Please indicate the section and page numbers your feedback relates to

1.3 What is the scope of the Metropolitan Implementation Plan, and how is it developed?

Figure 2 – Waste and resource recovery system

PE Comment:

Figure 2 does not reflect a modern circular economy such as is found in Japan or Western Europe, or the east coast of the USA. With Energy from Waste (EfW) integrated into the waste management system, landfill is largely a requirement for bulk inert wastes from Construction & Demolition activities, rather than an accepted requirement for the processing of household and similar mixed wastes.

2.1 Achieving our goals: the State Infrastructure Plan

The strategic directions for this Consultation Draft are the same strategic directions listed in the State Infrastructure Plan.

These directions are to:

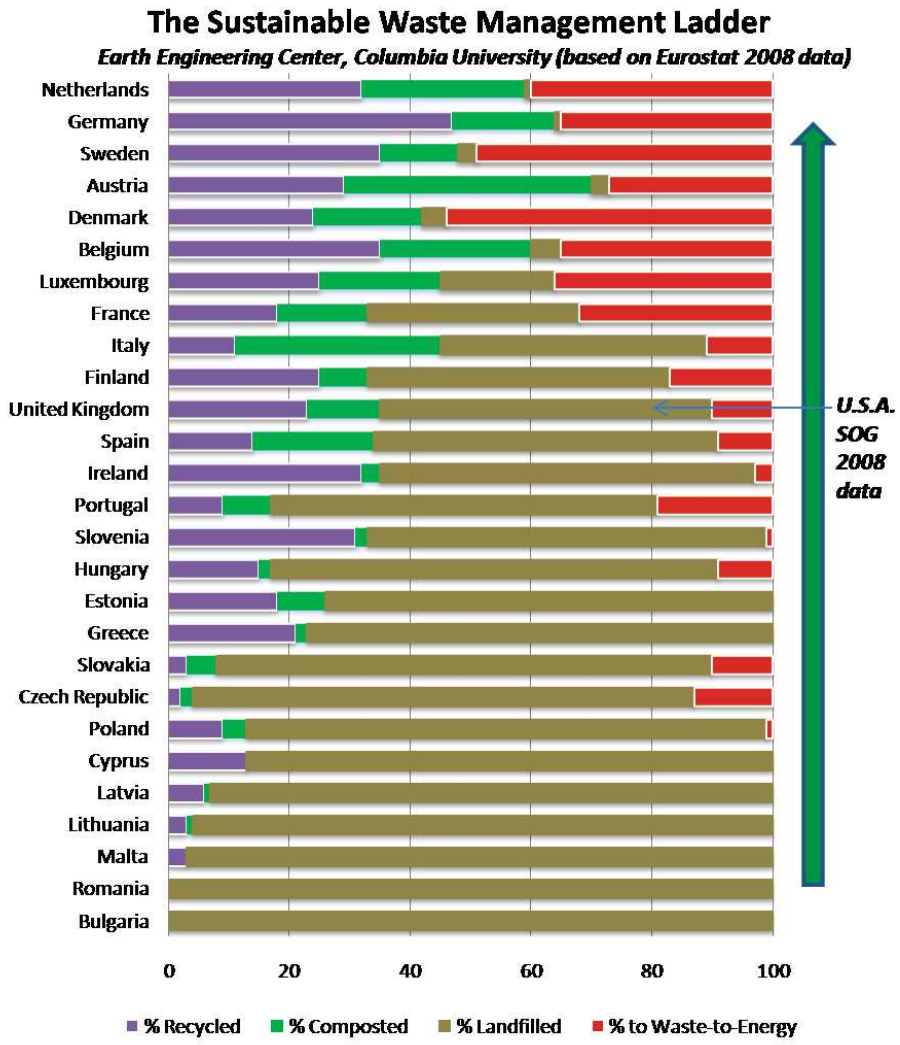
- maximise the diversion of recoverable materials from landfills
- support increased resource recovery
- achieve quantities for reprocessing
- manage waste and material streams
- maximise economic outcomes, provide cost effective
- service delivery and reduce community, environment and
- public health impacts (based on evidence)
- facilitate a cost effective statewide network of waste and resource recovery infrastructure.

