Backgrounder

September 4, 2007

Biosolids drying facility

The new biosolids facility will be a fully enclosed drying process that will turn the Barwon region's wet biosolids into pellets.

These biosolids pellets will be used as a nutrient-rich farm fertiliser or fossil fuel replacement.

No taller than the existing water reclamation plant it will allow Barwon Water to treat the region's biosolids in a sustainable manner.

Key benefits:

It will allow us to build on the 40 per cent reduction in greenhouse gas emissions already achieved compared to lagoon-based drying. Fewer truck movements will further reduce greenhouse gas emissions by more than 300 tonnes per year.

Safer roads by reducing the number of truck movements by 1000 to and from Black Rock water reclamation plant each year (a reduction of nearly 60 per cent).

Increased employment: 30 full-time construction jobs, five full-time construction management and six full-time project management and design jobs.

What are biosolids?

When sewage is treated, micro-organisms digest the sewage, breaking down the organic material. Two products are created - **recycled water** and **biosolids.**

Each week, five and a half kilograms of biosolids are created treating **each** household's sewage.

That is enough biosolids to fill Skilled Stadium to a depth of one metre every year (54,000 tonnes).

Before drying, biosolids are 85 per cent water and look like mud.

What will the biosolids drying facility do?

The facility will dry the biosolids to 10 per cent water content and form it into round pellets.

How will the drying facility work?

Wet biosolids from the Black Rock water reclamation plant will travel by enclosed conveyor belt to the drying facility.

The drying process begins by mixing wet biosolids with dry biosolids pellets. This helps the wet biosolids form into new pellets. The mixed biosolids are then raked across heated plates, drying and forming into biosolids pellets. As the pellets reach the end of a plate, they fall to a plate below, where the process continues.

Water vapour produced in the dryer is condensed back to water in the condenser, which uses recycled water as the cooling medium. This water is returned to the Black Rock water reclamation plant.

When the pellets reach the bottom of the pelletiser, a conveyor belt is used to load them into a separation hopper. At this point, some of the pellets, particularly the smaller ones, are returned to the start of the process to be mixed with wet biosolids entering the facility.

The remaining biosolids are fed into a cooler, which uses air to cool the pellets.

Once cooled, the pellets move by an enclosed conveyor belt to a storage silo. From here, they are loaded into trucks and transported to the end-use location, such as broad-acre farms.

The fully-enclosed process will not produce any odours at the Black Rock boundary nor will there be any "smoke stacks" or visible emissions.

The plant will use natural gas.

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Is the technology used elsewhere?

There are biosolids drying facilites using Keppel Segher thermal drying technology in Antwerp, Brugge, Deurne Schijnpoort in Belgium, Dundee and Lossiemounth Scotland, Baltimore, Chicago, Atlanta and Kingston in the United States of America.

What will the drying facility look like? (artist's impression attached)

Feedback from community consultation was that the biosolids facility should be no taller than the existing Black Rock buildings. The drying facility will be fully enclosed in a building the same height as the Black Rock water reclamation plant. The height of the building is determined by the size of the vertical rack of plates used to form biosolids pellets.

Where will it be located

Barwon Water owns 250 hectares of land, including 110 hectares zoned public use, service and utility at the Black Rock water reclamation plant.

The biosolids drying facility will be built on this land alongside the existing plant and be connected by a 200-metre-long enclosed conveyor belt.

Locating it next to the water reclamation plant allows access to recycled water, saving four million litres of precious drinking water daily, that would otherwise be required to cool the facility.

Who is Plenary Environment?

Plenary Environment is a consortium led by Plenary Group, an Australian owned public infrastructure specialist and includes the water project management expertise of Earth Tech, and the construction and fabrication expertise of Applied Group. The consortium will utilise a thermal drying technology solution developed in Europe by Keppel Seghers.

Australian-owned, Plenary Group has a strong and successful portfolio of public infrastructure projects including Casey Hospital, Police and Courts facilities in six South Australian regional towns, the Victorian College of Pharmacy and currently has the Melbourne Convention Centre and a Defence Department housing project under construction.

Cost and key dates

The 20-year contract to design, build and operate the biosolids drying facility has a net present value of $76 million.

Following an EPA Works Approval Process and completion of design, construction is scheduled to begin in early 2008 and be completed by mid 2009.

What is *Partnerships Victoria*?

The *Partnerships Victoria* policy, introduced by the Victorian Government in 2000, provides the framework for provision of public infrastructure and related ancillary services through public-private partnerships.

Barwon Water used the *Partnerships Victoria* model to ensure value for money for residents and secure the expertise of the private sector.

The policy focuses on whole-of-life costing and full consideration of optimal risk allocation between the public and private sectors. There is a clear approach to value for money assessment and the public interest is protected by a formal public interest test.

Partnerships Victoria aims to use the innovative skills and abilities of the private sector in a way that is most likely to deliver value for money and improved services to the community.

Ends

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