

waste

MANAGEMENT REVIEW

AUGUST/SEPTEMBER 2016

Planning, people, product

**Peter Murphy says
planning processes,
and end markets are
key to Alex Fraser
Group's success**

FEATURES

Suez prepares for growth in WA
Wastech accolade tops 20-year path
Cleanaway's construction, demolition and industrial waste focus
Lessons for emergency waste planning

REPORTS

What's hindering tyre recycling in Australia?
City Circle's waste timber gasification plant
Hydro excavation waste recycling comes Down Under
South Australia's litter and waste legislation

The missing link

DR MARC STAMMBACH OF HITACHI ZOSEN INOVA AUSTRALIA USES THE RECENT BASSLINK CABLE FAULT AS AN EXAMPLE OF HOW ENERGY FROM WASTE WOULD PROVIDE ENERGY SECURITY FOR AUSTRALIA, AS IT IS DOING IN EUROPE.

The recent failure of the Basslink cable, which provides electricity to Tasmania from Victoria, lasted six months and had expensive consequences.

The fault in the undersea cable forced Tasmania to produce electricity from diesel at a cost of \$1,163 per megawatt-hour. This is rather steep compared with the cost of generating electricity from rooftop solar, which is just over one tenth of that cost or even less for large-scale solar projects.

Energy from waste (EfW) is part of the long-term strategy of many European cities to provide base line power and district heating and cooling. A net electrical efficiency of 30 per cent is possible today, and can go up to 100 per cent for combined power generation and district heating with condensation of flue gas, as is done in Scandinavia. The high energy efficiency classifies them as recycling plants according to the European R1 criteria. Needless to say, composting and recycling thrive in Europe as well

EfW is a well-proven and safe solution with thousands of installations worldwide. It is integral to the circular economy to detoxify material streams and generate baseline power at the same time. EfW avoids greenhouse gas emissions from landfills and the carbon emissions from coal power stations. In addition, road aggregate and metals can be recycled. It also stabilises the electrical grid, as it has a high availability and 24/7 production, unlike solar or wind.



By converting solid waste with a typical calorific value of 10,000 megajoules per kilogram, we can produce 0.833 megawatt-hours electricity per tonne of solid waste.

Making waste pay its way

Considering the aforementioned price paid for electricity generated from diesel, we would have pocketed an electricity income of \$969 per tonne of solid waste. This reverses the typical EfW business model, where the gate fee would be around \$300 per tonne for an 85,000-tonne per year plant, as would be appropriate for Hobart. Or, instead of paying \$73 per tonne to dispose of general waste at McRobies Gully landfill (excluding GST) today, and leaving a dirty legacy to our children, you would have received cash back of \$669 per tonne of waste.

Isn't this magic? Instead of transporting waste from Sydney to Queensland, we could start shipping waste to Tasmania to get us the least-cost solution!

And, instead of continuing to leak greenhouse gases into the atmosphere, we would produce 50 per cent renewable energy. At that price we would even go carbon negative by capturing all the carbon dioxide from EfW and storing it in the Bass Strait. Fancy?

Just follow the EfW plant in Oslo, Norway, which will fill the empty gas and oil fields in the North Sea with carbon dioxide.

A two-way link

Energy security is important at all times. The Basslink cable is needed, but not for the import of dirty coal power, which will be phased out according to the Victorian Premier.

We need the Basslink cable to export and import renewable energy both ways as required from time to time. By the same token, we need a stable baseline power which EfW can provide, which would both wean us off dirty landfills and be a major step towards a circular economy. ■