Invest in Regional NSW
Start here. Go further.

Waste Investment Opportunities in Regional NSW
The NSW Government understands the need for an advanced and effective waste management system which maximises resource recovery and service delivery, while delivering economic and environmental benefits.

To achieve this, the NSW Government has announced it is preparing a **20-Year Waste Strategy for NSW**. The strategy sets a 20-year vision for reducing waste, driving sustainable recycling markets and improving the state’s waste infrastructure network.

Businesses and industry can be confident that the NSW Government is committed to supporting appropriate investment in the waste and resource recovery sector.

Waste is both a resource and an investment opportunity. As NSW looks to manage its waste onshore, and with continued population growth anticipated in NSW, there are new opportunities for investors looking to manage and recover this waste.

Regional NSW has a range of characteristics that make it a great place to invest in this industry sector. It is home to a highly skilled labour force, has streamlined access to large markets, provides lower business costs, and is supported by significant government investment in infrastructure and regional communities.

Investment is not limited to large-scale waste facilities. From local to state-wide projects, there are opportunities for a range of waste and resource recovery technologies to be explored and supported in regional NSW.

To support this investment, the NSW Government has the largest waste and recycling funding program in Australia, investing $802 million over nine years, to 2021. This program provides funding for investment in infrastructure, services and education in the waste and recycling sector.

The NSW Government is committed to enabling industry development and growth by supporting industry to overcome investment barriers. This includes a dedicated regional investment concierge service – for expert, tailored support, grants and relocation assistance.

NSW seeks to encourage investment from new market entrants, existing waste and resource recovery operators, councils, waste generators and the financial sector. There’s never been a better time for new and innovative waste infrastructure investment opportunities to be realised in regional NSW.
WHY INVEST IN REGIONAL NSW?

Regional NSW is Australia's largest regional economy with a wealth of investment, business and lifestyle opportunities.

Regional NSW is rich in resources, talented labour and successful businesses, with lower costs than major cities. Diverse investment opportunities exist across established and emerging sectors including:

- advanced manufacturing
- agribusiness and food
- construction and infrastructure
- defence and aerospace
- education
- forestry
- freight, logistics and distribution
- health and aged care
- mining and resources
- professional and financial services
- renewable energy
- tourism
- waste and circular economy

STRENGTHS AND OPPORTUNITIES IN REGIONAL NSW

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Opportunities</th>
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<tbody>
<tr>
<td>• Strong digital technology capabilities.</td>
<td>• Access to world-class research and innovation centres, specialising in agricultural technology,</td>
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<td>• Highly skilled workforce trained in global best practices.</td>
<td>defence and advanced manufacturing.</td>
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<td>• Willingness to invest in R&amp;D (highest expenditure on R&amp;D of all states</td>
<td>• Access to skilled labour. 50 per cent of the regional workforce holds tertiary qualifications.</td>
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<td>and territories).</td>
<td>• Access to a large market. Regional NSW is home to 3 million people, 40 per cent of the total NS</td>
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<td>• Base for financial institutions, financial services sector and availability of capital.</td>
<td>W population.</td>
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<tr>
<td>• Regional NSW is the most diverse regional economy in Australia, generating a third of the NS economy and one fifth of its GSP.</td>
<td>• Lower business costs. Regional NSW costs significantly less than major metropolitan locations to do business.</td>
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<td>• Significant construction and infrastructure investment across the state.</td>
<td>• Huge regional investment. NSW is benefiting from a once-in-a-generation public investment in its infrastructure and communities to boost regional growth, and support businesses and investors.</td>
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<tr>
<td>• High number of value-adding activities.</td>
<td>• Diverse economic powerhouse. Traditional industry strengths have been developed using innovation and technology to add value and increase productivity.</td>
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<tr>
<td>• Home to many strategic industries.</td>
<td>• Connectivity to Sydney and its dynamic economy and sector strengths.</td>
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<tr>
<td>• Highly ranked universities and world-class education institutions.</td>
<td></td>
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<td>• 5.3 per cent employment growth.</td>
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REGIONAL NSW HAS MANY OPPORTUNITIES FOR WASTE INDUSTRY INVESTMENT

Regional NSW has the infrastructure, enabling industries and Government support to turbocharge investment into waste management and resource recovery, including:

**Agribusiness and forestry**

Regional NSW will continue to be a significant producer of agricultural commodities. The by-products of these could be appropriate for use in materials recovery facilities, large-scale composting operations or to generate energy from waste.

