

# REFERRAL OF A PROJECT FOR A DECISION ON THE NEED FOR ASSESSMENT UNDER THE *ENVIRONMENT EFFECTS ACT 1978*

## REFERRAL FORM

The *Environment Effects Act 1978* provides that where proposed works may have a significant effect on the environment, either a proponent or a decision-maker may refer these works (or project) to the Minister for Planning for advice as to whether an Environment Effects Statement (EES) is required.

This Referral Form is designed to assist in the provision of relevant information in accordance with the *Ministerial Guidelines for assessment of environmental effects under the Environment Effects Act 1978* (Seventh Edition, 2006). Where a decision-maker is referring a project, they should complete a Referral Form to the best of their ability, recognising that further information may need to be obtained from the proponent.

**It will generally be useful for a proponent to discuss the preparation of a Referral with the Impact Assessment Unit (IAU) at the Department of Environment, Land, Water and Planning (DELWP) before submitting the Referral.**

If a proponent believes that effective measures to address environmental risks are available, sufficient information could be provided in the Referral to substantiate this view. In contrast, if a proponent considers that further detailed environmental studies will be needed as part of project investigations, a more general description of potential effects and possible mitigation measures in the Referral may suffice.

In completing a Referral Form, the following should occur:

- Mark relevant boxes by changing the font colour of the 'cross' to black and provide additional information and explanation where requested.
- As a minimum, a brief response should be provided for each item in the Referral Form, with a more detailed response provided where the item is of particular relevance. Cross-references to sections or pages in supporting documents should also be provided. Information need only be provided once in the Referral Form, although relevant cross-referencing should be included.
- Responses should honestly reflect the potential for adverse environmental effects. A Referral will only be accepted for processing once IAU is satisfied that it has been completed appropriately.
- Potentially significant effects should be described in sufficient detail for a reasonable conclusion to be drawn on whether the project could pose a significant risk to environmental assets. Responses should include:
  - a brief description of potential changes or risks to environmental assets resulting from the project;
  - available information on the likelihood and significance of such changes;
  - the sources and accuracy of this information, and associated uncertainties.
- Any attachments, maps and supporting reports should be provided in a secure folder with the Referral Form.
- A CD or DVD copy of all documents will be needed, especially if the size of electronic documents may cause email difficulties. **Individual documents should not exceed 2MB as they will be published on the Department's website.**
- A completed form would normally be between 15 and 30 pages in length. Responses should not be constrained by the size of the text boxes provided. Text boxes should be extended to allow for an appropriate level of detail.

- The form should be completed in MS Word and not handwritten.

The party referring a project should submit a covering letter to the Minister for Planning together with a completed Referral Form, attaching supporting reports and other information that may be relevant. This should be sent to:

Postal address

**Minister for Planning  
GPO Box 2392  
MELBOURNE VIC 3001**

Couriers

**Minister for Planning  
Level 20, 1 Spring Street  
MELBOURNE VIC 3001**

In addition to the submission of the hardcopy to the Minister, separate submission of an electronic copy of the Referral via email to [ees.referrals@delwp.vic.gov.au](mailto:ees.referrals@delwp.vic.gov.au) is required. This will assist the timely processing of a referral.

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## PART 1 PROPONENT DETAILS, PROJECT DESCRIPTION & LOCATION

### 1. Information on proponent and person making Referral

<b>Name of Proponent:</b>	<b>Paper Australia Pty Ltd</b>
<b>Authorised person for proponent:</b>	David Jettner
<b>Position:</b>	General Manager Corporate Development
<b>Postal address:</b>	307 Ferntree Gully Road Mount Waverley VICTORIA 3149
<b>Email address:</b>	David.Jettner@australianpaper.com.au
<b>Phone number:</b>	+61 (03) 8540 2300
<b>Facsimile number:</b>	
<b>Person who prepared Referral:</b>	Anthony Pansini / Roger Winders
<b>Position:</b>	Senior Environmental Consultant
<b>Organisation:</b>	Jacobs Group (Australia) Pty Ltd
<b>Postal address:</b>	452 Flinders Street, Melbourne 3000
<b>Email address:</b>	Anthony.pansini@jacobs.com.au / roger.winders@jacobs.com
<b>Phone number:</b>	+61 3 8668 3000
<b>Facsimile number:</b>	
<b>Available industry &amp; environmental expertise:</b> (areas of 'in-house' expertise & consultancy firms engaged for project)	<p>Paper Australia Pty Ltd (Australian Paper) is a world leader in the production of pulp, paper, envelopes and stationery. In-house expertise includes engineering, environmental management, land management and water management.</p> <p>Jacobs has conducted a number of preliminary assessments for the project including:</p> <ul style="list-style-type: none"> <li>• Air Quality Assessment</li> <li>• Greenhouse Gas Assessment</li> <li>• Waste Assessment</li> <li>• Noise Assessment</li> <li>• Traffic Assessment</li> <li>• Planning Assessment</li> <li>• Social Impact Assessment</li> <li>• Cultural Heritage Assessment</li> <li>• Ecology (Flora and Fauna) Assessment</li> </ul>

### 2. Project – brief outline

<b>Project title:</b> <b>Australian Paper Energy from Waste Project</b>
<p><b>Project location:</b> (describe location with AMG coordinates and attach A4/A3 map(s) showing project site or investigation area, as well as its regional and local context)</p> <p>The project is located in Maryvale (north of Morwell), approximately 130 kilometres (km) east-southeast of Melbourne's central business district, within the City of Latrobe Local Government Area (LGA). The address for the proposal is:</p> <p>Australian Paper, Maryvale Site Traralgon West Road, Morwell, VIC 3840</p>

AMG coordinates for the site are: 451452 East and 5773344 North

**Short project description (few sentences):**

The proposed Australian Paper (AP) Energy from Waste (EfW) plant (the plant) will comprise the development of an EfW plant at the existing AP Maryvale Pulp and Paper Mill Site. The EfW plant will use moving grate boiler technology to recover energy by combusting an estimated 650,000 tonnes per annum of (+/- 10% dependent on calorific value) non-hazardous Municipal Solid Waste (MSW) and Commercial and Industrial Waste (C&I) sourced from the Gippsland region and the south east Melbourne metropolitan area. The plant will be a cogeneration system, providing both steam and electricity to the existing Maryvale mill operations of the order of 25 Megawatts electric (MWe) and 130 tonnes per hour of intermediate pressure (IP) steam.

The plant will also involve a black-start diesel generator approximately 6 MW in size and a 200 kW emergency shut-down generator. The black-start generator is to be used to start up the EfW plant after an event that causes complete non-availability of grid electricity import supply. The emergency shut-down generator is to be used for emergency power during a shutdown and needs to be of sufficient capacity to run critical systems (such as the control system) allowing the plant to safely shut down in the event of a temporary loss of grid supply, thus avoiding health and safety and environment risk and/or damage to plant or equipment.

**3. Project description**

**Aim/objectives of the project (what is its purpose / intended to achieve?):**

The aim of the project is to establish a sustainable and long-term stable alternative baseload energy source to provide steam and electricity for the existing Maryvale Pulp and Paper Mill operations (Maryvale Site) as well as reducing waste to landfill.

Energy is the third biggest cost input to AP's operations and the Maryvale Site relies on significant energy purchases of natural gas and electricity. A key motivator for AP in investigating the feasibility of the EfW Plant is its major exposure to the price of energy, which if not addressed could impact the long term viability of the existing operations. At a time of rapidly rising energy costs, AP needs to source electrical and steam energy from fuel sources that have more certainty in both cost and supply.

AP is the largest private employer in the Latrobe Valley with around 850 direct full time employees and the feasibility study provides a platform for continued innovation at the plant to ensure a sustainable, long term future for the Maryvale Site. The application of EfW would be a critical step for AP's regional operations, reducing reliance on imported energy from the gas and electricity grids and maintaining the existing manufacturing footprint within an already established, large buffer zone. The new EfW plant will supply energy to the mill using a larger and more efficient condensing extraction steam turbine, which will have a higher efficiency than the existing older mill back pressure steam turbines, thus generating more power per tonne of steam supplied to the turbine inlet.

**Background/rationale of project (describe the context / basis for the proposal, eg. for siting):**

The proposed EfW plant is to be located on the existing Maryvale Site to allow easy access to the steam and electricity produced, as well as incorporating the plant into a large existing industrial facility with significant existing road and rail infrastructure, water supply and treatment infrastructure, steam boilers and steam turbines, and grid electricity and natural gas supplies.

The Maryvale Mill purchases approximately 6.7 Peta Joules (PJ) of Victorian pipeline natural gas every year (one of Victoria's largest consumers) and also purchases around 240,000 MWh of electricity from the National Electricity Market (NEM) (on average throughout the year equating to around 25MWe on import). Significant effort has been allocated to improving the energy efficiency per net tonne of pulp and paper. Particular focus has been on natural gas consumption due to the rapidly escalating prices.

The thermal energy needs of the Maryvale Site include steam at a variety of pressures ranging from low pressure to very high pressure for different process applications, and High Voltage (HV) Electricity.

Currently, a significant proportion of steam required (around 50%) is generated from combustion of black liquor which is a by-product of the pulping process and considered a biomass renewable fuel under the national Renewable Energy Target (RET) legislation.

The remaining steam demand (around 50%) is produced with purchased natural gas. Back pressure turbine generators use the combined Very High Pressure (VHP) steam generated in the existing recovery and gas boilers to produce a significant quantity of HV electricity with the remaining electrical demand supplied from the grid. The back pressure turbine generators exhaust steam at high, intermediate, and low pressure for subsequent use in the various mill production systems.

Due to the significant cost increase in the market price of natural gas, which is the primary fuel source for the Maryvale Site's energy's needs, an alternate baseload energy source is required to enable the mill to continue to operate in a cost effective manner.

When in operation the EfW plant is expected to reduce the requirement for energy import to the mill of approximately 240,000 MWh of electricity (close to 100% of the grid import) and 3.5 PJs of natural gas (around 64 % of the gas used in 2016), considerably reducing the mill's reliance on significantly more carbon intensive imported energy sources.

Taking into account total costs (capital and operating), environmental impacts, employment effects, plant performance and reliability, there is a clear group of technologies that were deemed appropriate and with a history of successful application on a global scale – that is EfW combustion technologies utilising MSW feedstock. There is currently sufficient capacity to provide 650,000 (+/- 10%) tonnes per annum (tpa) of MSW and C&I required, with an estimated 520,000 tpa expected to be sourced from south east Melbourne and 130,000 tpa from Gippsland. Additional rationale for the project includes the future of landfills in south east Melbourne, which are closing or will be closed in the next few years and the need to elevate the disposal of waste on the Waste Hierarchy. Currently, only around 50% of waste is recycled and the population growth of Melbourne will see an additional ~500,000 tpa of waste generated by 2026.

AP has been granted both Federal (\$2.5M) and State Government (\$2.5M) support and has contributed \$2.5M in-kind to develop a Feasibility Study. This study is aimed to be completed by June 2018 to determine if the project should proceed and allow AP to be prepared for the Metropolitan Waste and Resource Recovery Group (MWRRG) and Gippsland Waste and Resource Recovery Group (GWRRG) waste procurement tender Expressions of Interest (EOI) in Q3 2018.

If successfully implemented, the project will have a range of important benefits for the local community and for the state/country, including:

- Improving energy security by returning approximately 3.5PJ of natural gas annually to the broader market, helping to improve energy security for the state and country
- Helping to secure the future of the AP Maryvale site and the jobs of the 850 direct employees
- Providing an additional ~800 jobs during the construction phase and ~45 to 50 full-time equivalent (FTE) jobs during the operational phase (estimated at 1600 construction and 440 FTEs including flow on FTEs)
- Diverting 650,000 tonnes (+/- 10%) of residual waste from landfill each year, to a higher order use as per the Waste Hierarchy
- A net reduction in greenhouse gas emissions of ~500,000 tonnes per year, the equivalent of taking 100,000 cars off the road (refer to Section 16: Energy, wastes and greenhouse gas emissions).

The existing Maryvale Site is an ideal location for the project for a variety of reasons:

- It is an existing large-scale industrial facility (Industrial 2 Zone – IN2Z)
- There is an existing buffer between the Site and sensitive receptors (included in Latrobe Planning Scheme)
- There is excellent existing road access to the Site from the M1
- The Site has existing rail infrastructure that can be extended within the Site
- There are existing excellent connections to utilities, including water, electricity, gas
- The EfW plant can be developed at the Site with minimal operational and environment impacts and numerous social benefits

**Main components of the project** (nature, siting & approx. dimensions; attach A4/A3 plan(s) of site layout if available):

The EfW plant is proposed to be located on a roughly 10 hectare portion of land to the south of the existing mill plant and buildings, adjacent to the existing rail siding and road haul access. This location has been selected due to the ease of access to transport, connection to utilities and to minimise visual impacts. The main components of the project relate to a new EfW plant, including:

- Site Preparation and civil works
- Site roads and weighbridges
- Waste reception and tipping hall (where waste is delivered)
- Waste bunker (for waste storage and mixing)
- Furnaces for combustion of residual waste
- Energy recovery boiler/steam generators
- Flue gas treatment
- 
- Continuous emissions monitoring system
- Condensing extraction steam turbo-generator of circa 70 MWe maximum generation capacity without steam extraction
- Transformers and HV electrical equipment
- Steam supply extracted from intermediate stage of the steam turbine at intermediate pressure (IP) to the mill
- Steam condenser and cooling tower
- Plant control system and control room
- EfW plant buildings and structures
- Balance of plant equipment power plant equipment
- Laydown and minor access roads on the existing AP Maryvale Site
- A black start emergency diesel generator of capacity approximately 6 MWe
- An emergency shutdown diesel generator of capacity circa 200 kWe

Refer to Figure 1.2 below for EfW process overview.

**Ancillary components of the project** (eg. upgraded access roads, new high-pressure gas pipeline; off-site resource processing):

No ancillary components outside of the Maryvale site are currently proposed for the EfW plant. Initially MSW and C&I feedstock is proposed to come from existing waste management facilities. Additional infrastructure may be required to support this in the future, however it is not part of the current works.

**Key construction activities:**

The construction of the EfW plant is expected to take approximately 3 years. The key construction elements include:

- Civil works
- Bulk earthworks
- Concrete and structural works
- Steel fabrication and installation
- Mechanical works and plant installation
- Electrical and control systems
- Road and rail installation on the Maryvale Site (private property)
- Commissioning works

### Key operational activities:

The site at the existing Maryvale Mill currently operates 24 hours / 7 days per week producing pulp and paper products as well as generating electricity and steam to power the processing facilities and associated infrastructure. The annual hours of the existing plant operation are not expected to change as a result of this project.

