gas to be held at a minimum temperature of 850°C for two seconds after the last injection of combustion air.

The hot flue gas then passes into the water tube waste heat recovery boiler.

Figure 2-7: Schematic of a Circulating Fluidised Bed Combustor



As the fluidising velocity to a bubbling fluidised bed is slowly increased the bubble phase will disappear leading to a condition of uniformity, referred to as the turbulent state. If the gas velocity exceeds the transport velocity of the particles then, in the absence of solids recycle, the column containing the particles, would empty rapidly. However, if the solids ejected from the bed are captured in a cyclone and returned via a standpipe to the bottom of the bed then it is possible to maintain a relatively large solids concentration in the column. CFB combustors utilise smaller particles (approx. 250 μm) and higher gas velocities (5 - 8 m/s) than a corresponding BFB.

Source: Hitachi Zosen Inova

MG Versus CFB

	Moving Grate	Circulating Fluidised Bed
Strengths	Higher Waste volume capacity	Generally lower NOx [1], [4]
	Heterogeneous fuel (no pre-treat)	Higher electrical efficiency Higher energy produced per tonne. [2]
	Lower Fly Ash/APC 3-4% [3]	Lower Bottom Ash 16% [3] – higher “burnout” of organics [4] and removed feed contaminants
	Proven stable bankable (over 90% of facilities worldwide are Moving Grate)	Wider feedstock moisture [3]
	Higher availability	Less moving parts in combustion system
Weakness	Higher CO2	Requires homogenous fuel (full pre-treatment required)
		Poor pre-treatment has risks of “glass” formation in combustion zone.
Investment Costs	Higher for Grate/Boiler Overall Similar [1]	Lower for Grate Boiler Higher for Pre-treatment Overall Similar [1]
O&M costs	Lower [1]	Higher when pre-treat included [1]

AP's preferred technology is Moving Grate due to higher reliability and bankability. The Feasibility Study will further assess these two most suitable technologies to finalise the Business Case.