**Freight and logistics**

Freight, logistics and distribution services drive the efficiency and attractiveness of regional NSW. Planned freight projects throughout regional NSW will drive the development of distribution centres in metropolitan satellites, allowing for waste to be brought in for recovery and value added products to be transported back. This includes the Inland Rail project, which is expected to be completed in 2025, a 1,700km rail route that will link Melbourne and Brisbane via regional New South Wales, Victoria and Queensland.

**Manufacturing**

Manufacturing is driving economic growth in Regional NSW. Leading manufacturers are attracted to regional areas by skilled workforces, low-cost environments, and access to markets and leading research centres. These present attractive end market buyers for recovered materials.

**Special Activation Precincts**

Special Activation Precincts (SAPs) are dedicated areas in regional NSW designed to create jobs, attract businesses and investors, and fuel economic development to ensure regions are well placed to grow and prosper.
## OPPORTUNITIES FOR INVESTMENT AT ALL SCALES

There are opportunities for industry investment in local, regional and large scale waste management solutions in regional NSW.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Opportunity</th>
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</table>
| Local | Often waste is collected, sorted, treated and landfilled locally. Waste management services are usually owned, operated or contracted and controlled locally. There are opportunities for industry to invest in technologies locally or with groups of Councils to manage specific waste types or streams (e.g., glass crushing). There are opportunities for Local Government to zone land to allow for start-up recycling innovators. There may also be local opportunities for recovering energy from waste:  
  - smaller-scale, on-site electricity generation  
  - waste water onsite power generation  
  - methane off-take from landfill. |
| Regional | Larger waste management facilities can be operated regionally and service numerous local government areas. There are opportunities to provide waste treatment services to a group of councils for specific products (e.g., Mattress recycling in Wagga Wagga). There are opportunities for councils to pool resources and waste streams regionally to build economies of scale and attract private sector investment (e.g., Richmond Valley - see case study below). |
| Large | There are key opportunities near large populations or borders, where economies of scale and location near transport networks mean that a facility can accept and process waste and resources from across the state (e.g., Special Activation Precincts (SAPs) can house large facilities and process large amounts of waste from a large catchment). There are opportunities to process specific waste products or streams, where the catchment may be state-wide (e.g., Enirgi processing batteries in Wagga Wagga), or working with other states. There are also opportunities for multi-purpose resource recovery hubs. These can combine:  
  - material recovery facilities or MRFs to sort recyclables to maximise recovery  
  - advanced processing and remanufacturing facilities of recyclables  
  - energy recovery of residual waste as part of an integrated waste management strategy to deliver positive outcomes for the community and environment. |
ECONOMIC VALUE AND SECTOR OVERVIEW

Regional NSW is Australia’s largest and most diverse regional economy, home to over one-third of the state’s population, it produces one-fifth of the gross state product (GSP). Our economic vision for regional NSW is to grow the current population by 1 million people and add a further 260,000 jobs by 2038.

As NSW continues to grow, it is expected that significant waste volumes will continue to be generated. Sustainable waste management and resource recovery is becoming a growth sector in NSW.

NSW waste sector is worth $1.5 billion

The NSW waste management sector is valued at around $1.5 billion and employs more than 10,000 people. Most of the value-add and employment relates to waste collection. The sector encompasses waste transport from generators, sorting waste and landfilling waste.

NSW continues to generate recoverable waste

NSW is generating a range of waste streams. Waste is full of valuable materials including paper, plastics, glass, metals, organics, concrete, plasterboard and electronics. Many of these waste materials can be recycled, and have value for reprocessing, reuse or as raw materials.

Waste sources in NSW are considered in three streams: municipal solid waste (MSW) from households and council operations; commercial and industrial (C&I) waste; and construction and demolition (C&D) waste.

The proportion of waste materials that make up each waste stream will vary, as will the resource recovery potential of each waste stream.

Investors will need a clear understanding of the feedstock availability from various waste streams in order to inform technology and investment choices.