Key operational activities will include plant commissioning, operation and monitoring of:

1. Residual waste delivery, storage and mixing
2. Controlled combustion of waste
3. Flue gas treatment of the combustion gases
4. Ash residue collection, storage and export logistics
5. Steam supply and electricity generation with onsite transmission to Maryvale Mill
6. Water treatment and distribution

There are a number of different options and configurations possible for providing the required electrical generation and steam flows from the EfW plant to the Maryvale Site and Optioneering will continue throughout the design phase to best optimise plant performance and configurations. The EfW plant will however need the functionality to be able to operate under a range of different operating scenarios. Some of these operating scenarios are listed below:

1. Day to day operation of providing the Maryvale Site with process steam and electricity (nominally 130tph of steam and 25MW of electricity). This process steam amount will vary depending on the steam requirement at the Maryvale Site at that particular point in time and will be a controlled flow that the EfW plant can respond to. This can account for the times where the Maryvale Site has a reduced demand under a half or part mill shutdown for instance.
2. The EfW plant will also be designed to operate such that during times of peak steam demand it can shut the turbine and provide the maximum possible amount of steam to the Maryvale Site. This will be facilitated through the use of a turbine bypass if intermediate pressure (IP) extraction is utilised.
3. Similarly, the EfW plant will be designed to operate under the scenario where the process steam requirement to Australian Paper is zero i.e. during times where Australian Paper is under a complete mill outage or at other times where it is deemed necessary to generate as much electricity as possible (i.e. during times of high demand and market price on the electricity grid, where export from site will be desirable). This is shown graphically in Figure 1.1 below.

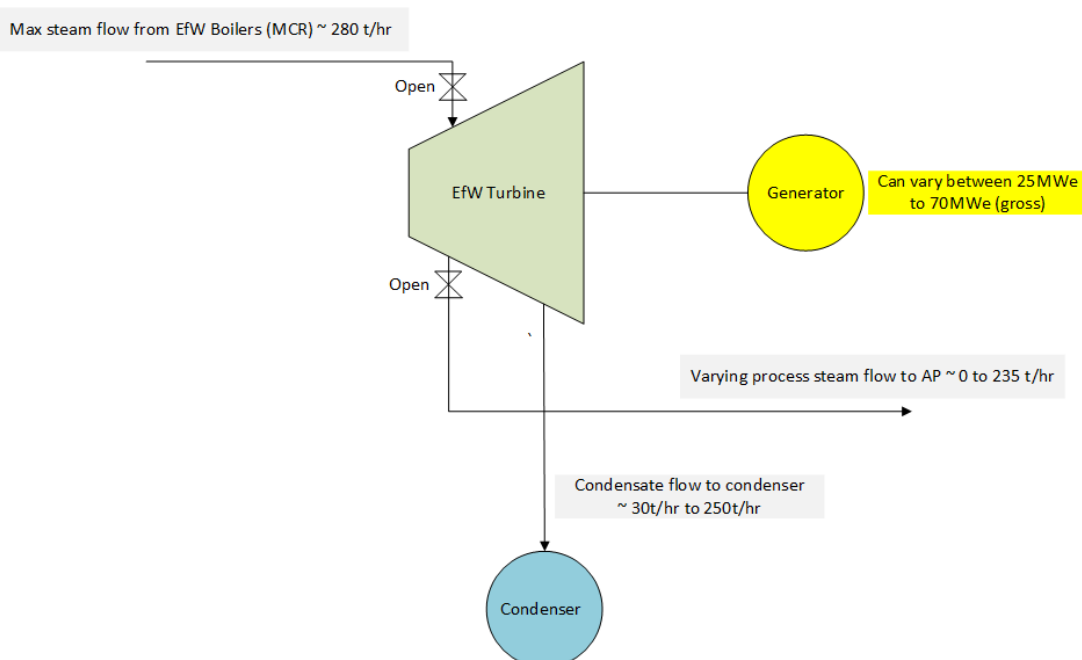


Figure 1.1 – Day to day process steam supply from EfW to mill (assuming IP extraction)

**Key decommissioning activities** (if applicable):

The EfW plant will be designed for a 25-year life and if operated successfully will likely be in operation beyond 25 years. A decommissioning plan will be developed closer to the end of the plant's life as buildings at the Maryvale Site that are no longer used for their original purpose are often re-purposed for other uses.

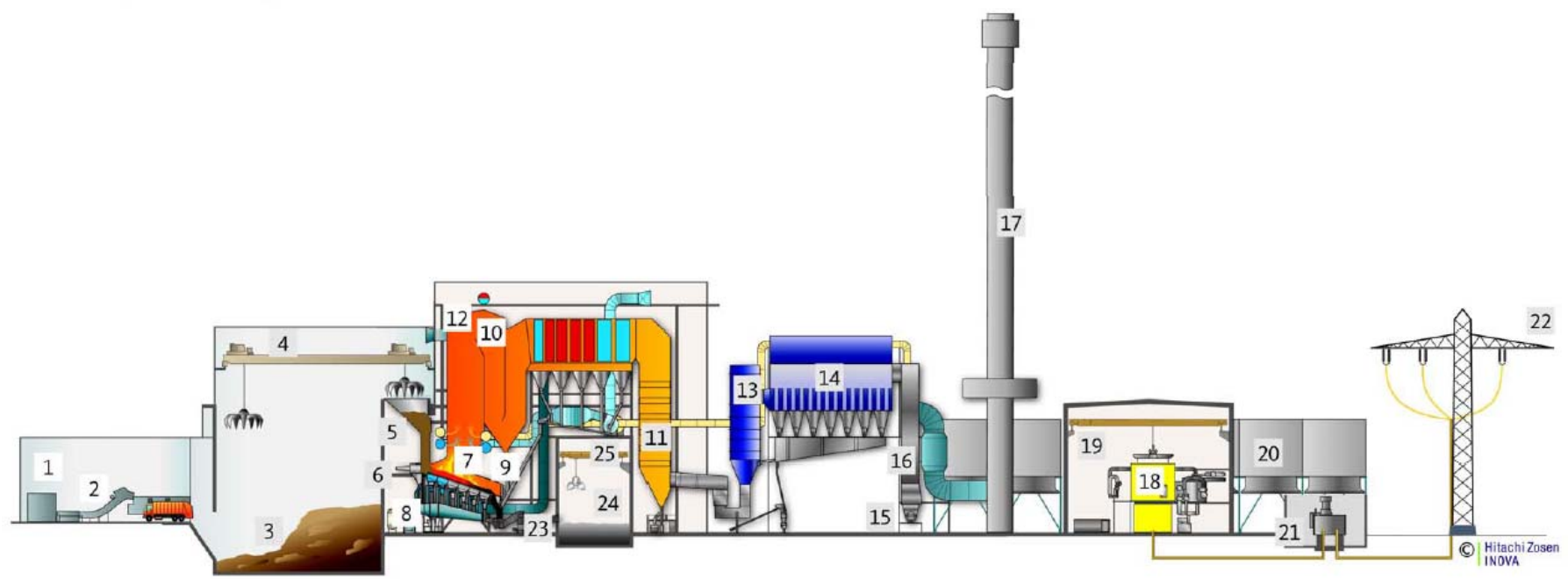
**Is the project an element or stage in a larger project?**

No  Yes If yes, please describe: the overall project strategy for delivery of all stages and components; the concept design for the overall project; and the intended scheduling of the design and development of project stages).

**Is the project related to any other past, current or mooted proposals in the region?**

No  Yes If yes, please identify related proposals.





Fuel Reception and Storage	Combustion and Boiler	Flue Gas Treatment	Energy Recovery	Residue Handling and Treatment
1 Tipping hall	5 Feed hopper	12 Ammonia Injection	18 Turbine	23 Bottom ash conveyer
2 Shredder	6 Ram feeder	13 Semy-dry reactor	19 Turbine building	24 Bottom ash bunker
3 Solid fuel bunker	7 HZI grate	14 Fabric filter	20 Air cooled condenser	25 Bottom ash crane
4 Solid fuel crane	8 Primary air	15 Inducted draft fan	21 Transformer	
	9 Secondary air	16 Silencer	22 Electricity export	
	10 Four-pass boiler	17 Stack		
	11 Economiser			

Figure 1.2 – Typical process overview for EfW plant (Ferrybridge multi-fuel plant UK, courtesy of Hitachi Zosen Inova)

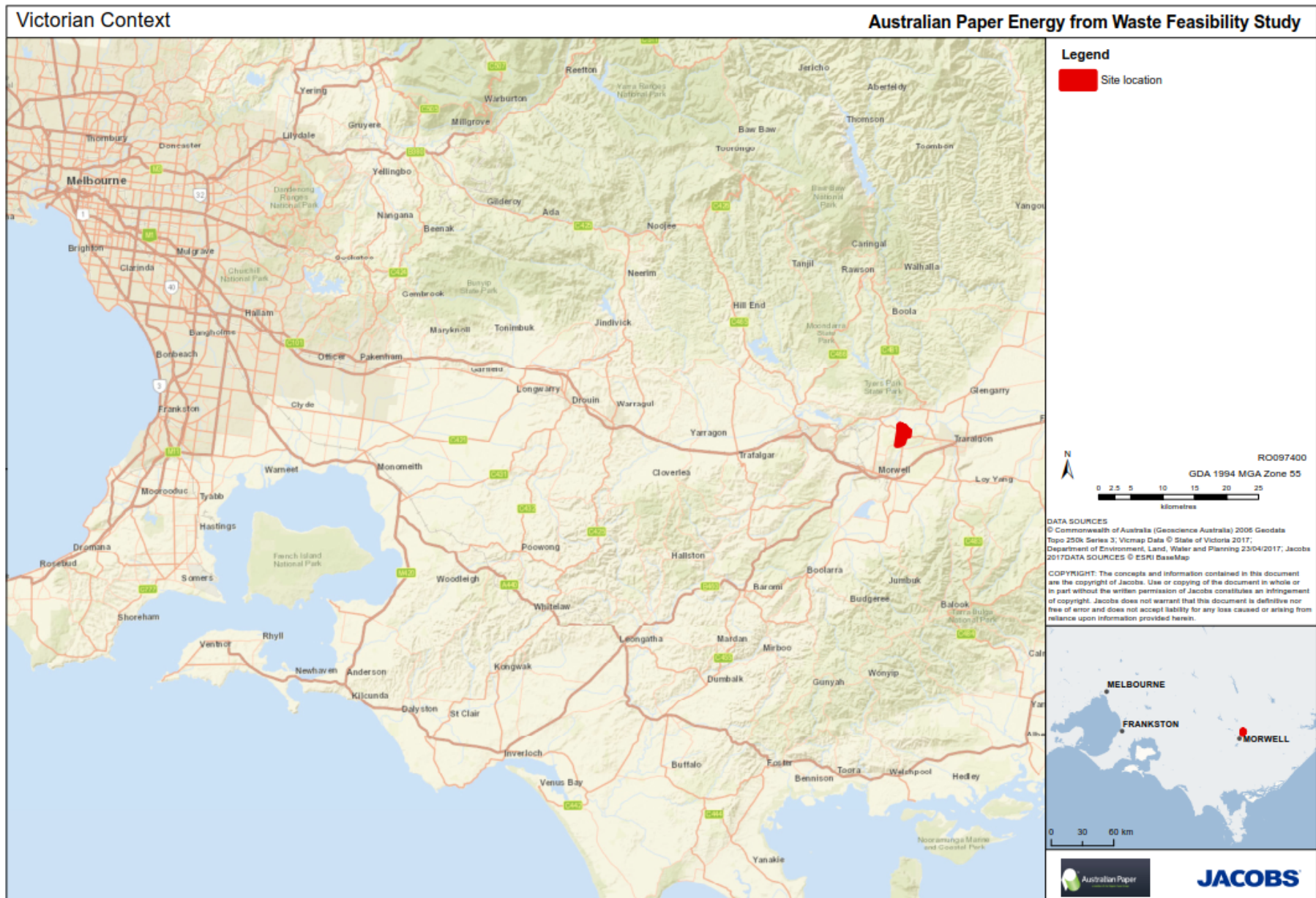


Figure 1.3 - Maryvale Site Victorian context

Figure 1.2 : Project Location Australian Paper Energy from Waste Feasibility Study

