

Fact Sheet 1 – The Macarthur Resource Recovery Park

- The Macarthur Resource Recovery Park will be built and operated by WSN Environmental Solutions on their existing Jacks Gully site.
- It will be the first large scale fully integrated municipal waste management site in Australia.
- The Park will process recyclables, organics and mixed solid waste from the Campbelltown, Camden, Wollondilly and Wingecarribee council areas.
- These four councils will be the foundation partners in the Park.
- All waste brought to the Park will be treated on-site, and only recovered products such as recyclables and compost will leave the site.
- The site will include a number of integrated facilities including:
 - the Ecolibrium™ Mixed Waste Facility designed to process up to 90,000 tonnes of household waste per year;
 - the Ecolibrium™ Organics Facility, a fully enclosed tunnel composting system to process 30,000 tonnes of garden organics each year. Mulch and compost produced will be sold on-site through WSN's "Garden to Garden" brand;
 - a Materials Recycling Facility (MRF) for sorting up to 30,000 tonnes of recyclables per year;
 - a Resident "Drop-off Centre" for community members to dispose of small quantities of putrescible and green waste, recyclables and domestic hazardous materials;
 - a Community Visitor and Education Centre;
 - a "Revolve Centre" for the sale of recovered items;
 - a "Clean Up Waste" recovery facility for sorting items collected from councils' kerbside clean up service; and
 - a landfill for non-putrescible waste.
- The Park's design is based on WSN Environmental Solutions' Ecolibrium™ philosophy of balancing environmental and economic needs and local factors with world-class technologies to create a tailored solution that meets the requirements of the local community.
- The Macarthur Resource Recovery Park will be built at a cost of around \$50 million.
- Construction is expected to commence in mid-2006 and the site should be fully operational by the end of 2008.
- The contract between WSN Environmental Solutions and the four councils is valued at around \$150 million over 15 years.
- The development will also be good for the local economy, providing between 30 and 50 jobs during the construction phase, and 40 full-time jobs when operational.

Fact Sheet 2 - The Ecolibrium™ Mixed Waste Facility

- The centrepiece of the Macarthur Resource Recovery Park is the Ecolibrium™ Mixed Waste Facility, using world leading Arrowbio technology from the Arrow Ecology Group in Israel.
- Arrowbio is a proven technology that has been operating in a full-scale commercial plant in Israel for over two years and has recently been short listed by the City of New York.
- The Ecolibrium™ Mixed Waste Facility that will be constructed at the Macarthur Resource Recovery Park is designed to process up to 90,000 tonnes of household waste each year and divert around 70% from landfill.
- At full capacity the Facility will recover enough green energy to power around 2,500 homes, 19,000 tonnes of recyclables, 10,000 tonnes of fertiliser, and 11,700 kilolitres of treated water.
- The process begins with a receival and pre-processing unit where large or hazardous items are removed.
- The second stage uses water to float light items such as plastics away from heavy items such as metals.
- The organic component of the waste stream is then treated with natural biological processes to produce a high-quality fertiliser and generate bio-gas that is used to produce enough green electricity to power around 2,500 homes.
- The Facility, which is fully enclosed, is designed to minimise odour emissions. Any exhaust air will be passed through a biofilter to further reduce odours.
- The use of a water-based process reduces the production of volatile organic compounds that are the main causes of odour.
- The Arrowbio process is designed to capture up to 100% of the biogas that is produced as waste breaks down.
- By keeping the waste out of landfill and using it to generate green energy, the plant will offset greenhouse gas emissions equivalent to taking 22,500 cars off the road each year.
- The Facility will be completely self-sufficient in water, capturing the moisture in the waste to supply the water requirements of the process, and exporting excess water to be used for on-site irrigation purposes.
- The Ecolibrium™ Mixed Waste Facility has a footprint of less than two hectares, so its environmental impact is kept to a minimum.
- The development will also be good for the local economy, providing between 30 and 50 jobs during the construction phase, and 40 full-time jobs when the Ecolibrium™ Mixed Waste Facility and Ecolibrium™ Organics Facility are operational.

