



# FROM LANDFILL TO RESOURCE RECOVERY— TECHNOLOGY OFFERS SOLUTIONS

SAWT - key technologies that support state governments' commitments to reduce residual waste stream disposal to landfill

The Australian waste industry is on the verge of transforming itself by implementing new technologies and alternative treatments to recover materials from the residual waste stream.

Among the major players on the world market, SITA is Europe's largest waste management company and operates some 1,800 waste treatment and recovery sites including more than 100 organic waste composting facilities.

SITA incorporates a holistic approach to waste management through a combination of

resource recovery, mechanical and biological treatment facilities, together with materials recycling and long-term containment facilities.

Adopting this international approach, SITA Environmental Solutions has taken a new strategic direction in Australia with the introduction of SITA Advanced Waste Treatment technology (SAWT).



Leaders in Recycling and Waste Management



## WHAT IS SAWT?

The basic principles behind SAWT are resource recovery, reduction of waste to landfill, and the production of a range of compost and mulch products that meet Australian Standards for quality.

SAWT incorporates existing technologies already used by SITA both in Europe and at Biowise in Western Australia, a joint venture in partnership with the WA Water Corporation, and is modelled to meet the needs of the Australian market.

SAWT is a mechanical biological treatment consisting of:

- Receiving - acceptance of waste in an enclosed building and initial bulky items recovery
- Pre-processing - mechanical separation of organic and non-organic fractions together with resource recovery via manual sorting and magnets
- Composting - biological treatment of the organic fraction in ventilated static pile BioCells
- Refining - screening of composted products with various technologies to remove contaminants such as glass, plastics, etc.
- Maturation - final stage of biological treatment of refined compost products
- Landfilling - disposal of a non-organic residual fraction to landfill

Simple and effective, SAWT accepts waste from a variety of collection methods, provides end products from green waste, putrescibles and biosolids, while recovering valuable resources such as aluminium, steel, plastic, glass, timber, paper and cardboard.

SITA introduces proven, advanced waste treatment to Australia that is tried, tested and working internationally

## POLITICAL LEADERSHIP REQUIRED

While all state governments have waste minimisation policies and targets in place, including some with zero waste commitments, SITA believes they will not be met without the adoption of alternative waste treatment methodologies (AWT) and provision for additional collection services tailored to the needs of councils and treatment technologies.

In NSW, for example, if reliance is placed solely on current green waste collections and kerbside recycling it is unlikely that councils will meet the State's target of 66% diversion of waste to landfill by 2014.

The landfill diversion rate was at 26% when the strategy was introduced in 2003; it is now 39%, which still leaves 27% to be achieved. But all of the 'easy options' have already been adopted including the collection of paper & cardboard, green waste, glass, plastic, aluminium, etc., so there is now a need to look beyond these methods to achieve the remaining 27%.

Councillors need to give serious consideration to whether ratepayers will pay an additional annual premium to ensure residual waste is recovered, recycled and converted into new product. Thus diverting up to 70% of waste from landfill, helping reduce greenhouse emissions and protecting the Earth's resources of raw materials.

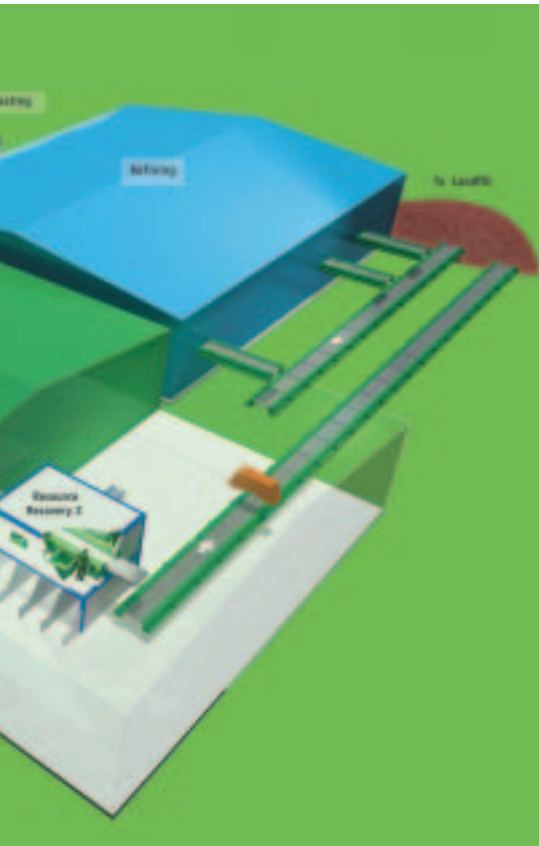
For example, some five million tonnes of green waste is collected annually in Australia



via kerbside collections, of which 60% is being sent to landfill. This represents not only a needless loss of valuable materials, but also missed opportunities for major new business investments in the recycling sector that would provide both employment and new products.

Municipal authorities are searching for solutions to their putrescible and green waste problems. Some have met with disappointment in the past when embracing technology that resulted in spectacular failure. More often than not, the technologies utilised were unproven for municipal waste treatment and unable to deliver promised outcomes.