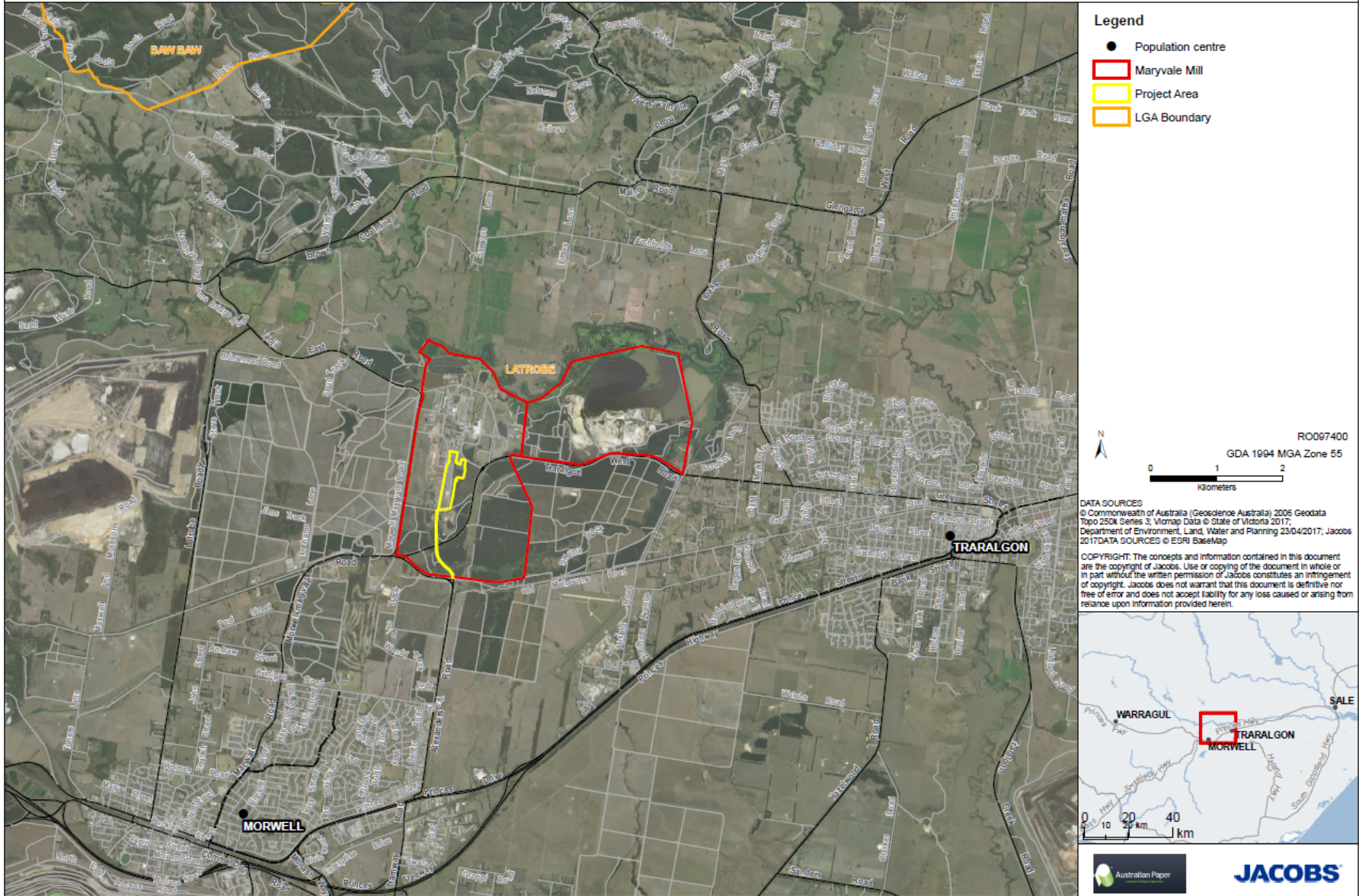
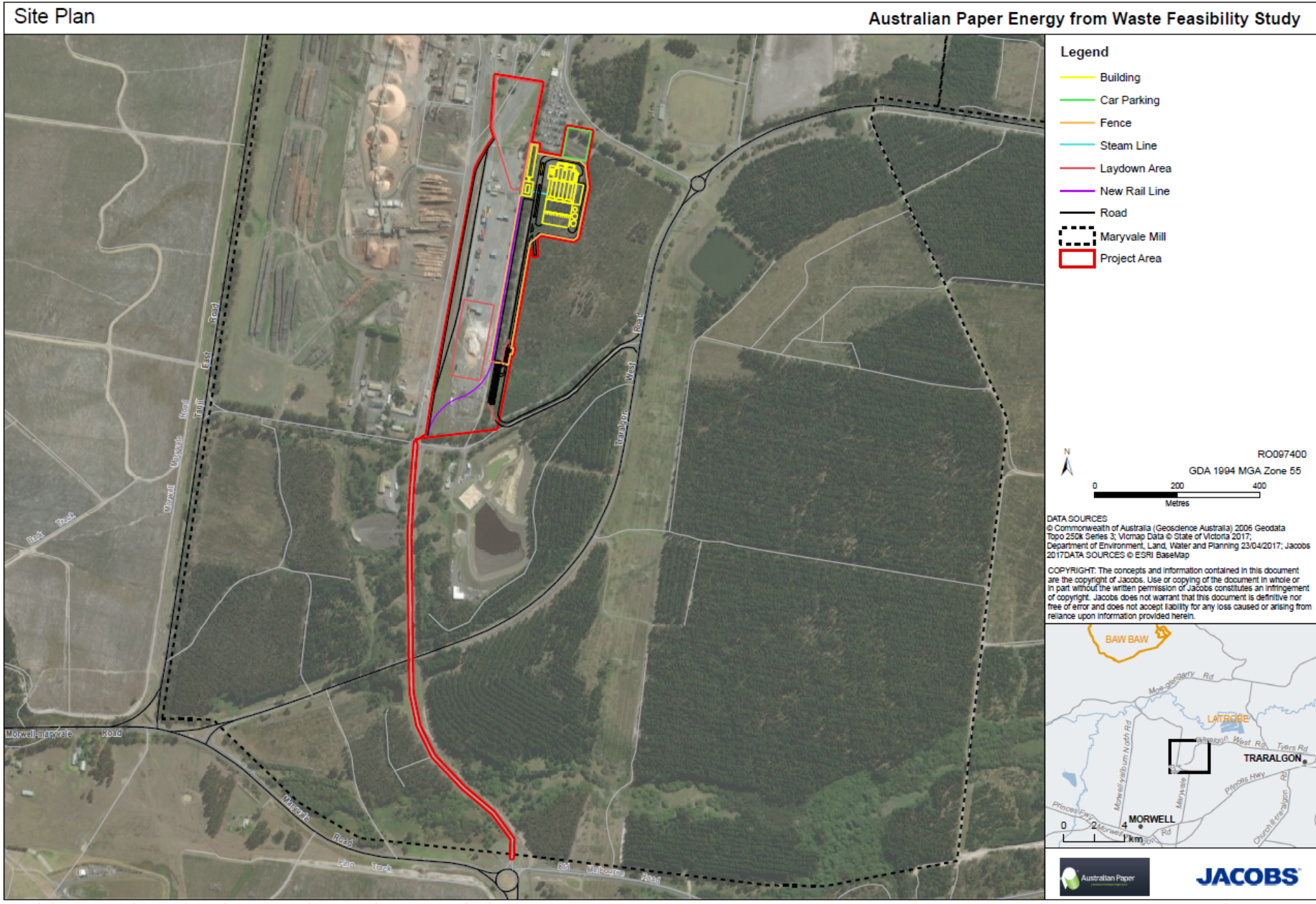


Figure 1.4 –EfW project location within the existing Maryvale site



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Figure 1.5 – Proposed EfW site plan

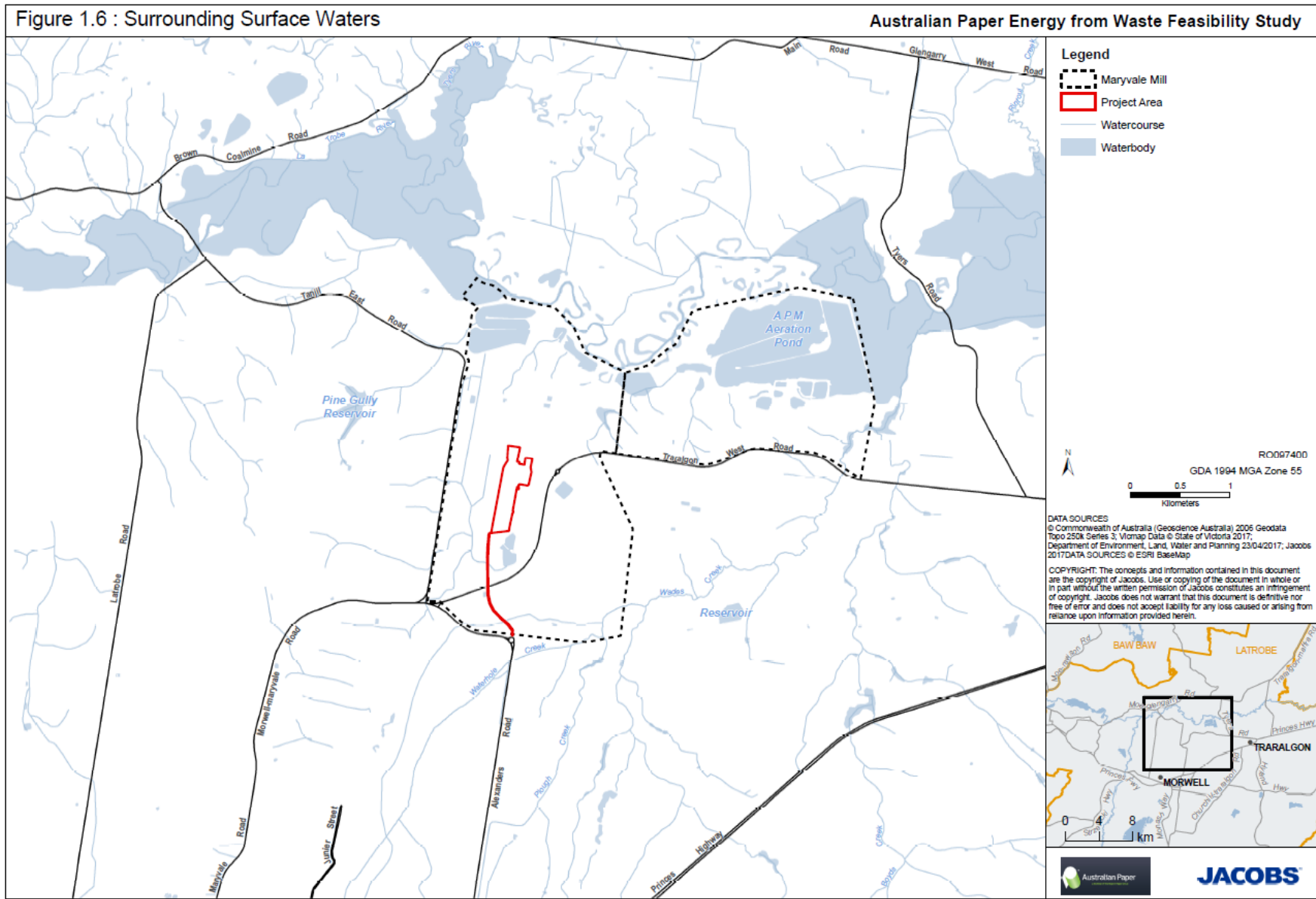


Figure 1.6 – Surrounding surface waters

## 4. Project alternatives

**Brief description of key alternatives considered to date** (eg. locational, scale or design alternatives. If relevant, attach A4/A3 plans):

The purpose of the EfW plant is provide steam and electricity to the existing pulp and paper mill and as such no locational alternatives have been considered.

Key design alternatives considered to date include:

- A do nothing scenario has been modelled. This scenario does not improve the current financial position of AP and allow for AP to maintain competitive or financial viability in the medium to long term. It also does not improve the operating flexibility of its electricity and steam generating capacity.
- Improved recovery boiler operations - as per the Mill Stabilisation Plan and major overhauls of site's Back Pressure Turbines. In 2018 ~\$17.5M will be spent on a major overhaul of the R5 Economiser, however this will not deliver the required improvement in gas or electricity consumption, as the recovery boilers are limited by pulping capacity and the resultant black liquor generated.
- Expand scale of existing operations – The total mill capacity is constrained by the Recovery Boiler capacity. Installation of a condensing turbine would generate electricity from available gas fired boilers' (GFB) capacity, but this is more expensive than purchasing electricity from the grid. This is because of the small scale (in comparison to large scale power generators e.g. Loy Yang A 2,200MWe), and without the ability to supply internal steam consumers the residual heat energy post the existing back pressure turbines, turbine exhaust heat is lost to atmosphere via cooling towers rather than utilised in downstream processes such as paper manufacture.
- Seek alternative energy sources - AP requires baseload energy on a 24/7/365 availability, and an evaluation of accessible options has determined that combustion of MSW has the clear potential to deliver AP's needs. This evaluation involves consideration of the capital and operational costs, proven and stable technologies, environmental compliance and impacts, availability of feedstock, availability of site and infrastructure and suitability of the energy offtake demands.
  - Wind and solar were also assessed and although they would assist in addressing the electrical energy component, would not supply the steam energy component. Solar would need approximately 180 ha of area in order to install the required number of solar panels, and would still need a substantial amount of grid electricity or energy storage due to variability. Wind would also require the grid and/or storage due to variability. The Latrobe Valley in not as endowed as other parts of Victoria with regard to solar irradiance and wind resources.
  - Burning of biomass was also considered. There is insufficient waste biomass in an economically feasible geographic radius to the Maryvale Site to support such a plant. Bringing biomass to the Maryvale Site has other logistics and supply security issues relative to the use of MSW.

**Brief description of key alternatives to be further investigated** (if known):

No additional alternatives are required to be further investigated.

## 5. Proposed exclusions

**Statement of reasons for the proposed exclusion of any ancillary activities or further project stages from the scope of the project for assessment:**

The project intends to utilise existing facilities for aggregating waste volumes in the south east Melbourne

waste catchment target areas. There may be a need for a containerised depot at an industrial location in Melbourne to facilitate the transfer of MSW and C&I via rail from Melbourne to the EfW plant at the Maryvale Site. Such a depot is not anticipated to be a Scheduled Premise (as per the *Environment Protection (Scheduled Premises and Exemptions) Regulations 2007*) but may require planning approval from the local council. However, at this feasibility stage of the project, the infrastructure requirements have not been determined. Infrastructure at existing waste transfer stations may be suitable, subject to further investigation. If there is a need for such a depot in the future, AP will engage the appropriate agencies and authorities to determine the statutory approval requirements.

## 6. Project implementation

**Implementing organisation** (ultimately responsible for project, ie. not contractor):

Paper Australia Pty Ltd.

**Implementation timeframe:**

Key Implementation dates are given below (as currently scheduled):

- Completion of feasibility study June 2018
- Final Approval and Funding (Final Investment Decision) October 2018
- Start of Construction in November 2019
- Start of Commissioning in September 2022
- Project completion in September 2023.

**Proposed staging** (if applicable):

Not applicable.

## 7. Description of proposed site or area of investigation

**Has a preferred site for the project been selected?**

No  Yes If no, please describe area for investigation.

If yes, please describe the preferred site in the next items (if practicable).

Refer to Figures 1.2, 1.3 and 1.4 for site location.

**General description of preferred site**, (including aspects such as topography/landform, soil types/degradation, drainage/ waterways, native/exotic vegetation cover, physical features, built structures, road frontages; attach ground-level photographs of site, as well as A4/A3 aerial/satellite image(s) and/or map(s) of site & surrounds, showing project footprint):

The EfW project site is located in Maryvale, approximately 150km south-east of the Melbourne CBD (Figure 1.2) and is situated within the existing AP pulp and paper mill premises (Maryvale Site); no changes will be made to the site boundary (Figure 1.3). The EfW project site has been partially used as a laydown area for timber before being transported to the mill prior to 1955, after which point only the western portion of the project site was used for laydown. A car park has occupied a small area in the northern portion of the project site since the early 1960s while the eastern portion largely remained vacant until 1999, when it was seeded for plantation timber growth, which remains its present state.

The project site is within the Gippsland Plains bioregion and under the jurisdiction of the West Gippsland Catchment Management Authority and in the Latrobe City Council local government area. The Project Site is not subject to any additional planning overlays that modify the vegetation removal requirements of Clause 52.17 of the Victoria Planning Provisions.

Topography of the broader pulp and paper mill shows that surface water is considered likely to drain towards treatment ponds at the Mill's northern extent. Topographical information (VVG, 2017) for the Project

site follows similar directions and although it is relatively flat, slopes gently downward from south to north in the direction of the Latrobe River. Surrounding surface waters are given above in Figure 1.6 and shows the nearest major surface water feature is the Latrobe River, which meanders from a north-west to the south-easterly direction approximately 1.5 km to the north of the Project Site.

A system of large treatment ponds lies adjacent the river to the south, immediately to the north of the main paper mill facility. No visible surface water bodies exist at the Project Site, though two dams sit adjacent the southern boundary to the southeast (Gippsland Water infrastructure). There are no natural drainage channels in proximity to the Project Site due to the many decades of modification at the Mill site. The EfW Plant will not impact existing natural drainage patterns. There are engineered drainage lines through the Mill site that lead to the water treatment systems. The road entrances to the Project Site from Old Melbourne Road and Traralgon West Road cross over drainage channels, however these are existing road routes with appropriate drainage culverts in place.

A review of the Visualising Victoria's Groundwater (VVG) database indicates that the water table is relatively shallow in the vicinity of the Project Site, likely at less than 5 m below ground level (mbgl). Groundwater depth is shown to be between 20 to 50 mbgl beyond Traralgon W Road in the east and Tanjil E Road in the west (Federation University Australia, 2017). The estimated total dissolved solids (TDS) of groundwater underlying the Project Site is indicated to lie between 1,000 to 3,500 mg/L. The property appears to abut the interface with a decrease in TDS to 500 to 1,000 mg/L to the north, south and west.

A review of 1:50,000 Moe Map sheet (Bolger and Carey, 1983) indicates the Project Site to be underlain by Quaternary alluvial terrace deposits (Qpt) abutting Tertiary Haunted Hill Gravels (Tph) to the east and west. These two strata are generally described as:

- Qpt – comprising gravels, sand, silt and clay; and
- Tph – comprising gravel and sands often clayey, minor silt and clay, unconsolidated bedding and ferruginous bands.