<table>
<thead>
<tr>
<th>Period</th>
<th>MSW</th>
<th>C&amp;I</th>
<th>C&amp;D</th>
<th>Total</th>
<th>Total per person</th>
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<tbody>
<tr>
<td>2015-16</td>
<td>4,375,000</td>
<td>4,139,000</td>
<td>10,164,000</td>
<td>18,678,000</td>
<td>2.42</td>
</tr>
<tr>
<td>2016-17</td>
<td>4,362,000</td>
<td>4,442,000</td>
<td>10,608,000</td>
<td>19,412,000</td>
<td>2.48</td>
</tr>
<tr>
<td>2017-18</td>
<td>4,248,000</td>
<td>4,406,000</td>
<td>12,768,000</td>
<td>21,422,000</td>
<td>2.69</td>
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$15.5 billion

The total value of Australia’s waste related activities in 2014-15

$12.6 billion

Waste management services

$2.9 billion

from selling recovered materials

50,000

full time equivalent workers

employed in Waste-related activities in Australia in 2014-15

Source: National Waste Report 2018

For every 2.8 jobs in landfill there are 9.2 in recycling (per 10,000 tonnes of waste, (Access Economics, 2009).

- In 2017-18, 65% of our waste was recovered (including exports), with the residual 35% disposed at landfill sites.
- In 2017-18, NSW recycling rates were 42% for MSW, 53% for C&I and 77% for C&D.
- In 2017-18, waste generation in NSW was 2.69 tonnes of waste per person, an increase of 11 per cent from 2015-16. This jump was primarily due to a rise in construction and demolition (C&D) waste from a booming building industry in NSW.
WASTE IS A VALUABLE RESOURCE

Innovations in waste and resource recovery processes are emerging both nationally and internationally. Introducing new or alternative technologies can improve sorting, reduce contamination of recyclable material and enhance the economic value of waste streams. Valuing waste as a resource creates commercial opportunities, including higher value products, energy and jobs.

Most preferable

<table>
<thead>
<tr>
<th>Avoid and reduce waste</th>
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<tr>
<td>Reuse waste</td>
</tr>
<tr>
<td>Recycle waste</td>
</tr>
<tr>
<td>Recover energy</td>
</tr>
<tr>
<td>Treat waste</td>
</tr>
<tr>
<td>Dispose of waste</td>
</tr>
</tbody>
</table>

Least preferable

A circular economy values resources by keeping products and materials in use for as long as possible. The NSW Government’s move towards a circular economy presents greater opportunities for resource recovery. Additional benefits include:

- more jobs directly and indirectly from recycling and using waste as a resource
- innovation and business creation in regional NSW
- reduced impact on the environment.

Nations around the world are exploring and implementing circular economy principles as a way of better valuing waste materials as a resource and encouraging alternative approaches to managing waste materials. This creates new and innovative business ideas and investment opportunities in the waste and resource recovery sector.

In February 2019, the NSW Government released the NSW Circular Economy Policy Statement “Too Good To Waste” which outlines the principles and ideas that can help to shape the NSW approach to resource use and waste management.

Additionally, the NSW Government is developing a 20-Year Waste Strategy for NSW. The strategy will set a 20-year vision for reducing waste, driving sustainable recycling markets and improving the state’s waste infrastructure network.
SEPARATED WASTE STREAMS ARE INVESTMENT OPPORTUNITIES

Waste is full of valuable materials, and much of this waste can be recycled or reprocessed into new commercial products. The following outlines investment opportunities in NSW by waste material stream.

**Plastics**

- **In 2017-18, 81,000 tonnes of plastic waste was recycled in NSW.**
- **Over 2 billion containers** have been returned since commencement of the Container Deposit Scheme (CDS) ‘Return and Earn’ scheme on 1 December 2017. The numbers of eligible drink containers collected and recycled **increased by 69 percent.**
- Plastic recycling rates are typically low, with an **estimated 7% of the plastic** we consume every year being recycled. The recovery rate differs significantly across the many types of plastics as there are a variety of end-markets. All of which are subject to different market forces according to demand.
- **Opportunities for market investment in plastics** include:
  - infrastructure to collect, sort and reprocess ridged and flexible plastics
  - developing processes and facilities that collect and consolidate film plastics more effectively
  - polystyrene reprocessing facilities to recycle post-consumer polystyrene foam
  - research and development to help identify commercially viable reprocessing options where contamination and the size of plastic pieces make sorting difficult (including from residual waste streams)
  - high volume reprocessing pre-consumer manufacturing scrap generated by the industrial sector to create high quality clean resources