# SAWT- A HOLISTIC SOLUTION FOR COUNCILS

As one of the leading companies in the Australian waste collection industry, SITA have entered the wider AWT market with the introduction of SAWT to provide municipal authorities with a holistic solution that includes a safe, flexible, effective and proven methodology of treating putrescibles and green waste.

One of the key components of this technology, the compost BioCell, is already implemented at the Biowise project in Western Australia, where green waste, biosolids and grease trap waste are composted into a high quality material, certified to Australian Standard AS4454, and sold to the market.

The front end module, where recyclables and the organic fraction are separated through a series of mechanical and manual sorting stations, uses a combination of well-known robust equipment already operating in hundreds of other facilities.

Importantly, SITA Environmental Solutions accesses on-going data, technology and experience available from the various waste treatment plants operated currently by SITA around the world.

Unlike those employed in some Australian AWT failures, SAWT technologies are proven and can be fine tuned to suit particular requirements.

Constructed on a modular basis, SAWT facilities can be increased in size progressively to meet the needs of councils or regions and would range in capacity from 20,000 to 150,000 tonnes. SAWT meets all EPA guidelines and has an extensive system

of environmental controls, including those for odour and noise abatement.

‘Diversion rates of up to 70% are achievable, dependent on regulations, waste characteristics and qualities, and markets for specific end products.’



SAWT provides councils with holistic solutions in that:

- They can meet their sustainability objectives
- They aren't locked into a collection system and can use any combination of bins
- Large tonnages are not required
- Various types of waste can be accepted from a variety of collection methods.
- Modular construction enables plants to grow with demand
- It is cost effective compared with landfills
- It utilises known, proven low risk technologies, and
- Markets exist for end products

SAWT is a key technology that supports state governments' commitments to reduce residual waste stream disposal to landfill.





# AN INTERVIEW WITH EMMANUEL VIVANT EXECUTIVE DIRECTOR POST COLLECTION

## Where does SITA see the market heading?

There is a growing international move to divert waste from landfill. While Australia is now beginning to go down that path, the full integration of AWT as part of the waste system requires real political will and leadership to make it happen here. This requires AWT to be incorporated in a comprehensive system with fully engineered landfills and tailored collection services.



## What technologies does SAWT use?

They are simple, robust and technically sophisticated. We use some at Biowise and others in a variety of waste treatment plants operated successfully by SITA around the world. The technology in place at any of our plants varies dependent on issues such as waste quantity and characteristics, the availability of source separated materials at kerbside, local environmental regulations and the markets for end products.

## What are the benefits of SAWT over other AWTs?

SAWT does not require large tonnages to be successful as it has variable upper and lower volume limits. The plants themselves are flexible in that they can commence as small scale facilities and both grow and adapt to meet changing waste streams, volumes and product ranges. SAWT plants can process green waste, biosolids and putrescibles using technologies that are simple, safe and more robust with less risk than some high-tech approaches. It uses a batch process for composting and, as such, can better control the quality of the composts generated.

## What diversion rates can be achieved?

Our experience shows that diversion from landfill can be as high as 70%. The rate depends primarily on issues such as waste characteristics, regulations and the ability to successfully market end products.

## Can you guarantee that SAWT will work?

Many will be aware that the technology used in the SWERF gasifier at Wollongong was not successful in processing municipal waste. The technology we use is neither new to us nor is it 'rocket science'. The various modules of SAWT are already in use by SITA in numerous countries around the world. SITA has deliberately chosen its resource recovery and composting system in order to reduce the risks to local government and waste generators.

## How does SAWT benefit councils?

Besides diverting waste from landfill, SAWT provides a holistic solution to councils' needs. The plants can process a variety of appropriate wastes, have the capability to accept waste from a range of collection methods and do not bind councils into a collection system for the lifetime of the facility.

## Are councils ready to make the transition to SAWT?

Many are, but they have no real commercial incentive to do so in the current market and under current legislation. However, environmentally aware councils are taking the initiative.

## Do you have markets for end products?

Yes, we have both existing markets and are developing others. Australia is one of the driest continents on Earth with some of the poorest soils. There is a real need to return organics to the ground, which can be achieved easily through the use of SAWT composts and soil conditioners. We look forward to governments taking an active role in developing and regulating the compost market to ensure minimum quality standards and market growth.

## Where will you build the first SAWT plant?

SITA is actively engaged in pursuing various EOI issued by councils and authorities. We anticipate a breakthrough will occur in the short term that will materialise into Australia's first SAWT.

## What does your crystal ball show you?

In the distance we see an enthusiastic and growing adoption of Alternative Waste Treatments as an integral component of the waste collection, processing and disposal system. This will only happen when governments really bite the bullet by completely reviewing the ways in which waste is collected and processed in Australia. We can see new practices introduced, accompanied by sustained educational programs that help householders, commerce and industry to understand the new systems. Yes, there will be additional costs involved, but doing nothing will cost even more.



For more information please contact Emmanuel Vivant, Executive Director  
Post Collection, SITA Environmental Solutions on (02) 8227 4111