The geological map sheet indicates the project site itself is likely underlain by Tph. Adjoining the northern boundary of the mill site lie recent Quaternary stream alluvial deposits (Qra) which follow the course of the Latrobe River. The map sheets also suggest that the surface geology overlies Tph and alternating layers of Tertiary brown coal seams (Tbc) and clay silt deposits (Tlv) with a Cretaceous Undifferentiated Strzelecki Group sandstone (Kls) base. Further afield of the Project Site, Qpt deposits continue to the south towards Hazelwood North adjoining Tph to the east and west. North of Qra and the Latrobe River lie Cretaceous Rintlous Creek Sandstones (Klr).

The Project Site is predominantly clear of native vegetation. EVC mapping indicates that the majority of the Project Site is clear of native vegetation albeit with areas of the Project Site modelled as supporting EVC 151: Plains Grassy Forest. However, aerial imagery suggests that areas modelled as Plains Grassy Forest are areas of plantation timber, as indicated by the uniform nature of the vegetation present. Thus, the Project Site is predominantly highly disturbed in nature, with little native vegetation present (see Appendix 9: Ecology (Flora and Fauna) assessment). Any indigenous trees not part of the plantation could require permit and offsetting requirements, however, initial investigations show the amount of native vegetation (outside of plantation growth) to be negligible (<1 ha).

**Site area (if known):**

The operational footprint of the EfW plant will be approximately 7-10 hectares, within an existing industrial site of 620 Ha. The construction footprint of the EfW plant including laydown, parking, access/egress, construction and crib areas will be approximately 19 ha (hectares).

**Route length** (for linear infrastructure) .....N/A..... (km) **and width** .....N/A..... (m)

**Current land use and development:**

The site is located on land zoned as Industrial 2 Zone (IN2Z) and is used for the operation of the Maryvale Site, which has been active at this location for approximately 80 years as a pulp and paper mill.

The Maryvale site is surrounded by Urban Amenity Buffer in the local planning scheme.



**Description of local setting** (eg. adjoining land uses, road access, infrastructure, proximity to residences & urban centres):

Located in the Latrobe Valley, the EfW Project is in the vicinity of heavy industrial facilities including coal mines and coal / gas-fired power stations, dairy production, steel fabrication, water processing and heavy and light industrial premises. The Maryvale Site, on which the EfW plant will be located, has manufactured pulp and paper products since 1937. The Latrobe Valley is largely rural-residential and is well vegetated with an approximate population of 72,000.

The area surrounding the project site traverses a landscape that contains natural resources, including the Latrobe River within 1.5 km to the north and 1.2 km to the northeast of the Project Site, and the Wades, Plough, and Waterhole Creeks within 1.4 km to the southeast. Land following the Latrobe River is used for various farming activities including dairy farming while further north, land appears to be used for grazing. Sand quarries are located North East of the project site, adjacent to the Latrobe River. Land to the east and south comprises areas used for plantation forestry while land to the west appears to have been cleared for farming although these areas have been previously reserved for brown coal mining.

The Maryvale Site is located between the Tanjil East and Traralgon West roads within a small valley surrounded by plantation forest. The township of Traralgon is centred approximately 8km to the east and the township of Morwell is centred approximately 7km to the southwest. The two nearest residences are located approximately 2 and 2.5 kms from the proposed location of the EfW plant (to the south and northwest respectively), with the next nearest residences more than 3km from the EfW site.

**Planning context** (eg. strategic planning, zoning & overlays, management plans):

The AP Maryvale Site (and hence the EfW Project site) is located within the Industrial 2 Zone (IN2Z) under the Latrobe Planning Scheme. The land is zoned to support ongoing development of industrial and manufacturing activities. The site is also subject to a Bushfire Management Overlay (BMO).

Under the Latrobe Planning Scheme, the development would be defined as an Industry. In the Industrial 2 Zone, the use of the land for an Industry is a Section 2 – permit required use. Therefore, a planning permit is required for buildings and works to facilitate the EfW plant within the Industrial 2 Zone. Setback distances for a use involving ‘Combustion, treatment or bio-reaction of waste to produce energy’ in accordance with Clause 52.10 (Uses with adverse amenity potential) are variable and dependent on the processes to be used and the materials to be processed or stored. Such setback distances would likely fall within the existing buffer which exists for the Maryvale Mill.

Other setback distances apply to the Industrial 2 Zone with regard to exemption from notification requirements. To meet exemption requirements in the Industrial 2 Zone, the land to which the application applies must not be within 30 metres from land which is in a:

- Residential Zone
- Capital City Zone or Docklands Zone
- Land used for a hospital or education centre
- Public Acquisition Overlay to be acquired for a hospital or an education centre.

There is an “Urban Amenity Buffer” surrounding the Maryvale Mill site. This was implemented under amendment C87 (Part 2) of the Latrobe City Planning Scheme and gazetted on 12 Jan 2017 (specifically Clauses 21.04, 21.06 and 21.07 of the Municipal Strategic Statement were amended).

The Maryvale Mill was first established in the 1930s and has, over time, seen residential townships, including Traralgon and Morwell, expand closer to it. This encroachment has occurred despite there being planning policies which should have operated to provide a five (5) kilometre separation distance or “buffer” between the Mill and sensitive (e.g. residential) development.

AP has already carried out considerable work at significant expense to reduce the extent and reach of its potential off-site impacts. AP has undertaken detailed investigations to determine a site specific distance that was suitable as a buffer from new sensitive land uses. The buffer was designed to provide certainty for both the mill and local community into the future, by ensuring there would be no changes to the existing zoning and overlays directly surrounding the mill.

Works undertaken to determine an appropriate buffer include odour modelling studies, and community engagement as a part of the Traralgon Growth Areas Review (TGAR) and subsequent Amendment C87, over a 5-year period, culminating in its consideration by an independent planning panel.

Clause 52.10 (Uses with adverse amenity potential) is applicable to development and use permit applications for industries and warehouses that have the potential to cause offence or risk to the surrounding neighbourhood. Within Clause 52.10 the EfW plant could fall within the category of 'Recycling and Resource Recovery' – sub-category *Combustion, treatment or bio-reaction of waste to produce energy*.

### **Country Fire Authority (CFA)**

The application is required to be referred to the relevant fire authority being the CFA pursuant to Clause 66.03 (Referral of permit applications under other State standards provisions) of the Latrobe Planning Scheme. Referral to the CFA is triggered under the Bushfire Management Overlay (BMO). The CFA is listed as a determining referral authority in Clause 66.03.

### **VicRoads**

Dependent on the extent of the development and increases in traffic that the proposal generates, referral to VicRoads may be required. The site adjoins the Traralgon West Road and Tanjil Road that are both Road Zone, Category 1. A planning permit is likely to be triggered under Clause 52.29 if alterations are proposed to a road or to create an access way to a road in the Road Zone, Category 1. Details on the traffic assessment and the increases in traffic are described in Section 15.

### **WorkSafe**

Referral to WorkSafe may be required as this project will modify the handling of natural gas on site. It will also require a review of the existing safety case to assess whether the EfW plant will have an impact on the existing site's risk profile.

### **Local government area(s):**

The project site is within the City of Latrobe.

## **8. Existing environment**

### **Overview of key environmental assets/sensitivities in project area and vicinity (cf. general description of project site/study area under section 7):**

Despite the EfW plant being located at the Maryvale Site and with numerous heavy industrial premises in the vicinity of the Latrobe Valley, there are some environmental assets and sensitivities in the project area. The key assets and sensitivities include:

- The Latrobe River: The Latrobe River is an important source of water for industrial and agricultural users in the Latrobe Valley, primarily upstream from the Maryvale Site. The river is also within the Gippsland Lakes Ramsar site catchment, with the Maryvale Site being located

approximately 70kms upstream of the Ramsar site.

- Morwell township: The township of Morwell has a population of approximately 14,000 with the township centred approximately 7km to the southwest. Although air quality in the Latrobe Valley is generally good, the Hazelwood mine fire of early 2014 subjected the township of Morwell to smoke and soot pollution for a prolonged period. This has led to a heightened awareness and sensitivity to environmental conditions in and around the township.
- Traralgon township: The township of Traralgon has a population of approximately 25,000 with the township centred approximately 8km to the east. In past decades, there were odour issues for the town due to the Kraft pulping process at the Maryvale Site. Over a long period of time commencing in the 1990's, AP implemented a range of odour improvement measures at the site to reduce odour issues.
- Although there is a reasonable buffer (approximately 3-5 kms) around the Maryvale Site, there are a small number of residences within 2-3kms of the Site (approximately 6 residences). A few of these residences have experienced adverse noise impacts from the Site due to changes in the woodyard area. These issues have been rectified, however AP is mindful of needing to manage noise impacts from the overall Site.
- As well as being a hub for heavy industrial activities, the Latrobe Valley also has extensive primary industries that make a large contribution to the local economies. The area around the Maryvale Site contains numerous dairy and grazing farming properties and there are associated downstream businesses that thrive on these industries (e.g. dairy and cheese manufacturing; meat production). The wider area also sustains a large forestry and wood production industry.

## 9. Land availability and control

<b>Is the proposal on, or partly on, Crown land?</b> <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please provide details.
<b>Current land tenure</b> (provide plan, if practicable):  Sole Proprietor - Paper Australia Pty Ltd of 307 Ferntree Gully Road Mount Waverley VIC 3149
<b>Intended land tenure</b> (tenure over or access to project land):  As per current tenure
<b>Other interests in affected land</b> (eg. easements, native title claims):  NA

## 10. Required approvals

<b>State and Commonwealth approvals required for project components</b> (if known):  There are a number of approvals required for the project. The key approvals required include:  <i>Environment Protection Act 1970:</i> - EPA Victoria Works Approval  <i>Planning and Environment Act 1987</i> - Planning Approval under the Latrobe Planning Scheme for the construction of buildings and works  The Maryvale Site also maintains a licence to operate under the <i>Occupational Health and Safety Act 2004</i> and <i>Occupational Health and Safety Regulations 2017</i> (Licence to operate Major Hazard Facility). The
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development of the EfW plant will lead to modification of the natural gas handling and storage facilities on site. AP will notify WorkSafe of a potential change and will review the existing Safety Case.

**Have any applications for approval been lodged?**

No  Yes If yes, please provide details.

**Approval agency consultation** (agencies with whom the proposal has been discussed):

Environment Protection Authority (EPA), Victoria  
Department of Environment, Land, Water and Planning (Impact Assessment Unit)  
Latrobe City Council  
Worksafe

**Other agencies consulted:**

Latrobe Valley Authority  
Metropolitan Waste and Resource Recovery Group  
Gippsland Waste and Resource Recovery Group  
Regional Development Victoria  
Sustainability Victoria

## PART 2 POTENTIAL ENVIRONMENTAL EFFECTS

### 11. Potentially significant environmental effects

**Overview of potentially significant environmental effects** (identify key potential effects and comment on their significance and likelihood, as well as key uncertainties):

The proposed EfW plant siting, within an existing operating plant that is surrounded by a planning buffer zone, makes the proposed site an ideal setting for such a facility. As the facility will incorporate leading pollution controls and proven best-practice technology, any resulting emissions are expected to be well within current Victorian State Environment Protection Policy (SEPP) limits, as well as within the European Union Industrial Emission Directive limits (Directive 2010/75/EU). The proposed controls to be installed on the facility will significantly reduce environmental and social risks.

Specific environmental aspects and any potential impacts are discussed below:

#### Flora and Fauna

The Project Site is unlikely to support any threatened ecological communities listed under the *Flora and Fauna Guarantee (FFG) Act 1988* (FFG-listed communities), or any threatened ecological communities listed under the *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* (EPBC-listed communities).

The Project Site is predominantly clear of native vegetation and therefore highly unlikely to support any native vegetation, threatened species and/or threatened species habitat or threatened ecological communities.

There is a moderate to high likelihood that two threatened species, the White-bellied Sea-Eagle (*Haliaeetus leucogaster*), and the Southern Blue-gum (*Eucalyptus globulus subsp. globulus*) may occur, based on relevant records and models. The likelihood of either of these species being impacted by the proposed works is low. In the case of the White-bellied Sea-Eagle, the species may roam over the site, however, the site is unlikely to provide breeding sites or otherwise significant habitat. Any presence of the Southern Blue-gum in the vicinity of the EfW plant would be outside of its natural range.

The Project Site is unlikely to support any FFG-listed communities. From a desktop assessment, the potential presence of FFG-listed communities is indicated by the presence of Ecological Vegetation Classes (EVCs) with characteristics that closely align with FFG-listed communities, as modelled in NatureKit (DELWP 2017). Using EVC modelling for those determined to be present (i.e. EVC 55: Swamp Scrub and EV 151: Plains Grassy Forest), the Project Site is not expected to support any FFG-listed communities. It is therefore unlikely that the Project Site will support any FFG-listed communities.

Similarly, the Project Site is unlikely to support any EPBC-listed communities. From a desktop assessment, the potential presence of EPBC-listed communities is indicated by the Protected Matters Search Tool (PMST) (Department of Environment and Energy DoEE 2017). The PMST modelled the potential presence of one EPBC-listed community (Gippsland Red Gum (*Eucalyptus tereticornis subsp. mediana*) Grassy Woodland and Associated Native Grassland) within the Project Site. However, the Project Site is unlikely to support areas of remnant native vegetation, and thus unlikely to constitute this threatened vegetation community. It is also noted the Gippsland Red Gum community is generally associated with floodplain areas, which is incongruous with the Project Site.

The additional Matters of National Environmental Significance (MNES) modelled as potentially relevant within the Project Site include the Ramsar listed Gippsland lakes (Project Site is 70km upstream) and 13 listed migratory bird species. However, these MNES listed under the *EPBC Act 1999* are highly unlikely to be impacted by the proposed works due to either the distance from the Project Site or the lack of habitat that exists on the project site for migratory species.

#### Cultural Heritage

A search of the Victorian Aboriginal Heritage Register (VAHR) revealed that there are no Aboriginal Places within the Project Site. However, due to its location near these waterways and the potential ground disturbance at the Maryvale Mill site, it is assessed that there is a low-moderate potential for previously unknown Aboriginal Places to be present within the Project Site. While the proposed works are defined as a high impact activity, the Project Site does not intersect with any designated areas of cultural heritage sensitivity (CHS). Therefore, a mandatory Cultural Heritage Management Plan (CHMP) is not required for the Project, in accordance with the Aboriginal Heritage Regulations 2007. A voluntary CHMP has not been recommended as the Project Site has been heavily disturbed by prior construction and operational activities associated with the AP Maryvale Mill.

Given the recent nominations by the community for 20th century industrial sites, the Maryvale Mill complex also has the potential to be nominated, as it is a 20th century industrial site which was integral to the development of Morwell and Traralgon. The mill complex, in which the Project Site is located, has also been previously identified in a local heritage study to be of potential heritage significance. As such, there is a chance that the complex may also be nominated to the VHR as a place of industrial heritage within the Latrobe Valley. The Project Site itself, however, is not a key component of the Maryvale Mill complex, and is unlikely to be of heritage significance. Additionally, there are no registered historical heritage places within, adjacent to, or intersecting with, the Project Site.