**Glass**

- **In 2017-18, 219,000 tonnes of glass waste was recycled in NSW.**
- The recycled glass industry is well established, however fluctuations in price can result in stockpiles which are created when prices are low. This may present alternate use opportunities.
- **Investment opportunities for glass include**:
  - colour sorting technologies that can sort to smaller sizes and reduce the generation of fines
  - alternative glass-only collection systems to improve recovery of glass cullet and reduce contamination
  - generating recycled-glass product for use in structural engineering applications by the construction industry
  - expanding local markets for crushed glass, particularly in regional NSW where transport costs decrease the viability of recovery:
    - glass ‘fines’ can be used as a replacement for sand in structural engineering applications by the fast-growing construction industry

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7 NSW EPA Analysis
8 This excludes any glass waste recycled in the construction and demolition waste stream.
- lower grade glass sand can be used in road and pavement construction, with higher grade product used for a larger number of concreting applications

\( \text{o bottle to bottle recycling} \)

**Timber**

- Investment opportunities include:
  - establishing re-use markets for high quality recycled timber
  - the recovery and processing of untreated and uncontaminated timber into:
    - briquettes or pellets for domestic and outdoor heating
    - pellets or a dry woodchip for use in industrial heating systems
    - fuel for energy from waste processes
    - animal bedding
  - collection systems and sorting infrastructure to identify and isolate treated and contaminated timbers to improve the quality of feedstock for recovered timber products

**Paper and cardboard**

- In 2017-18, 1,100,000 tonnes of paper and cardboard waste was recycled in NSW.\(^9\)

  There are opportunities for increasing onshore processing.

- Investment opportunities include:
  - sorting capacity of infrastructure at mixed recycling facilities (MRFs) to improve separation from commingled recyclable streams
  - building the capacity of MRFs to separate paper and cardboard from C&I sector streams
  - building local capacity for communities to manage and recycle their own paper and cardboard locally
  - the use of mixed paper/cardboard to produce recycled alternatives to tissue, fibre and paperboard, which can be used for moulded paper pulp products or in construction material applications such as chipboard and insulation

**Organics**

- In 2017-18, 1,631,000 tonnes of organic waste was recycled in NSW.\(^12\)

- Food and garden waste remains the largest proportion of waste going to landfill from both homes and business in NSW, despite its potential for value-added applications.

- Investment opportunities continue to emerge in this space as more councils are providing combined food and garden waste collection services (9 councils in 2010-11, to 32 in 2016-17)

- Investment opportunities include:
  - commercial food waste collections, de-packaging and contamination removal
  - in-vessel, covered and forced air composting to produce high grade compost and mulch
  - small and medium scale anaerobic digesters, including on-site solutions for industrial precincts
  - continuing expansion of organics collections services for homes and business
  - continuing enhancement of household organics collections services from garden only to combined food and garden organics
  - ongoing investment in processing infrastructure at all scales
  - introducing technologies to improve product quality
  - developing markets for the recycled products

**Concrete, brick and tiles**

- In 2017-18, 8,018,000 tonnes of masonry waste from the construction and demolition industry was recycled in NSW.\(^13\)

- With NSW’s construction boom likely to continue for the foreseeable future it is expected that there will be continued growth in the supply for this waste stream.

**Sand, soil and rubble**

- It is estimated that 85% of sand, soil and rubble materials are recovered.

- As the construction boom continues it is expected that additional investment in infrastructure may be required to keep up with demand and supply.

**Metals**

- In 2017-18, 1,718,000 tonnes of metal was recycled in NSW.\(^14\)

- As the population grows, further investment will be required to maintain this level of resource recovery.
LOCAL OPPORTUNITIES

There are a range of different scales for waste investment in regional NSW.

At the local scale, councils play an important role in providing household waste collection and recycling services, managing and operating landfill sites, delivering education and awareness programs, and providing and maintaining litter infrastructure.

Because of this, smaller businesses, including innovation pilots, may benefit from working with individual councils at a local scale to manage bespoke wastes challenges.

Solutions for waste management and resource recovery will need to respond to the specific issues faced by regional communities and local governments.
KEY LOCAL OPPORTUNITIES

Industry working with waste service collectors (including councils) to ensure the quality of feedstock, timing of collection and sorting specifications.