Fact Sheet 3 - Why did WSN put forward Arrowbio technology for this site instead of UR-3R?

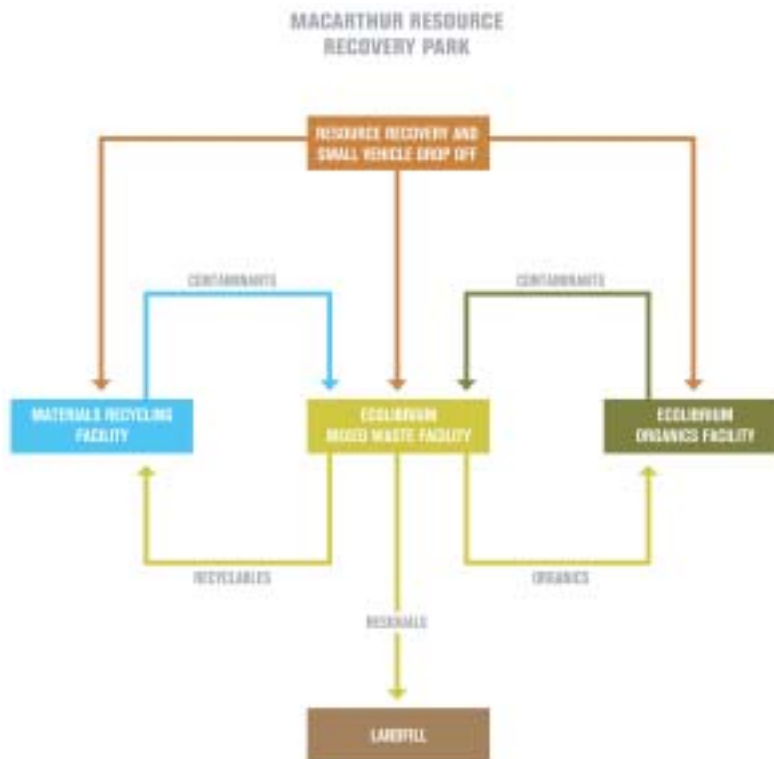
- WSN Environmental Solutions believes there is no “one size fits all” technology solution.
- WSN’s Ecolibrium™ philosophy balances environmental and economic needs and local factors with world-class technologies to create a tailored solution that meets the requirements of the local community.
- These solutions can range from traditional source separation to sophisticated technologies that can extract resources from waste that is usually sent to landfill.
- The technology used in a given situation depends on factors such as the volume of waste, type and composition of waste, location, size of the site, cost and specific requirements for resource recovery.
- Arrowbio is more suited to the composition of waste streams of the local councils in the Macarthur Region.
- Macarthur Resource Recovery Park will have a separate tunnel composting system to efficiently manage source separated garden organics.
- Arrowbio technology produces at least twice the amount green electricity per tonne compared to UR-3R, which is focused more on the compost output due to the fact that garden organics are a large part of the mixed waste stream at that facility.
- Arrowbio has a smaller footprint and is more suited to a smaller volume of waste.
- Arrowbio is a proven, low-risk technology that has been operating in a full-scale commercial plant in Israel for over two years. It is based on the technology used in sewage treatment plants.
- Like UR-3R, the Arrowbio facility is self-sustaining in energy and water.
- Both technologies are based on mechanical biological treatment of waste.
- Global Renewables were short listed for the Macarthur tender in their own right but chose not to bid.