### Air Emissions

AP recognises that air emission impacts and their management will be the primary focus and area of concern for local stakeholders and as such, a detailed air quality impact assessment has been undertaken as part of the Works Approval Application (WAA), which has been discussed in detail with EPA Victoria. This has included emissions from the now closed Hazelwood power station, Morwell power Station, Energy Brix and Carter Holt Harvey saw mill in the background assessment, which means assessment will be more conservative in terms of cumulative effects. Emission discharges will meet both the Victoria's State Environment Protection Policy (Air Quality Management) 2001 and all the emissions standards set in the European Union's Waste Incineration Directive 2000/76/EC (WID), which was recast into the Industrial Emissions Directive 2010/75/EU (IED).

The IED sets stringent emission limits and monitoring requirements which include continuous emissions monitoring of total particulate matter (TPM); sulphur dioxide (SO<sub>2</sub>); oxides of nitrogen (NO<sub>x</sub>); hydrogen chloride (HCl); carbon monoxide (CO); total organic carbon (TOC); and hydrogen fluoride (HF).

There will be at a minimum, non-continuous stack emission monitoring of other pollutants such as heavy metals, dioxins and furans, a minimum of two measurements per year, which will be more frequent during the initial operation of the plant. This periodic extractive stack emissions testing will be undertaken by an independent NATA accredited testing authority, to Australian Standards for stationary source emissions testing, European and other relevant international guidance for stack testing for EfW plant, and in compliance with EPA guidance and any particular operating licence conditions. A set of permanent testing ports and an access platform will be installed in the stack duct for this purpose. This monitoring will capture seasonal variability and character of waste feedstock. Additionally, to guarantee complete combustion, the IED requires all plants to keep the combustion or co-combustion gases at a temperature of at least 850°C for at least two seconds after the last injection of air. This will mitigate the formation of dioxins and to ensure complete combustion of waste and volatile organic compounds (VOCs) formed in the process.

The EfW tipping hall, which will receive waste by train and/or truck, will be entirely enclosed and operated under negative pressure – where the outside air is drawn into the tipping hall and air inside the tipping hall is not permitted to escape to the outside atmosphere. The expectation is there will be negligible fugitive odour and other air pollutant emissions from the site. Odorous molecules and hydrocarbons / VOCs are expected to be destroyed in the EfW's processes; i.e., foul air from the tipping hall will be used as combustion air in the EfW boiler. The assessment will include an odour impact assessment, that will identify all potential sources of odour. In the event that material sources of odour are identified that have the potential to add cumulative impacts, odour modelling will be undertaken. The assessment will include review of best practice means of odour containment, management and destruction. Any VOCs for assessment will be set out after the completion of the Project team's analysis of emissions.

### Waste

## Construction Wastes

The construction phase of the development will generate wastes typical of any facility development (i.e. concrete, steel, and other wastes typical of construction of buildings and hardstand areas). These general waste materials are anticipated to be minor. Waste avoidance and resource recovery measures will be implemented to divert resources from landfill in accordance with the waste hierarchy and the principles of the *“Getting full value: The Victorian waste and Resource Recovery Policy”* where practicable and feasible.

There is also the potential for large amounts of excavated soil to be generated during site preparatory stages as the facility will be built into the side of an existing hill. It is AP’s intention that all spoil generated by the Project during the construction phase is to be reused on the EfW Plant site or within the broader Mill site. If there is a need for disposal of clean or contaminated spoil offsite from the EfW Plant, further sampling and analysis will be conducted to determine potential contamination. Any contaminated spoil will be managed in accordance with EPA requirements and disposed of or managed accordingly.

## Operational Wastes

The proposed EfW Plant is expected to treat 650,000 tonnes of non-hazardous waste per year, consisting of approximately 70 to 80% residual municipal solid waste (MSW) and the remainder being commercial and industrial (C&I) waste, which has similar components and characteristics to MSW.

MSW and C&I waste will arrive on-site by one of the following means:

- Special 40 foot sealed shipping containers of MSW and C&I waste hauled by rail from Melbourne to the adjacent siding, with the waste compacted into the containers before loading on to trains, with a gross container mass typically between 32 –36 tonnes. These containers will be transferred from the rail siding at Maryvale to the EfW tipping hall via container reach stackers loading to a special site based tipping skel trailer vehicle which can tip the containers in the tipping hall into the waste bunker.
- “A” double vehicles carrying 2 x 40’ special sealed waste containers of MSW and C&I waste to a maximum gross container mass (GCM) of 85.5 t which will be routed to the EfW rail siding area for container transfer. These containers will be transferred from the rail siding at Maryvale to the EfW tipping hall via container reach stackers loading to a special site based tipping skel trailer vehicle which can tip the containers in the tipping hall into the waste bunker
- Waste compactor collection vehicles (also known as refuse collection vehicles, RCVs) carrying Gippsland sourced MSW and C&I waste, of which a typical payload is of the order of 6-7 tonnes. Collection compactors will discharge directly into waste bunker.
- C&I waste delivery vehicles of the self-unloading enclosed trailer types (e.g. self-tippers or walking floor type trailers), discharging directly into waste bunker.
- Covered roll on/roll off skip carrying vehicles for waste deliveries discharging directly into waste bunker.

Through routine operation, EfW facilities generate a variety of residues. The amount of residues generated and the nature of the residues generated is partially determined by the composition of its inputs, and partially determined by design choices.

Residues fall within three broad categories:

- grate or bottom ash: this is the solid residue removed from the combustion chamber after the waste has been combusted.

- boiler ash: the part of the fly ash that is removed from the boiler.
- flue gas treatment residues from the air pollution control (APC) equipment (APC residues or 'APCr').

Usually the boiler ash and APC residues are captured in a combined system and require disposal at a landfill. This is expected to constitute around 4% of the input material (by weight).

Bottom ash will be the largest of the waste outputs with a weight of approximately 12 to 25% of the input material (dependent on the waste feed composition, and EfW technology and operational practices employed). In the case of the proposed AP facility, this would equate to approximately 80,000 to 180,000 tonnes of bottom ash that would require disposal each year. The bottom ash will also contain ferrous and non-ferrous metals that have passed through the grate that can be recovered.

The high mineral content of the bottom ash residues can make them potentially suitable for use as road base or other construction material. AP's preference is for the bottom ash to be reused in this manner and is investigating possibilities for reuse and/or recycling. Should possibilities not be available at the time of operation, these wastes will be disposed of to landfill until viable recovery options become available. Until the EfW Plant is operational and the bottom ash can be tested for its constituents, the bottom ash will be disposed of to landfill. Based on the experience of other EfW plants around the world, it is expected that the bottom ash will be able to be disposed as industrial waste.

Treatment of residual waste via an EfW facility represents a higher order management option in the waste hierarchy than sending the same waste to landfill. It is a proven technology that will potentially reduce the volume of waste by up to 90%, thus reducing demand on valuable landfill airspace. This volume reduction is achievable by virtue of the ash residues produced being considerably denser (of the order of 2 to 3 times greater) than the incoming waste feedstock, such that in volumetric terms, the space required for residue if disposed to landfill is reduced much more in volume terms than in tonnage.

### **Surface water**

Surface water hydrology is considered likely to follow the Project Site topography, draining in a northerly direction towards the Latrobe River. The Plant will require the design and construction of an on-site drainage system, an off-site drainage system to connect into the existing Maryvale Mill system, and an oily water treatment system. Drainage from areas of the Project that could be contaminated by chemicals (thus designated as trade waste) shall pass through a suitably designed local chemical drainage system, storage and treatment system prior to being discharged into the existing trade waste drains which ultimately ends up at the Gippsland Water Factory for final treatment.

### **Ground water**

Ground water in the vicinity of the Project Site is indicated to flow to the northeast towards the Latrobe River. The topography of the broader Maryvale Mill follows this pattern, with surface water considered likely to drain towards treatment ponds at the Mill's northern extent. With the exception of construction activities, the project is not expected to interact with groundwater. There may be small quantities of groundwater required to be extracted during construction (mainly related to piling), however this will not be ongoing. Any groundwater encountered during the construction of the EfW Plant will be sampled and analysed and managed in accordance with EPA requirements. Groundwater could be used as construction water, subject to testing of potential contaminants. No groundwater will be extracted from groundwater bores in this Project.



## 12. Native vegetation, flora and fauna

### Native vegetation

**Is any native vegetation likely to be cleared or otherwise affected by the project?**

NYD  No  Yes If yes, answer the following questions and attach details.

**What investigation of native vegetation in the project area has been done?** (briefly describe)

A preliminary desktop ecology assessment has been completed to identify flora and fauna values likely to be present within the Project Site. Threatened native fauna present may include the White-bellied Sea Eagle (*Haliaeetus leucogaster*). A review of modelled extents of native as Ecological Vegetation Classes (EVC) was considered against relevant aerial photography (Figure 1.7 below). The quality, extent and any planning triggers of any native vegetation presence would be confirmed in the field as part of future site investigations.

**What is the maximum area of native vegetation that may need to be cleared?**

NYD Estimated area .....Negligible (<1ha).....(hectares)

**How much of this clearing would be authorised under a Forest Management Plan or Fire Protection Plan?**

N/A ..... approx. percent (if applicable)

**Which Ecological Vegetation Classes may be affected?** (if not authorised as above)

NYD  Preliminary/detailed assessment completed. If assessed, please list.

EVC 55: Swamp Scrub potentially occurring (refer to Figure 1.7)

EVC 151: Plains Grassy Forest potentially occurring (refer to Figure 1.7)

**Have potential vegetation offsets been identified as yet?**

NYD  Yes If yes, please briefly describe.

Native vegetation offsets are unlikely to be required, however, any offsets required will be sought through a suitably authorised vegetation credit broker as required.

**Other information/comments?** (eg. accuracy of information)

NYD = not yet determined

### Flora and fauna

**What investigations of flora and fauna in the project area have been done?**

(provide overview here and attach details of method and results of any surveys for the project & describe their accuracy)

A preliminary desktop assessment has been performed to determine ecological values with the potential to be present within the project site, including the likelihood of the presence of threatened species and their habitat, and the presence of native vegetation communities as Ecological Vegetation Class (EVC). This assessment identified flora and fauna values likely to be present within the Project Site and involved a review of VBA records, a PMST search, as well as analysis of aerial imagery and biodiversity data available on NatureKit.

Based on the survey conducted the following results were provided:

- The Project Site is predominantly clear of native vegetation, and therefore highly unlikely to support any native vegetation, threatened species and/or threatened species habitat or threatened ecological communities.
- There is a moderate to high likelihood that two threatened species, the White-bellied Sea-Eagle and the Southern Blue-gum may occur, based on relevant records and models. The likelihood of

either of these species being impacted by the proposed works is low.

- In the case of the White-bellied Sea-Eagle, the species may roam over the site, however, the site is unlikely to provide breeding sites or otherwise significant habitat.
- The Southern Blue-gum is outside of its natural range and is a plantation species at the Project Site.

**Have any threatened or migratory species or listed communities been recorded from the local area?**

NYD  No  Yes If yes, please:

- List species/communities recorded in recent surveys and/or past observations.
- Indicate which of these have been recorded from the project site or nearby.

**Threatened species:** In the last 30 years, there have been 19 threatened species recorded within 5 km of the Project Site. Only two of these are considered to have a moderate to high likelihood of occurring within the Project Site: The White-bellied Sea Eagle (*Haliaeetus leucogaster*) and the Southern Blue-gum (*Eucalyptus globulus* subsp. *globulus*). The White-bellied Sea Eagle is species is unlikely to make significant use of the limited habitat within the Project Site, and thus is unlikely to be impacted by the proposed works. The species is considered to range over the site for hunting, but unlikely to utilise the site for breeding purposes. The Project Site is outside the geographic range of the Southern Blue-gum, with any individuals present likely to have been planted or derived from planted stock, thus the proposed works are unlikely to impact this species.

**Migratory species:** In the last 30 years, there have been 3 migratory species listed under international migratory bird agreements recorded within 5 km of the Project Site, the White-bellied Sea Eagle (*Haliaeetus leucogaster*), the Eastern Great Egret (*Ardea modesta*), and the Cattle Egret (*Ardea ibis*). Based on the preliminary assessment, habitat within the study area likely represents poor quality habitat for these species owing to its lack of suitable foraging and roosting habitat and distance from key wetland and estuarine areas.

**Threatened communities:** No threatened communities are modelled to occur within the Project Site. EVC modelling indicates that only two EVCs are likely to be present within the Project Site (EVC 55: Swamp Scrub and EVC 151: Plains Grassy Forest). The EVC's do not correspond to any threatened communities listed under the FFG Act or EPBC Act. Further, the Project Site appears to be predominantly clear of native vegetation, with the majority of the Project Site being used for the production plantation timber. Thus the presence of threatened communities is highly unlikely.

**If known, what threatening processes affecting these species or communities may be exacerbated by the project?** (eg. loss or fragmentation of habitats) Please describe briefly.

The principle threatening processes for each of the above-mentioned species is habitat loss. This threatening process is not expected to be exacerbated by the proposed works due to the nature of the proposed plant and the Project Site representing poor quality habitat.

**Are any threatened or migratory species, other species of conservation significance or listed communities potentially affected by the project?**

NYD  No  Yes If yes, please:

- List these species/communities:
- Indicate which species or communities could be subject to a major or extensive impact (including the loss of a genetically important population of a species listed or nominated for listing) Comment on likelihood of effects and associated uncertainties, if practicable.

**Is mitigation of potential effects on indigenous flora and fauna proposed?**

NYD  No  Yes If yes, please briefly describe.