OVERVIEW

Augmenting existing waste facilities with additional technologies can provide products that can have commercial value. Some examples of technologies include:

- glass crushing infrastructure - glass cullet can be used in roads base
- additional sorting - some plastics can be used as additives in road surfaces
- facilities to store resources, such as metals or mattresses for collection.

There are examples of local, small-scale innovative waste and resource recovery solutions operating across regional NSW. Industry has an opportunity to implement new technologies at the local-scale, introduce tested small-scale technologies into other council areas, or up-scale small-scale technologies to provide regional waste and resource recovery solutions.

Better commercial frameworks

The new commercial framework for local government procurement of recycling services provides opportunities to industry. It will drive improved outcomes, advance the economic value in waste investment, and meet the expectations of the community, investors, councils, and the state.

The framework will allocate commercial risk to those best placed to manage it, and enhance contract transparency (i.e. recycling outcomes and commodity values). It will encourage innovation and technological advancement in the sector, and incentivise resource recovery over landfilling. This will improve the quality of recycled commodities and identify local end markets for recycled products.
CASE STUDY – LISMORE CITY COUNCIL GLASS CRUSHING

Lismore City Council purchased and is operating a glass crushing machine at their Material Recovery Facility. The machine processes approximately 6,000 tonnes of discarded glass every year. The crushed glass sand (called cullet) is sent to a quarry where it is mixed with other materials and turned into road base and other recycled products. The product has been used in a number of projects in the Lismore City Council area as well as on trial sites on the Lismore to Ballina Pacific Highway upgrade.

Successful trials have now led to Transport for NSW developing specifications to allow more widespread use of discarded glass showing the possibilities to develop your technology and processes in regional NSW.

The economic benefits of transforming glass back into sand include reducing the costs of landfilling, road resealing and savings from reduced energy and water use.

CASE STUDY – LAKE MACQUARIE COUNCILS INNOVATIVE LOCAL SOLUTIONS

For the past year, the local government has been adopting a composting system and, more recently, using recycled glass sand in civil works projects.

The projects have reduced the amount of waste going to landfill, enabling the council to divert almost 50 per cent of the waste it collects for beneficial reuse.

The Awaba composting system sees the council collect all household food and garden waste in green bins for weekly kerbside collection. The state-of-the-art plant can convert up to 44,000 tonnes of organic waste into compost each year. The project saw an estimated 1,000 tonnes of food and garden waste diverted from landfill over the first two weeks of the service, including a 14 per cent increase in green bin use.

The recycled glass sand trial won the 2018 Sustainable Procurement Achievement category at the 2018 Local Government Procurement Awards and Awaba composting facility was a finalist in the best facility over $10 million category in the Waste and Resources Recovery Awards.
REGIONAL OPPORTUNITIES

There are a number of hubs that have the population to support resource recovery at a regional scale. Purchasing at scale has the potential to:

- improve the economics of waste and resource recovery services
- attract new investment opportunities, and
- provide increased bargaining power.

Key regional opportunities

Industry working with new or existing groups of councils to establish waste catchment area to guarantee feedstock for waste specific technology.

Regional council collaboration can allow for innovative new technologies to manage waste, and other efficiencies

A key challenge to investment in the waste and resource recovery sector in regional NSW is transport distances and logistics.

There are examples of regional councils across NSW working together at a regional scale to better manage their waste and resource recovery challenges. There are opportunities for industry to work with these groups to access regional feedstock, and to invest in viable regional scale solutions to waste challenges.

In communities near the border with other states, there may be logistical benefits to cross-border waste and resource recovery solutions.

CASE STUDY – TUNCURRY RESOURCE RECOVERY PARK

Through partnerships between private companies, local councils and community organisations, the former Tuncurry landfill has been transformed into an integrated community hub.

This project involved the construction of a waste transfer station at Tuncurry which enables incoming waste to be separated and sorted to maximise recovery, including scrap metals, household recyclables, appliances and second hand building materials, tyres and landscape supplies. Now 89% of household waste is recycled, reducing amounts sent to landfill.

The new facility has a built recycling capacity of 7,000 tonnes per annum.

The existing “Tip Shop” was expanded to increase reuse and sale of reusable items.