PE Comment:

Energy from Waste (EfW) or Waste to Energy (WtE) is a globally accepted pillar of a fully integrated waste and resource recovery management system, along-side composting of source separated organics and recycling, where the objective is to reduce (if not eliminate) a reliance on landfill disposal – the lowest rung of the Waste Hierarchy. The most developed countries in continental Europe have now essentially decoupled their economies from a reliance on landfill disposal by integrating EfW into the waste management system, alongside composting of source separated organics and recycling. EfW is proven to maximise resource recovery from mixed waste streams such as MSW and C&I waste, with diversion from landfill of >95%, when the ash residues are reused for construction activities – common practice in Europe and Japan.

As shown in the picture below, those countries with virtually no requirement for landfill disposal also have the highest rates of recycling and the highest proportion of EfW.

It is important to note that these countries do not have the 'luxury' of cheap landfill airspace and have had to be innovative about how they manage their residual waste. As a consequence, each of these countries has a network of EfW facilities, many of which have been in operation for decades. Older facilities have been upgraded over time to incorporate improvements in combustion and flue gas cleaning techniques, in order to meet the stringent EU emission directive, the Industrial Emissions Directive (IED) (2010/75/EU). As noted in the Metropolitan Implementation Plan, Melbourne has no such facilities.



2.2 Priority actions for the metropolitan region

Priority 1: Minimise councils' reliance on landfills through group procurement of residual waste collection and processing that progressively increases the resource recovery rate over the contract duration.

PE Comment:

Decoupling collection contracts from post-collection contracts will allow for more appropriate contractual arrangements between: (a) collection contractors, who can work to shorter contractual terms, and (b) post-collection service providers (composters, MRFs, EfWs), who generally will require longer term contracts for project finance requirements, where infrastructure is to be provided by the private sector.

Priority 6: Develop a Transfer Station Growth Strategy to facilitate a network that can manage projected waste volumes while maximising resource recovery.

How will this help implement the State Infrastructure Plan strategic directions?

The growth strategy will:

- maximise diversion of recoverable materials from landfill through local government and private transfer stations
- support increased resource recovery by ensuring the spokes (the sequence of activities that moves materials from generators to hubs) recover all viable materials before receival at landfills

PE Comment:

Once again, the Plan emphasises the continuing reliance on landfill rather than focusing on the use of EfW, as the proven alternative to landfill disposal for non-recyclable residual waste – evidenced by most other developed economies.

Priority 2: Build the metropolitan organics processing network and maximise the network's productivity by accepting household and commercial food waste.

& Priority 8: Maximise recovery of priority materials (identified through Victorian Market Development Strategy) by establishing relationships between waste generators and the processing industry.

PE Comment:

The Plan prioritises Organics collection and processing over EfW, which will result in an increase in the time that Melbourne will have to rely on landfill. A faster and less disruptive pathway would be to prioritise them equally.

5.4 Infrastructure for treating residual waste

Residual waste treatment infrastructure processes mixed waste primarily from the MSW and C&I sectors. The infrastructure can recover recyclable materials and dispose of the remaining residual material to landfill. Residual treatment facilities are classified as resource recovery infrastructure due to their role in sorting waste for recovery or converting waste into fuel or energy.

There are two main types of residual treatment infrastructure:

- Front end or dirty MRF's (sometimes referred to as landfill pre-sort) which utilise a combination of mechanical and hand sorting processes to recover materials from the residual stream. Materials which are recovered are sent for reprocessing while unrecoverable residual material is disposed.
- Advanced Resource Recovery Technology facilities (ARRT) which may use or reprocess the residual waste stream:
    - as a feedstock to a mechanical process to produce organic compost material
    - as feedstock fuel in an anaerobic digestion process to breakdown waste material
    - to produce refuse-derived fuel.

While ARRTs significantly reduce the volume of waste sent to landfill, they still produce a residual component that needs to be disposed.

Table 9 provides detail on residual waste treatment infrastructure.

PE Comment:

With reference to the figure in our response to 2.1 above, the Plan incorrectly identifies dirty MRFs and ARRTs as the two main types of residual treatment infrastructure.

Any assessment of waste management practices in Europe, the UK, Japan and the east cost of the US will quickly identify that EfW is the residual treatment infrastructure of choice for all those countries/cities which have successfully reduced their reliance on landfill disposal. The initial, flawed focus on MBT by the UK, now sees the UK exporting many thousands of tonnes of RDF to be burnt to create energy in EfW facilities in northern Europe, rather than being utilised for energy generation in the UK itself.