**Other information/comments?** (eg. accuracy of information)

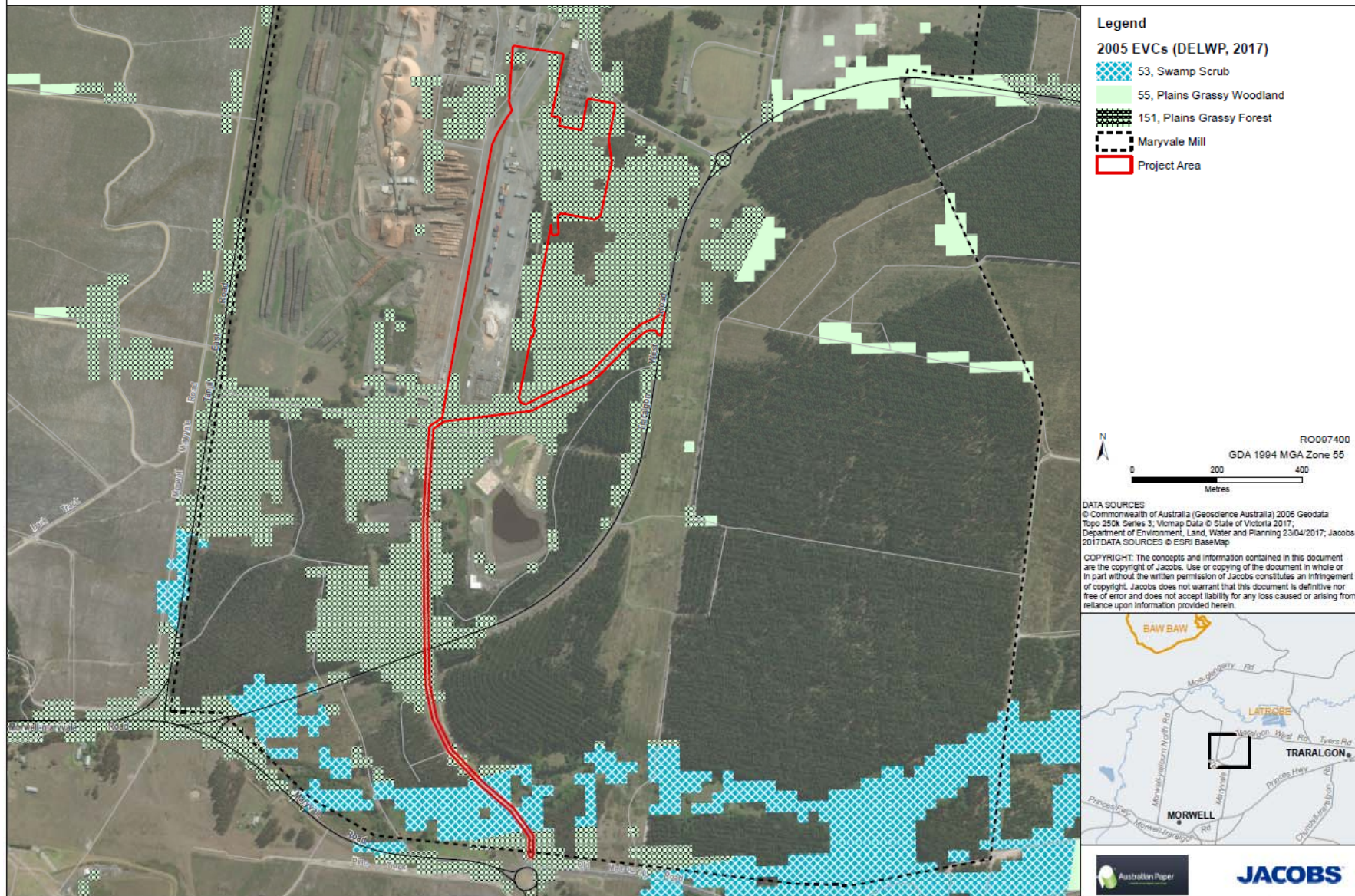


Figure 1.7 - Ecological Vegetation Classes modelled to occur within the Project Site.

### 13. Water environments

**Will the project require significant volumes of fresh water (eg. > 1 GL/yr)?**

NYD  No  Yes If yes, indicate approximate volume and likely source.

Depending on the load and operating mode of the EfW plant, the project will require approximately 5-6ML/day (approx. 1.8-2.1 GL/yr) of fresh water. Note that the information contained herein is preliminary and the optimisation around recycling of water has not yet been formally assessed. The Engineer, Procure and Construct (EPC) Tenderers will be providing their own water balance and it is a requirement to recycle as much water as possible.

The water will be sourced from the Maryvale Site's existing water supply via Moondarra Reservoir and it will be used at the EfW plant for various purposes, including cooling tower water make-up, ash handling, flue gas treatment (if a semi-dry system is used), production of demineralised water for the generation of steam, boiler chemistry control and online boiler cleans (soot blowing).

However, in the context of the water use on the existing Maryvale site, the water consumption of the EfW plant will be low. Currently the existing Maryvale site uses on average between approximately 70-80ML/day and discharges on average approximately 55ML/day to the Latrobe River (after extensive clarification and treatment) and on average between 15-20ML/day to Gippsland Water as trade waste.

**Will the project discharge waste water or runoff to water environments?**

NYD  No  Yes If yes, specify types of discharges and which environments.

The water discharges from the EfW plant will be small in comparison to the water discharges from the existing Maryvale site. It is estimated that the EfW plant will discharge a total of nominally 1 ML/day (depending on the load and operating mode of the EfW plant) of waste water and trade waste, with the majority (~70%) consisting of clean waste saline water from the cooling towers, the boilers and raw water filter backwash. The 1 ML/day estimate is consistent with the plant condition where no steam is supplied to the mill. Under this method of operation the cooling towers are discharging at a higher rate, which will not be the expected normal operating condition. Under the condition of supplying 130 tonnes per hour (tph) of steam to the mill, which will be the normal operating condition, the discharge water rate is expected to be closer to 0.4-0.5 ML/day (when the EfW plant's demineralised water and polishing plants are not regenerating)).

The clean waste water will be directed to the Maryvale site's existing wastewater treatment system. The system consists of 2 x primary clarifiers with chemical dosing, an aeration pond, a secondary clarifier and a secondary settling pond. From the secondary settling pond, the treated water is discharged to the Latrobe River under EPA licence #46547 conditions. The water discharged to the river will not include any process effluent that has had contact with waste or residues, and will predominantly contain the same salts and suspended salts present in the raw water concentrated by evaporation in the cooling towers, or by filtration in the water treatment plant. Some dilute caustic and sulphuric anions will also be present as these will be used to control the pH in the process to reduce scaling, and also before discharge in a neutralisation pit in the EfW plant. Trace levels of chlorine will be used for legionella control in the cooling towers, but the residual levels of free chlorine in the clean waste water discharge will be very low, due to the holding time on-site before river discharge.

Clean stormwater runoff from non-contaminated areas of the EfW plant will be directed to the existing Maryvale stormwater collection system, which joins the treated wastewater after the secondary clarifier and flows into the final settling and polishing pond and is part of the licenced discharge.

Trade waste arising from various process flows (such as the regeneration process from the demineralised water and return condensate plants and potentially contaminated storm water (from transformer bunds etc.) will be collected and treated appropriately (e.g. in oil/water separators). The Maryvale Site will recycle this water as much as possible within the EfW plant, however it is expected that some will need to be discharged into the existing trade waste system and ultimately discharge to the Gippsland Water Factory (operated by Gippsland Water) where it will undergo further treatment. Of the expected 1 ML/day of total water discharged from the EfW plant, on average approx. 30% will be trade waste, depending on the operating mode of the plant.

<p><b>Are any waterways, wetlands, estuaries or marine environments likely to be affected?</b>  <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, specify which water environments, answer the following questions and attach any relevant details.</p> <p>Contribution of the EfW plant is not significant on the existing discharges in terms of volume or quality (~10% increase in volumes) and as such, no deleterious effects on the Latrobe River are expected due to the operation of the EfW plant. All water discharges will be in accordance with the EPA licence conditions.</p>
<p><b>Are any of these water environments likely to support threatened or migratory species?</b>  <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, specify which water environments.</p>
<p><b>Are any potentially affected wetlands listed under the Ramsar Convention or in 'A Directory of Important Wetlands in Australia'?</b>  <input type="checkbox"/> NYD <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please specify.</p> <p>The Maryvale Site currently discharges treated wastewater to the Latrobe River at a rate of nominally around 55-65 ML per day. It is proposed that the EfW plant will discharge comparatively small amounts of wastewater to the existing Maryvale wastewater treatment system (of the order of nominally 0.5 to 1 ML/day) and eventually into the Latrobe River under EPA licence conditions. Although the Latrobe River is within the Gippsland Lakes Ramsar site catchment, the site is more than 70km upstream. Furthermore, the discharge of wastewater to the Latrobe River will be under the existing EPA licence conditions. Thus, no significant environmental effects are anticipated for the Ramsar wetlands.</p>
<p><b>Could the project affect streamflows?</b>  <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, briefly describe implications for streamflows.</p>
<p><b>Could regional groundwater resources be affected by the project?</b>  <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, describe in what way.</p>
<p><b>Could environmental values (beneficial uses) of water environments be affected?</b>  <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, identify waterways/water bodies and beneficial uses (as recognised by State Environment Protection Policies)</p>
<p><b>Could aquatic, estuarine or marine ecosystems be affected by the project?</b>  <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, describe in what way.</p>
<p><b>Is there a potential for extensive or major effects on the health or biodiversity of aquatic, estuarine or marine ecosystems over the long-term?</b>  <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please describe. Comment on likelihood of effects and associated uncertainties, if practicable.</p>
<p><b>Is mitigation of potential effects on water environments proposed?</b>  <input type="checkbox"/> NYD <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please briefly describe.</p> <p>Prior to discharge, the clean waste water will be neutralised to adjust pH and be directed to the Maryvale site's existing wastewater treatment system. The system consists of 2 x primary clarifiers with chemical dosing, an aeration pond, a secondary clarifier and a secondary settling pond. From the secondary settling pond, the treated water is discharged to the Latrobe River under EPA licence #46547 conditions. Monitoring of the river discharge is undertaken in accordance with the Maryvale Monitoring and Reporting Program – this is a risk based program designed to allow both AP and the EPA to assess compliance with the licence conditions. Monitoring includes online measurement of some parameters (e.g. temp, pH, EC), and routine sampling (daily, weekly or monthly) for NATA testing of other licence parameters – including suspended solids, Biological Oxygen Demand (BOD), nutrients etc. Additional process monitoring throughout the wastewater treatment stages are also routinely undertaken as a part of the process control regime.</p>
<p><b>Other information/comments?</b> (eg. accuracy of information)</p>

## 14. Landscape and soils

### Landscape

<p><b>Has a preliminary landscape assessment been prepared?</b> <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please attach.</p> <p>Although a detailed landscape assessment has not been conducted, it is expected that the EfW plant, proposed to be located within the existing industrial Maryvale Site with a significant land buffer, will have minimal impact on the landscape character of the surrounding environment.</p> <p>The existing Maryvale Site has been in operation since 1937. There are numerous highly visible industrial elements present at the site including multiple tall stacks (between 30-60m tall), steam vents, pipework, industrial buildings, wastewater treatment plants, conveyor belts, woodchip piles and rail infrastructure. The land on the Maryvale Site has been highly disturbed and modified for eight decades for purposes related to operations of a major pulp and paper mill facility. Beyond the site, numerous open cut coal mines, power stations, high voltage transmission lines and quarries also exist in the vicinity of the Maryvale Site and proposed EfW plant.</p> <p>The Maryvale Site is located to the south of the Latrobe River. To the east, south and west of the site there are hills which keep the site nestled in a small valley. This means that the Maryvale Site is mostly kept out of view from the nearby surrounds and can generally only be viewed as you approach the site from adjacent roads (Tanjil East Rd and Traralgon West Rd). The site is mostly not visible from residential areas.</p> <p>The single emission stack would be the highest point of the proposed EfW Plant and would be the most visible component of the development. The stack height will be determined through a detailed Air Quality Impact Assessment and is anticipated to be in the range of 60-100m. The highest stacks at the existing Maryvale Site are approximately 65m tall.</p> <p>The landscape around the Maryvale Site will have sufficient capacity to absorb the visual change with the introduction of the EfW plant. In this context the visual impact of the proposed EfW plant is expected to be low to negligible. Figure 1.8 below shows the Maryvale Mill in the context of the surrounding landscape.</p>
<p><b>Is the project to be located either within or near an area that is:</b></p> <ul style="list-style-type: none"><li>• <b>Subject to a Landscape Significance Overlay or Environmental Significance Overlay?</b> <input checked="" type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, provide plan showing footprint relative to overlay.</li><li>• <b>Identified as of regional or State significance in a reputable study of landscape values?</b> <input checked="" type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please specify.</li><li>• <b>Within or adjoining land reserved under the <i>National Parks Act 1975</i>?</b> <input checked="" type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please specify.</li><li>• <b>Within or adjoining other public land used for conservation or recreational purposes?</b> <input checked="" type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please specify.</li></ul>
<p><b>Is any clearing vegetation or alteration of landforms likely to affect landscape values?</b> <input checked="" type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please briefly describe.</p> <p>Less than 1 ha of native vegetation is expected to be cleared, on a pre-existing heavy industrial site with the vegetation clearance being mostly plantation tree species. Minimal impact on landscape values is expected due to the development of the EfW Project.</p>
<p><b>Is there a potential for effects on landscape values of regional or State importance?</b> <input checked="" type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Yes Please briefly explain response.</p>
<p><b>Is mitigation of potential landscape effects proposed?</b> <input checked="" type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please briefly describe.</p>

**Other information/comments?** (eg. accuracy of information)

**Note:** A preliminary landscape assessment is a specific requirement for a referral of a wind energy facility. This should provide a description of:

- The landscape character of the site and surrounding areas including landform, vegetation types and coverage, water features, any other notable features and current land use;
- The location of nearby dwellings, townships, recreation areas, major roads, above-ground utilities, tourist routes and walking tracks;
- Views to the site and to the proposed location of wind turbines from key vantage points (including views showing existing nearby dwellings and views from major roads, walking tracks and tourist routes) sufficient to give a sense of the overall site in its setting.



Figure 1.8: Existing Maryvale Mill and surrounding landscape



## Soils

<b>Is there a potential for effects on land stability, acid sulphate soils or highly erodible soils?</b> <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please briefly describe.
<b>Are there geotechnical hazards that may either affect the project or be affected by it?</b> <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please briefly describe.
<b>Other information/comments?</b> (eg. accuracy of information)

## 15. Social environments

<b>Is the project likely to generate significant volumes of road traffic, during construction or operation?</b> <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, provide estimate of traffic volume(s) if practicable. <p>A preliminary traffic and transport assessment has been conducted which assumed trucking all waste into the EfW Plant– as rail transport is AP's preferred option for the transport of waste, trucking of all of the waste is considered a worst case scenario. The assessment concluded that the number of vehicles added by this development will have a minimal traffic impact upon the local road network. The EfW project would add small amounts of truck traffic to roads in the local area relative to current volumes. The only location at which site volumes would be elevated is from Princes Highway to Tramway Road and Alexanders Road to the EfW plant with an increase in truck volumes of 13%, and overall traffic by 2%. This translates to an increase of 63 trucks (compared to existing 482 trucks) and an increase of 75 total vehicles (compared to existing 4,000 vehicles).</p> <p>Furthermore, nearly all of the truck traffic will be on roads that are not in residential areas (Tramway Road and Alexanders Road). The only truck traffic on residential roads will be the Roadside Collection Vehicles (RCVs) from Traralgon travelling along Traralgon West Road to the EfW Plant. The existing situation is that these RCVs collect waste within the residential areas and travel to the Highland Highway landfill for disposal – so the change by the RCVs going to the EfW Plant would be negligible.</p>
<b>Is there a potential for significant effects on the amenity of residents, due to emissions of dust or odours or changes in visual, noise or traffic conditions?</b> <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, briefly describe the nature of the changes in amenity conditions and the possible areas affected. <p>Traffic accessing the proposed EfW site during both construction and operation will be routed along roads that have only a minor residential access role. There are no points along the access routes proposed where heavy vehicles will be passing local residences. Primary heavy vehicle access shall be from the Princes Highway.</p> <p>Alexanders Road provides local access to residences to the west via Airlie Bank Road and Crinigan Road. It also provides access to businesses located along the southern section of Alexanders Road between Princes Drive and Crinigan Road.</p> <p>From the analysis carried out for both the construction and operation phases, the estimated additional traffic generated will not be significant enough to result in negative traffic impacts. No significant reduction in travel times along Alexanders Road or any other local road is expected – estimated travel time increases are negligible (i.e. less than one minute) and will be confirmed during the detailed design stage.</p> <p>The EfW plant is being designed so that it does not add to the noise profile of the existing Maryvale Site. This means that noise impacts are expected to be negligible.</p> <p>The main sources of odour from the EfW plant will be the tipping hall and waste bunker. These areas of the EfW plant will be operated under negative pressure where outside air is drawn in. This air stream will then be drawn into the boiler to be mixed with combustion air. This will ensure that no odours will be released to the surrounding environment. An odour assessment is being conducted with the air quality assessment required for the Works Approval Application.</p>

The processes that generate dust will be enclosed with the EfW plant buildings. Accordingly it is expected that there will be negligible dust impacts on the surrounding environment.