The site also functions as a community hub, with local stores, community gardens, eateries and Men’s Sheds co-located near the recycling facility.
CASE STUDY: MIDWASTE REGIONAL WASTE GROUP, NSW

To manage the amount of hazardous waste, scrap metal and green waste being put into landfill, six councils in the mid-north region established the Midwaste Regional Waste Group. Member councils include Bellingen, Coffs Harbour, Kempsey, Mid Coast, Nambucca, and Port Macquarie-Hastings.

Members developed a joint tendering process to increase interest from the market when tendering for waste services including the collection of hazardous wastes, green wastes, wood wastes and scrap metal. The ability for industry to collaborate with a regional cluster of Councils creates economies of scale and leverages existing logistics and waste management assets to access higher quality inputs.

CASE STUDY: DUBBO ORGANICS PROCESSING FACILITY

With $3.5 million funding support from the Waste Less Recycle More Organics Infrastructure Fund, the new Dubbo Organics Processing facility is transforming the way the region manages its food and garden waste.

The project was supported with matched funding from Dubbo Regional Council and built and operated in partnership with waste management firm JR Richards.

The facility diverted 8,000 tonnes of organics waste from landfill in its first year of operation, an average of 6.6kg per household per week. The food and garden waste is collected from residents in the Dubbo Regional Council area as well as the surrounding local government areas of Narromine and Mid-Western, a distance of around 250km west to east showing the capability in efficient regional waste management logistics.

The state of the art, computer-monitored in tunnel processing technology converts the recovered organics into a quality compost which can be returned to the region’s agricultural lands to improve soil health, boost water retention and increase crop yields.
MANY LOCATIONS IN REGIONAL NSW HAVE THE CHARACTERISTICS TO SUPPORT REGIONAL SCALE WASTE MANAGEMENT AND RESOURCE RECOVERY FACILITIES

There are a range of enablers that make certain regional location in NSW ideal for investment in waste and resource recovery technologies, including:

- access to adequate feedstock from surrounding areas or from major metropolitan centres
- access to enabling infrastructure, including electricity, water, sewerage and gas
- access to major road, rail or sea freight transport hubs, including intermodal transport routes
- synergies with existing businesses that could support or use the output from the facility
- availability of appropriately zoned land
- alignment with the 20-Year Economic Vision for Regional NSW:
  - this includes consideration of the Functional Economic Regions (identified in the Regional Economic Development Strategies (REDS)) which identify growth enablers and the natural endowments of each economic region that enable endowment-based industries to grow and flourish
  - these industries produce waste and colocation may provide opportunities for investment in specialised waste and resource recovery services.
CASE STUDY: ALBURY PLASTIC FORESTS

Plastic Forests is a leading Australian plastic film recycling company with the technology, infrastructure and expertise to recycle lightly contaminated soft plastics (such as plastic bags and packaging) from consumers, industry and agriculture.

Plastic Forests’ proprietary technology transforms this soft plastic ‘waste’ into commercially acceptable resin & a range of value-added products.

Plastic Forests has established a 5 acre industrial facility in Albury to dry clean and reprocess these contaminated soft plastics into a range of value-added products, sold locally and into overseas markets.

Plastic Forests has feedstock clients across food and beverage, agriculture, technology, construction and landscaping industries, local government and not for profits. This has helped some of these companies achieve their ‘zero waste to landfill’ environmental goals for the first time globally. They also obtain soft plastics from waste contractors impacted by National Sword, further enhancing the high level of feedstock security. Albury spans the Hume Freeway, the main Melbourne-Sydney rail corridor (incorporating an intermodal hub) and is ideally placed for business looking for quality transport infrastructure to service the waste and recycling sector between Australia’s two major capital cities.

The Project has benefits for the Albury community including:

- employment of local businesses on an ongoing basis e.g. electrical, packaging, transport and technical support
- economic benefits to the local community, by enabling farmers, local councils and Landcare Australia to recycle their plastic films locally
- environmental benefits such as a reduction of soft plastics to landfill e.g. reprocessing plastic manure/compost bags into a 100% recycled content products.
CASE STUDY: NORTH COAST REGION WASTE INVESTMENT REPORT

Private investor interest in waste and resource recovery is emerging in the North Coast region of NSW. In order to weigh up options, and make informed investment decisions, councils and investors need to understand the potential at a regional scale of infrastructure, transport links and feedstock.