Fact Sheet 4 – The Ecolibrium™ Organics Facility

- The Ecolibrium™ Organics Facility is a fully enclosed, environmentally controlled tunnel composting system using a proven technology.
- The Facility will be very similar to the highly successful Port Macquarie composting facility that is used by Hastings Council.
- Tunnel composting is a simple technology that uses natural decomposition processes in an enclosed, controlled environment.
- The decomposition process takes place inside concrete tunnels and takes as little as 21 days to produce high quality compost material.
- The Facility is designed to process 30,000 tonnes of organics each year. It is anticipated that this will produce around 18,300 tonnes of high-grade compost and mulch that comply with Australian Standards.
- The plant can be expanded very simply by adding extra tunnels.
- The Ecolibrium™ Organics Facility will process garden organics blended with the fertiliser produced from the Ecolibrium™ Mixed Waste Facility and nutrient rich bio-solids from Sydney Water,
- The Facility is designed to minimise the impact of odour on the surrounding community by ensuring that odour-generating activities are contained within concrete tunnels.
- Exhaust air from the tunnels will be passed through a biofilter to remove odours.
- A strict contamination management program will ensure that unwanted items are kept out of the compost and that the final product will be of a high quality and free of pathogens.
- Any contamination received at the Ecolibrium™ Organics Facility (except hazardous and construction materials) will be transferred to the Ecolibrium™ Mixed Waste Facility to undergo further processing and extract more beneficial products.
- There will be no increase in vehicle movements to the site.

Fact Sheet 5 – Integration: How all the facilities come together

- The Macarthur Resource Recovery Park has been designed as a fully integrated resource management system.
- Waste received at the Park will undergo one or more stages of resource recovery. It is only when no further value can be extracted from the waste that the residual material will be landfilled.
- The only materials that leave the Macarthur Resource Recovery Park will be beneficial products such as recyclables and compost, and small amounts of household hazardous waste for further processing or disposal.
- The design of the site maximises the recovery of resources. Materials can easily be transferred between facilities, keeping costs at a minimum while still extracting the highest possible resource value from the waste.



- Mixed waste will be delivered to the Ecolibrium™ Mixed Waste Facility. Recyclables extracted from this waste will be transferred to the Materials Recycling Facility (MRF) on-site for baling. Garden organics recovered from the mixed waste will be transferred to the Ecolibrium™ Organics Facility for further processing.
- Source separated recyclables will be delivered to the MRF for sorting into paper, plastics, aluminium, steel and glass. Any contaminated materials from the MRF will be transferred to the Ecolibrium™ Mixed Waste facility for further processing and extracting of recyclables.

- Similarly, any contaminated material from the Ecolibrium™ Organics Facility will be transferred to the Ecolibrium™ Mixed Waste Facility for additional treatment.
- The design of the site simplifies the management of councils' different waste streams. All the waste streams are delivered to the one site and processed on the one site.
- This single, local site aligns with the principles of Ecologically Sustainable Development. It allows for waste generated within the Macarthur Region to be treated and recovered within the Macarthur Region.
- Management of waste locally avoids the need to transport waste over long distances to other regions.

Fact Sheet 6 – A community connection

- The Macarthur Resource Recovery Park is designed to provide a “closed-loop” approach to resource use by returning as many products as possible to the community and the local councils.
- A dedicated on-site retail area will be available for residents and commercial customers to purchase compost, mulch, aggregates and landscaping materials produced from waste brought to the site.
- Reusable materials, such as furniture, salvaged from the “Clean Up Waste” recovery facility will be available for sale at a “Revolve Centre”.
- A Resident drop-off centre will provide a convenient location for householders and small businesses to dispose of:
 - small quantities of putrescible and green waste;
 - recyclable materials; and
 - domestic hazardous materials such as limited quantities of paint, household chemicals, vehicle batteries, sump oil and gas cylinders.
- A Community Visitor and Education Centre will provide a venue for community education, eco-garden, recycled art and other sustainable community-based initiatives.
- The Macarthur Resource Recovery Park is designed to minimise odour impacts on the local community by ensuring that mixed waste and organics brought to the site are dealt with in an enclosed process.
- An extensive community consultation program will be conducted in coming months as part of the Environmental Assessment process to ensure that any community concerns can be addressed.