With a significant buffer existing around the Maryvale Site, it is not expected that any amenity impacts will result due to the EfW plant.

**Is there a potential for exposure of a human community to health or safety hazards, due to emissions to air or water or noise or chemical hazards or associated transport?**

NYD  No  Yes If yes, briefly describe the hazards and possible implications.

As previously described, the EfW project will operate to a very high standard of emission discharges, under both steady and non-steady state operating conditions, will meet both the Victoria's State Environment Protection Policy (Air Quality Management) 2001, and all the emissions standards set in the European Union's Waste Incineration Directive 2000/76/EC (WID), which was recast into the Industrial Emissions Directive 2010/75/EU (IED).

The Maryvale Site is not currently subject to explicit operational noise or amenity limits under its EPA licence #46547. It is anticipated that the proposed construction works and subsequent operation of the EfW plant will be within EPA policy requirements. The Project Site has very few sensitive receptors within proximity (approximately 6 residences within a 3km radius). A detailed noise assessment has been conducted as part of the Works Approval Application and concluded that no detrimental noise impacts are expected due to the development of the EfW Plant.

Chemical hazards, water and noise emissions, or any associated transport are not expected to have an increased potential for exposure to the community. The Maryvale Site is an existing Major Hazard Facility (MHF) and natural gas is one of the schedule 9 materials. This will require a review of the safety case with regard to natural gas use. It will also be necessary to review whether the EfW will have an impact on the existing site risk.

Waste will be unloaded from containers and vehicles in an enclosed tipping hall maintained under negative pressure to prevent egress of odour or other noxious fumes. The concrete waste storage bunker will be also enclosed and completely leak tight to prevent the escape of leachate.

Receipt and delivery of waste will be managed and contracted in accordance with a waste acceptance criteria document which clearly specifies which types of waste can be delivered and tipped in the tipping hall. Hazardous wastes will not be included on the acceptable waste, and this procedure will be actively policed through sample load inspections before tipping, and by observations made by waste crane operators managing waste tipping and mixed within the bunker. Facility for removing unacceptable waste from the bunker by crane to a reject skip will be provided in the tipping hall.

A number of fire management systems will be provided in the EfW plant to control the risk of waste fires, including an electric and emergency diesel fire pump supplied hydrant ring main, a site fire water tank, mist sprays over the waste bunker to control dust, smoke detectors, infrared fire detection system over the waste bunker, fire detection in the waste feeding hopper and fire deluge system and water cannons within the bunker and waste feeding hopper. The Maryvale site has an established emergency response team onsite 24/7; there is an onsite fire brigade also capable of chemical spill response, a first aid centre staffed by qualified personnel and a detailed site evacuation plan.

**Is there a potential for displacement of residences or severance of residential access to community resources due to the proposed development?**

NYD  No  Yes If yes, briefly describe potential effects.

**Are non-residential land use activities likely to be displaced as a result of the project?**

NYD  No  Yes If yes, briefly describe the likely effects.

**Do any expected changes in non-residential land use activities have a potential to cause adverse effects on local residents/communities, social groups or industries?**

NYD  No  Yes If yes, briefly describe the potential effects.

<p><b>Is mitigation of potential social effects proposed?</b>  <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please briefly describe.</p>
<p><b>Other information/comments?</b> (eg. accuracy of information)</p>

**Cultural heritage**

<p><b>Have relevant Indigenous organisations been consulted on the occurrence of Aboriginal cultural heritage within the project area?</b>  <input checked="" type="checkbox"/> No If no, list any organisations that it is proposed to consult.  <input type="checkbox"/> Yes If yes, list the organisations so far consulted.</p>
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<p><b>What investigations of cultural heritage in the project area have been done?</b>  (attach details of method and results of any surveys for the project &amp; describe their accuracy)</p> <p>A preliminary cultural heritage assessment has been conducted for the EfW project. A search of the Victorian Aboriginal Heritage Register (VAHR) revealed that there are no Aboriginal Places within the Project Site. However, due to its location near these waterways and the potential ground disturbance at the Maryvale Mill site, it is assessed that there is a low-moderate potential for previously unknown Aboriginal Places to be present within the Project Site. While the proposed works are defined as a high impact activity, the Project Site does not intersect with any designated areas of cultural heritage sensitivity (CHS). Therefore, a mandatory Cultural Heritage Management Plan (CHMP) is not required for the project, in accordance with the Aboriginal Heritage Regulations 2007. A voluntary CHMP has not been recommended as the Project Site has been heavily disturbed by prior construction activities associated with the AP Maryvale Mill.</p> <p>Given the recent nominations by the community for 20th century industrial sites, the Maryvale Mill complex also has the potential to be nominated, as it is a 20th century industrial site which was integral to the development of Morwell and Traralgon. The mill complex, in which the Project Site is located, has also been previously identified in a local heritage study to be of potential heritage significance due to the use of the facility. As such, there is a possibility that the complex may also be nominated to the VHR as a place of industrial heritage within the Latrobe Valley. The Project Site itself, however, is not a key component of the Maryvale Mill complex, and is unlikely to be of heritage significance. Additionally, there are no registered historical heritage places within, adjacent to, or intersecting with, the Project Site.</p>
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<p><b>Is any Aboriginal cultural heritage known from the project area?</b>  <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, briefly describe:</p> <ul style="list-style-type: none"> <li>• Any sites listed on the AAV Site Register</li> <li>• Sites or areas of sensitivity recorded in recent surveys from the project site or nearby</li> <li>• Sites or areas of sensitivity identified by representatives of Indigenous organisations</li> </ul> <p>There is no known Aboriginal cultural heritage within the Project Site. Figure 1.9 below shows the location of Aboriginal Places within 6 km of the Project Site.</p>
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<p><b>Are there any cultural heritage places listed on the Heritage Register or the Archaeological Inventory under the <i>Heritage Act 1995</i> within the project area?</b>  <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please list.</p> <p>There are no cultural heritage places listed on the Heritage Register or the Archaeological Inventory under the Heritage Act 1995 within the project area?</p>
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<p><b>Is mitigation of potential cultural heritage effects proposed?</b>  <input type="checkbox"/> NYD <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, please briefly describe.</p>
<p><b>Other information/comments?</b> (eg. accuracy of information)</p>

Location of Aboriginal Places within 6km of the project area

Australian Paper Energy from Waste Feasibility Study

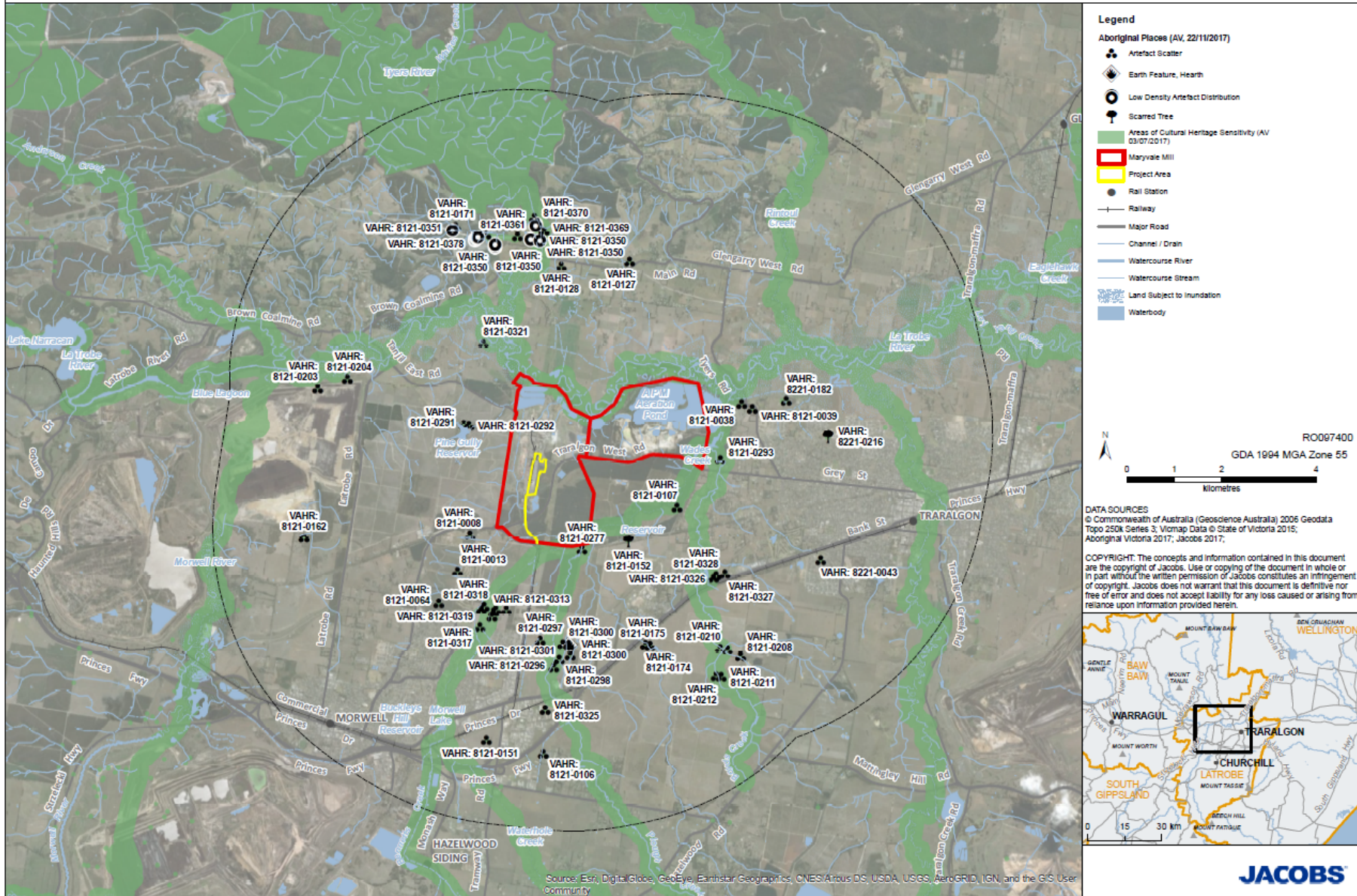


Figure 1.9 - Location of Aboriginal Places within 6 km of the Project Site

## 16. Energy, wastes & greenhouse gas emissions

### What are the main sources of energy that the project facility would consume/generate?

- Electricity network. If possible, estimate power requirement/output.

The intention of the EfW plant is to provide both steam and electricity to the Maryvale Site (nominally 130tph of steam and 25MW of electricity). If the Maryvale Site is shutdown or does not require steam, the EfW plant will produce up to 60MWe output of electricity to be exported to the National Electricity Market. Operation of the EfW plant will consume minor amounts of electricity for operations and ancillaries and minor amounts of steam for boiler on line cleaning.

- Natural gas network. If possible, estimate gas requirement/output

There will be minor amounts of natural gas used during start-up and maintenance activities of the EfW plant. However this will be offset by significant reduction in natural gas currently used at the Maryvale site to produce steam and electricity.

- Generated on-site. If possible, estimate power capacity/output

Nominally 25MWe and 130tph of steam output to Maryvale Mill.  
Capability to produce approximately 70MWe and 0tph of steam.

- Other. Please describe

Under normal operation, the EfW plant will produce nominally 130 tonnes per hour of steam for use in the Maryvale Site.

Please add any relevant additional information.

### What are the main forms of waste that would be generated by the project facility?

- Wastewater. Describe briefly.

The water discharges from the EfW plant will be small in comparison to the water discharges from the existing Maryvale site. It is estimated that the EfW plant will discharge a total of approximately 1ML/day (depending on the load and operating mode of the EfW plant) of waste water and trade waste, with the majority (70%) consisting of clean waste saline water from the cooling towers, the boilers and raw water filter backwash. The clean waste water will be directed to the Maryvale site's existing wastewater treatment system. The system consists of 2 x primary clarifiers with chemical dosing, an aeration pond, a secondary clarifier and a secondary settling pond. From the secondary settling pond, the treated water is discharged to the Latrobe River under EPA licence #46547 conditions.

Clean stormwater runoff from non-contaminated areas of the EfW plant will be directed to the existing Maryvale stormwater collection system, which joins the treated wastewater after the secondary clarifier and flows into the final settling and polishing pond and is part of the licenced discharge.

Trade waste arising from various process flows (such as the regeneration process from the demineralised water and return condensate plants and contaminated storm water (from transformer bunds etc.) will be collected and treated appropriately (e.g. in oil/water separators). The wastewater will be recycled as much as possible within the EfW plant, however it is expected that some will need to be discharged into the existing trade waste system and ultimately discharge to the Gippsland Water Factory where it will undergo further treatment. Of the expected 1 ML/day of total water discharged from the EfW plant, on average approx. 30% will be trade waste, depending on the operating mode of the plant.

- Solid chemical wastes. Describe briefly.

Solid residue from combustion products (bottom ash) and air pollution control residues (APCr – 'fly ash') will be generated during operations. These wastes will be stringently managed to ensure compliance with EU IED requirements and to ensure their beneficial reuse or disposal complies with EPA waste requirements.

Excavated material. Describe briefly.

There is the potential for large amounts of excavated soil to be generated during site preparatory stages as the facility will be built into the side of an existing hill. Given the previous landuse in this area (i.e. log storage, carpark, plantations) it is expected that this material will be clean and suitable for reuse. As such it is AP's intention that all spoil generated by the Project during the construction phase is to be reused on the EfW Plant site or within the broader Mill site. If there is a need for disposal of clean or contaminated spoil offsite from the EfW Plant, further sampling and analysis will be conducted to determine potential contamination. Any contaminated spoil will be managed in accordance with EPA requirements and disposed of or managed accordingly.

Other. Describe briefly.

Please provide relevant further information, including proposed management of wastes.

**What level of greenhouse gas emissions is expected to result directly from operation of the project facility?**

- Less than 50,000 tonnes of CO<sub>2</sub> equivalent per annum
- Between 50,000 and 100,000 tonnes of CO<sub>2</sub> equivalent per annum
- Between 100,000 and 200,000 tonnes of CO<sub>2</sub> equivalent per annum
- More than 200,000 tonnes of CO<sub>2</sub> equivalent per annum

Please add any relevant additional information, including any identified mitigation options.