To address these recent developments, Richmond Valley Council is working with 13 local government areas to investigate regional waste investment options and provide a regional collaboration model from which new opportunities and markets can be identified.

The North Coast Region Waste Investment Report will bring together data, and undertake an infrastructure and service delivery stocktake, to identify waste management options for the region.

This is a win-win for councils and industry, providing councils with a viable way to manage their waste challenges, while providing investors with the data and potential waste volumes needed to inform investment decisions and bring new technologies to the Australian market.
STATE-WIDE OPPORTUNITIES IN THE REGIONS

There are opportunities in regional NSW to invest in large scale waste management facilities, including through processing large amounts of waste within a catchment area, or through specialising in a specific waste technology.

Key state-wide opportunities

• Large waste and resource recovery facilities.
• Large scale technology to manage a specific waste stream or waste type.
• Technology providing specialist waste processing or treatment at a State-wide or national scale.

Social Licence

Regional NSW provides many unique opportunities for investors to operate a waste and resource recovery facility. Where land is zoned appropriately, you could operate a facility near regional centres and transport routes, or at a distance from the regional centre that could make it socially acceptable for large waste and resource recovery facilities to operate. To achieve the social licence to operate in regional NSW it will be necessary to undertake public consultation throughout the project and have a commitment to being a ‘good neighbour’.

Regional NSW can support large scale waste management facilities

Regional NSW is a prime location for large-scale waste management investment with access to large volumes of municipality waste and low-cost sites. These facilities can add significant value to regional economies and support job creation. The NSW Government is open to all large-scale waste management technologies, however there are a number of tested technologies including:

• Material Recovery Facility (MRF)
  A range of MRF’s are already in operation in NSW. The technology risk is therefore relatively low. Requires: more than 100,000 tonnes of recyclables per annum.

• Food Organic and Green Organic Processing (FOGO)
  FOGO is an anaerobic process that produces methane and converted into power, heat and clean biogas. FOGO processing facilities in NSW already exist, and therefore the technology risk is also relatively low. Requires: more than 50,000 tonnes of organic feedstock per annum.

• Refuse Derived Fuel (RDF)
  RDF is waste converted into combustible energy material. Requires: 150,000 and 250,000 tonnes of feedstock per annum.

• Energy from Waste (EfW)
  EfW is a facility that recovers energy by thermally treating waste. Requires: more than 300,000 to 400,000 tonnes of residual waste per annum.

Opportunities for profitability of large-scale waste management facilities

Key considerations to ensure profitability to a large scale regional waste facility:

• access to adequate feedstock is important to a facility’s profitability as transportation can be costly
• larger townships produce larger volumes of waste, so investment in smaller municipalities, where feedstock is limited will need to be within a reasonable distance to larger areas: access by rail within 500km; site located within 50 – 250km of freight rail line; and within 100km of a town greater than 10,000 people
• synergies with existing or emerging business sectors to generate demand for the facility’s outputs such as plastics, cardboard, glass, metals and heat, electricity
• proximity to services such as electricity and gas, as well as access to suitable parcels of land.
CASE STUDY: PARKES SPECIAL ACTIVATION PRECINCT MASTERPLAN

Special Activation Precincts (SAPs) are dedicated areas in regional NSW designed to create jobs, attract businesses and investors, and fuel economic development to ensure regions are well placed to grow and prosper.

A Masterplan has been developed for the Parkes SAP that identifies key opportunities for waste and resource recovery in Parkes. This includes:

- **First mover advantages in embracing circular economy principles**: adopting a circular approach to water, shared energy and waste management on the site to improve resilience and reduce costs.

- **Strategic positioning as a key freight and logistics hub with access to the Inland Rail**: Co-located with the inter-modal transport network, this area is ideally placed to receive and re-process waste and resources, championing circular economy principles.

The Parkes Special Activation Precinct will be a true ecoindustrial park, setting goals for efficient management and environmental factors, including energy, waste, water, climate resilience and emissions presenting unique opportunities for innovative waste and resource recovery projects at a range of scales.
**CASE STUDY: KWINANA WASTE TO ENERGY PLANT (WESTERN AUSTRALIA)**

Western Australia is developing one of two of the only large scale energy from waste facilities in Australia. Phoenix Energy is a $700 million facility located 40km south of Perth and is designed to process up to 400,000 tonnes per annum of MSW for at least 25 years. It will process household, commercial and industrial waste to generate energy, recover and recycle metals, and re-use the remaining ash residue as construction materials. This is equivalent to one quarter of Perth’s post-recycling rubbish.