5.4.2 Priority action - residual waste processing

Maximising recovery through residual waste processing will be addressed through the Metropolitan Implementation Plan priority action to:

- minimise councils' reliance on landfills through group procurement of residual waste collection and processing that progressively increases the resource recovery rate over the contract duration.

PE Comment:

Proponents of tried and commercially proven EfW residual waste processing solutions are ready and waiting for the opportunity to respond to a group procurement of residual waste processing, which will

immediately virtually eliminate the requirement for putrescible landfill disposal. With the imminent closure of the last landfills in the south east catchment, the time is ripe to initiate the procurement process for Melbourne Metro.

7.1 Siting infrastructure

"MWRRG has developed high level siting criteria to help waste and resource ecovery groups (WRRGs), local government and industry when assessing the suitability of sites for resource recovery and disposal infrastructure (Figures 17 and 18). They are separated into three groups: organics infrastructure, nonorganics infrastructure and landfill.
To support the long term future of waste facilities and landfills it is essential that there is a match between the type of facility, risk and the surrounding land uses.
Facilities likely to generate adverse off-site impacts need to be located on appropriately zoned land. In addition, appropriate buffers, or separation distances, around waste and resource recovery facilities can complement these strategic land use decisions to protect communities and the environment from potential adverse impacts such as dust, noise, odours, landfill gas migration and leachate. Preventing certain kinds of development, and land uses (such as housing and schools) from being too close to waste and resource recovery operations protects the community and waste and the facilities from the impacts of incompatible land uses.
The siting of waste and resource recovery infrastructure in close proximity to end markets provides employment opportunities and can offer opportunities for the co-location of alternative resource recovery facilities with other sectors (e.g. water and waste infrastructure)."

Figure 17: Criteria to identify potential resource recovery infrastructure sites

Waste management facility types

- transfer stations
- resource recovery centres
- resale centres
- material recovery facilities
- co-location of any of the above

Waste streams managed

- municipal solid waste
- commercial & industrial
- construction & demolition

3. Potential co-location with existing or proposed

- landfill sites for closure
- landfills
- waste water treatment facilities

5. Buffers

- 1000 metres or greater from residential areas or other sensitive land uses
- 500 - 1000 metres from buildings and structures

While EfW has not been specifically identified in the Figure 17 listing of Waste management facility types, for managing "Non-organics" or mixed waste streams (such as MSW), it is assumed that it is contemplated for this waste stream rather than the "Organics" waste stream. As such, we wish to comment on potential co-location with existing or proposed facilities or infrastructure and also on the proposed buffers (separation distances).

With regard to **co-location**, international experience demonstrates that the greatest benefits to EfW occur when these facilities are located:

a) close to the communities they serve (i.e. close to where waste generation is occurring) – to minimise transportation costs and associated emissions,

b) close to suitable electricity infrastructure i.e. close to an existing substation, to augment an existing distribution system or transmission system, and minimise line losses; and ideally,

c) close to industry or infrastructure which can utilise either the electricity and/or steam outputs.

There is no need to co-locate an EfW facility near to a landfill because EfW is essentially a Power Station fuelled by waste. Furthermore, it is inappropriate to build a power station on or at a landfill site. Because waste is managed in a fully enclosed space, maintained at a slight negative air pressure (since combustion air is drawn from the waste handling and storage areas of the facility), odour and dust are readily controlled.

With regard to **buffers** (separation distances), the proposed distances are inconsistent with international practice for EfW facilities designed to meet stringent emissions limits, such as the EU Industrial Emissions Directive (2010/75/10). As such, we would propose a separation distance of **500 metres** to the nearest residence and **no separation distance limits** for buildings/structures.

The photos below are of the Edogawa WtE Plant, one of the 21 WtE plants in Tokyo City, with the view of the neighbouring residences across the road from the plant. The plant also provides heating for the baths at the neighbouring aged care facility.

The image below depicts one of three EfW facilities in downtown Paris, with the Eifel Tower in the back-ground. This facility, along with 2 others, treats household waste from 5.7 million residents. In addition to producing 200,000 MWh of electricity, these 3 facilities also heat 1 in 6 buildings in Paris (including Hospitals and the Louvre) and the equivalent of 245,000 homes. (Please refer to http://www.cewep.eu/m_1322)