Greenhouse gas (GHG) emissions calculations and modelling have been conducted for the Project to determine the potential GHG emissions profile. The calculations and modelling have been conducted in accordance with EPA Victoria and National Greenhouse Accounts guidance with the use of industry standard data and calculation methods.

The primary purpose of the development of the EfW plant is to provide an alternative energy source for the Maryvale Site and reduce reliance on the current grid gas and electricity supplied sources. Accordingly the development of the Project will involve the installation of new EfW Plant for energy generation to substitute for current energy sources. The energy-generating components of the EfW Plant that will produce GHG emissions are as follows:

- Two moving grate combustion boilers
- One 6MW black-start diesel generator
- One 200kW emergency shut-down generator

The EfW Plant will produce GHG emissions from the above components through the following processes:

- Combustion of MSW and C&I waste under normal operation in the two moving grate combustion boilers
- Combustion of natural gas during start-up in the two moving grate combustion boilers
- Combustion of diesel fuel in the 6MW black-start diesel generator
- Combustion of diesel fuel in the 200kW emergency shut-down generator
- Logistics and transport:
  - Combustion of diesel fuel in trains/trucks transporting waste to the EfW Plant
  - Combustion of diesel fuel in trucks/plant handling waste and waste containers at the EfW Plant

From a gross GHG emissions perspective, the EfW Plant will produce 355,730 tonnes of CO<sub>2-e</sub> per annum from the above processes. This figure is above the EES Referral criterion of 200,000 tonnes CO<sub>2</sub> equivalent per annum. This is the "Base Case Scenario".

The development of this Project will enable AP to substitute current grid energy sources with energy from the EfW Plant. The reduction in grid electricity and reduction in power generator units (i.e. displaced energy emissions) will lead to savings of 228,155 tonnes CO<sub>2-e</sub> per annum. This will be as a result of

reduced purchased electricity from the national grid and reduced use of back-up diesel generators. This is the “Grid Electricity Reduction Scenario”.

Additional GHG emissions reductions can be made by the turn-down of two of the three existing gas boilers at the Maryvale Mill – the third gas boiler will continue to operate as it does currently, due to the need to supply energy to the lime kiln at the Maryvale Mill. Two of the gas boilers that currently supply heat and electrical energy to the Mill could be replaced by the EfW Plant. The turn-down of these two gas boilers will lead to savings of 155,749 tonnes CO<sub>2-e</sub> per annum. This is the “Best Case Scenario”.

However, at this feasibility stage of the project it is not possible to commit to a full turn-down of the gas boilers as other factors may come into consideration during the subsequent detailed design phase. For example, the gas boilers may be turned down to a substantially reduced operation (e.g. 5-10% of capacity), but may still be required to operate at full capacity in the event of a severe failure of the EfW plant.

On a life cycle basis, there is a positive impact from the Project in relation to greenhouse gas emissions. As the EfW plant will utilise MSW and C&I as feedstock, this will eliminate 650,000 tonnes of MSW/C&I going to landfill. When these wastes are disposed of at landfill, over time the organic component decomposes and generates methane emissions which seep out of the landfill and escape to atmosphere.

Even with sophisticated landfill gas capture techniques (conservatively assumed to be 45%), there will be significant methane emissions to atmosphere. With methane having a global warming potential 25 times greater than carbon dioxide, landfill gas is a significant source of greenhouse gas emissions. Based on the diversion of 650,000 tpa of waste from landfill, it has been calculated that the GHG emissions saved will be approximately 525,000 tonnes CO<sub>2-e</sub> per annum. When considered on a life-cycle basis, the Project will have net GHG emissions savings. This is the “Life Cycle Scenario”.

Scenario	Comments	GHG emissions (tonnes CO <sub>2-e</sub> per annum)
Do nothing scenario	Project does not proceed and waste continues to go to landfill	+523,531
Base case scenario – EfW Plant installed	The EfW Plant is installed and the Maryvale Mill still requires existing energy sources	+355,730
Grid electricity reduction scenario (displaced electricity)	The EfW Plant is installed and grid electricity import can be reduced, as well as small amounts of diesel generator use	+135,349
Best case scenario (displaced electricity and gas)	The EfW Plant is installed, grid electricity import can be eliminated and 2 gas boilers can be turned-down (to 5% capacity)	-20,400
Life cycle scenario	The EfW Plant is installed, grid electricity import can be eliminated and 2 gas boilers can be turned-down (to 5% capacity). 650,000 tonnes of waste diverted from landfill.	-543,931

The mechanism to ensure AP reports on its carbon emissions is the National Greenhouse and Energy Reporting Act (NGER). The Maryvale Site has been reporting its carbon emissions through NGER for the last 10 years. NGER is administered by the Clean Energy Regulator, who require independent audit of the methodology and reported carbon emissions annually.

## 17. Other environmental issues

Are there any other environmental issues arising from the proposed project?

No  Yes If yes, briefly describe.

## 18. Environmental management

What measures are currently proposed to avoid, minimise or manage the main potential adverse environmental effects? (if not already described above)

Siting: Please describe briefly

During the initial phase of the feasibility study, a site selection workshop was undertaken at Maryvale on 26 September 2017, to evaluate the options for positioning the proposed EfW plant on the Maryvale site. The workshop included both AP and Jacobs staff.

Of the five sites originally listed by AP the workshop reviewed the attributes of the three shortlisted sites (see Figure 1.10) against a matrix of scoring criteria that was jointly developed and scored. There were 30 criteria that each of the three sites was evaluated against, over the following broader categories:

- Available land
- Impacts on Operation
- Logistics
- Schedule
- Services
- Site readiness
- Social and Environmental

The clear recommendation of the evaluation process was to proceed based on "Site 3". The primary drivers for this recommendation were as follows (a listing of the scoring analysis is attached for information):

- Adequacy for the purpose and room for potential future expansion
- Access for rail and road without compromising existing operational infrastructure or storage areas
- Low interference between the proposed plant and the Mill in construction and operation
- No poorly rated scores on any strong influencing factors in the analysis





**Figure 1.10 - Three preferred option sites considered in the site selection workshop**

Site 3 does require a larger amount of earthworks in construction to create the project bench, and providing construction laydown area will require more management than the next best option (Site 1). The next preferred site (Site 1) had more significant issues attached with delivering the rail access relative to the preferred site. Site 2 was clearly not preferred due to complexities relating to brownfield construction and potentially negative impacts on mill operations, particularly during construction.

✘ Design: Please describe briefly

### **Combustion Grate and Boiler**

Australian Paper commenced pre-feasibility stage investigations for the project in 2016. In early 2017, representatives from AP conducted an international literature survey and EfW reference plant site visit programme to enhance knowledge within the company for a technology where there were no operating examples to date within Australia. A boiler technology optioneering study was also undertaken in the pre-feasibility work which compared the relative merits of moving grate combustion against fluidised bed combustion. That technology study concluded that the moving grate technology was by far the most commercially proven technology for treating MSW and C&I waste and would offer the lower technical and environmental risk for the project.

An EPC tender process is underway to select the preferred EPC contractor and core moving grate boiler design. One of three well established international technology providers will be selected to be responsible for the design, supply, commissioning and testing of the core process elements of the EfW plant through a competitive tender process

1. Martin Gmbh (Germany) – who have supplied more than 900 grate combustion lines worldwide (<http://www.martingmbh.de/en/startseite.html>)
2. Hitachi Zosen Inova (Switzerland) - who have supplied more than 600 projects worldwide (<http://www.hz-inova.com/cms/en/home/>)
3. Keppel Seghers (Singapore/Belgium) - who have undertaken more than 100 projects worldwide (<http://www.keppelseghers.com/en/>)

EfW using grate combustion is a very established and proven technology internationally and there are many similarities in what is offered by these experienced vendors as prior project learnings lead to convergence of design principles, and only some subtle differences between the technology providers' designs. The design differences between technology providers under consideration for the project are not expected to have any significant performance differences which will result in an environmental impact. These technologies can be considered as best practice.

## Flue Gas Treatment and Monitoring

All flue gas emission controls to be adopted for the project have been selected based on an international Best Available Technology (BAT) review for waste incineration plants, and shall following the guiding BAT principles of the European Commission Integrated Pollution Prevention and Control Reference Document on BAT for Waste Incineration, August 2006 (EC BREF). The range of best practise technologies included in the EC BREF were considered. The 2017 draft update for the EC BREF<sup>1</sup> was also considered in the evaluation where different for the 2006 version, to ensure the most up to date practice recommendations were considered in the assessment. This BAT assessment will likely be further refined by prospective EPC contractors in their tender stage and detailed designs.

The flue gas treatment technologies as selected by the pre-EPC tender BAT assessment and adopted for the project technical specification are as follows:

- Flue gas recirculation for control of oxides of nitrogen generation in the furnace and for combustion control
- Online flue gas oxygen measurement at the boiler economiser exit for controlling adequate furnace air supply for complete combustion with a design excess oxygen target of 6 vol % or greater at all times. Provision of a carbon monoxide analyser for combustion tuning optimisation shall also be considered on a merit basis in the design.
- Selective Non Catalytic Reduction (SNCR) using Urea solution for oxides of nitrogen control in the upper zone of the furnace
- Semi-dry or dry lime acid gas injection (preferably with a recirculation system for APC residues to the bag filter inlet duct or sorbent reactor vessel for increasing efficiency of reagent use and for the reduction of APC residue generation). The acid gas sorbent may be burnt lime or hydrated lime
- Activated carbon injection prior to the bag filters in the flue gas duct or sorbent reactor system adjacent to the lime dosing point
- A single stage of bag filters for fly ash particulate control and removal of all spent lime and activated carbon residues in a combined waste stream.
- A NATA and MCERTS (UK gas analyser accreditation scheme) certified CEMS system for measuring all pollutant and duct process condition parameters as required for on-line measurement under the IED, and in addition, for the avoidance of doubt, to measure also ammonia (slippage) for SNCR dosing control optimisation.

Environmental management: Please describe briefly.

The existing Maryvale Site operates under a Licence #46547 from EPA Victoria. This licence will likely be amended to include the EfW plant and the additional scheduled category triggered – A08 (Waste to Energy).

<sup>1</sup> [http://eippcb.jrc.ec.europa.eu/reference/BREF/WI/WI\\_5\\_24-05-2017\\_web.pdf](http://eippcb.jrc.ec.europa.eu/reference/BREF/WI/WI_5_24-05-2017_web.pdf)

The Maryvale Site holds external certification to ISO14001 Environmental Management System. This system is re-certified every three years with surveillance audits conducted annually.

In an integrated approach, the Maryvale Site also maintains certification to ISO9001 Quality Management Systems and AS/NZS4801 Occupational health and safety management systems and Major Hazards Facility (MHF) licence to operate.

Together all these systems ensure that the key elements of the management systems being compliance, planning, risk identification, objective setting, monitoring & measurement, operational control, communications, audit programs, emergency preparedness, corrective action and management review are delivered across the facility.

Other: Please describe briefly

Add any relevant additional information.

## 19. Other activities

**Are there any other activities in the vicinity of the proposed project that have a potential for cumulative effects?**

NYD  No  Yes If yes, briefly describe.

There are three other major baseload power stations in the Latrobe Valley – Loy Yang A, Loy Yang B, and Yallourn Power Station. The air quality modelling has been conducted using the worst case scenarios from each of these other power stations. All emissions have been modelled to meet SEPP requirements and EU IED requirements.

The air quality assessment includes emissions from the now closed Hazelwood power station, Morwell power station, Energy Brix and Carter Holt Harvey saw mill in the background, which means assessment will be more conservative in terms of cumulative effects.

## 20. Investigation program

### Study program

**Have any environmental studies not referred to above been conducted for the project?**

No  Yes If yes, please list here and attach if relevant.

**Has a program for future environmental studies been developed?**

No  Yes If yes, briefly describe.

As described previously, an extensive environmental study and assessment program is being conducted to inform the EPA Works Approval Application and Planning Permit Application processes. Studies and assessments that have either already been conducted, or are in progress, include:

- Air Quality, including odour assessment (including modelling)
- Plume Rise Assessment
- Noise (including modelling)
- Greenhouse Gas
- Ecology (Fauna and Flora – desktop and field)
- Contaminated Land (desktop)

- Cultural Heritage (desktop)

### Consultation program

#### Has a consultation program conducted to date for the project?

No  Yes If yes, outline the consultation activities and the stakeholder groups or organisations consulted.

AP has been undertaking an extensive consultation program, which will continue throughout the EfW project's development.

Australian Paper took out two separate advertisements in the Latrobe Valley Express calling for interest in attending the focus group sessions. An email address and phone number were provided to register interest. Currently there are over 60 people registered to receive email updates on the project. This method was designed to encourage community members with a particular interest who were encouraged to attend. The majority of participants generally saw the potential benefits of the EfW project, particularly in relation to jobs and the contribution to the local economy. However, they did not believe these benefits should come at any cost – which was consistent with one of the key themes from the first round of consultation. This engagement further informed the feasibility study topics including the comments mentioned previously about odour and air emissions.

AP have also opened a local project office and information centre at 126 George Street, Morwell. This is available Tuesday to Friday (9am to 3pm) for any stakeholders or members of the community to come and discuss any concerns with the project, or answer any questions they may have. At the office there is also an extensive EfW display which show inputs into the plant, outputs, and process controls in-place. An email address [creatingenergy@australianpaper.com.au](mailto:creatingenergy@australianpaper.com.au) has also been established if any stakeholder wishes to provide questions and concerns.

Australian Paper has recently updated its internet website and EfW materials will be available via the internet.

Regular and additional meetings with the existing Maryvale Community Consultative Committee (CCC) have included presentations on the EfW plant, technologies, other similar plants around the world, and question and answer sessions. These have been actively engaging and the community overall has been supportive of the proposed plant.

#### Has a program for future consultation been developed?

NYD  No  Yes If yes, briefly describe.

A Communication and Engagement Action Plan has been developed which includes extensive engagement activities, consultation, communications, enquiry and complaint query processes and key messaging. A professional communications firm has been employed to support this process.

Key upcoming communication and consultation actions include “pop-up” information centres in local town centres (i.e. Traralgon, Mid Valley Morwell and Moe) as well as the Maryvale Mill Open Day – scheduled to commence in March 2018.

In addition AP intends to directly seek community submissions on the proposed EfW facility in parallel with the EPA Works Approval public comment phase.

**Authorised person for proponent:**

I, ...David Jettner.....(full name),

...General Manager Corporate Development.....(position), confirm that the information contained in this form is, to my knowledge, true and not misleading.



Signature \_\_\_\_\_

Date 13 March 2018

**Person who prepared this referral:**

I, ...Roger Winders.....(full name),

Senior Environmental Consultant.....(position), confirm that the information contained in this form is, to my knowledge, true and not misleading.



Signature \_\_\_\_\_

Date 13 March 2018

**Appendix 1 – Air quality assessment**

**Appendix 2 – Greenhouse gas assessment**

**Appendix 3 – Waste assessment**

**Appendix 4 – Noise assessment**

**Appendix 5 – Traffic assessment**

**Appendix 6 – Planning assessment**

**Appendix 7 – Social impact assessment**

**Appendix 8 – Cultural heritage assessment**

**Appendix 9 – Ecology (Flora and Fauna) assessment**