This project brings many opportunities and benefits to Western Australian including:

- the facility will generate and export 36 MW of electricity to the local grid per annum. This is enough to power more than 50,000 homes
- the facility will generate additional incomes streams through recovering and recycle metals and re-use the remaining ash in construction materials
- 800 new jobs will be created during construction, and 60 permanent positions for the ongoing maintenance and operation of the plant (at least 30 year lifespan)
- will reduces overall greenhouse gas emissions by 200,000 tonnes a year (the equivalent to taking 43,000 cars off the road)
- will divert 400,000 tonnes from landfill per annum. This will grow as population growth increases.

**CASE STUDY: VEOLIA’S WOODLAWN BIOREACTOR**

The Woodlawn Bioreactor currently manages around 20% of Sydney’s putrescible waste and capturing its emissions to generate clean energy for up to 30,000 homes.

The partnership between Pacific National and Veolia in developing rail-based processing and transport capabilities allows Woodlawn to accept waste from Sydney and shows how multi-national businesses and regional NSW are key partners in sustainably addressing Sydney’s waste challenge.

The Woodlawn facility has prioritised sustainable and innovative waste management practices including:

- 7 landfill gas engines that recover up to 7 megawatts of clean energy from what would otherwise be gas-emitting waste material
- aquaculture and horticulture capturing waste heat from energy production and using it for fish farming and hydroponic horticulture
- windfarm (operated by Infigen Energy) that harnesses 48.3 megawatts of clean energy per year
- solarfarm utilising increased sun exposure from cleared land to produces 2.5 megawatts of clean energy per year.
NSW GOVERNMENT IS SUPPORTING INVESTMENT IN REGIONAL NSW

The NSW Government sees the value of supporting investment in regional NSW. That is why the NSW Government has committed unprecedented funding and targeted approaches to developing industry in the regions. A total of $1.6 billion has been allocated under the Regional Growth Fund and Regional Growth Environment and Tourism Fund. A further $4.2 billion has been committed to investing into transformative regional infrastructure projects under the Snowy Hydro Legacy Fund.

Regional investment concierge

The NSW Government provides a concierge service to industry, connecting the right people to provide advice, guidance, and support to ensure successful industry integration to our regions.

There are benefits to investment in Special Activation Precincts

Special Activation Precincts (SAPs) are dedicated areas in regional NSW designed to create jobs, attract businesses and investors, and fuel economic development to ensure regions are well placed to grow and prosper.

The NSW Government has announced two SAPs, one in Parkes and another in Wagga Wagga. The NSW Government may announce new SAPs in the future.

The Parkes SAP has a focus on waste and resource recovery as well as freight and logistics, and the agricultural industry.

Wagga Wagga SAP has an emphasis on recycling and renewable energy. The benefits realised through increased freight and logistics connections allow for the establishment of higher value-add industries that reduce waste streams and recycle products.

For more information, visit the NSW Government Special Activation Precincts website.

ROLE OF GOVERNMENT

The role of Government is to provide certainty for investors. This can be through:

- clear policy positions and strategic directions in relation to waste avoidance and resource recovery
- a transparent and efficient approvals system
- support for R&D and commercialisation of new technologies
- the use of procurement to support new markets for recycled products.

The 20-Year Waste Strategy for NSW will clarify many of these roles.
CASE STUDY: SOUTHERN OIL, WAGGA WAGGA

Southern Oil re-refines waste lube oil for reuse as lube oil. Southern Oil processes produce no waste, reduce the need for oil imports and the end product has a significantly smaller carbon footprint than crude base oils.

Southern Oil’s Wagga Wagga plant and Northern Oil Refinery at Gladstone are the only facilities in Australia producing fully re-refined lube oil accredited for use by a major international oil company for global applications.

These re-refineries give Southern Oil the capacity to process 38% of Australia’s annual waste lube oil production (including 100% of Queensland’s waste lube oil).

Now a part of the newly announced Wagga Wagga Special Activation Precinct, Southern Oil will be able to access to the significant level of NSW Government led planning studies to accelerate development approval timeframes as they look to expand their capability in regional NSW.

Parkes Special Activation Precinct is the other location that provides industry the opportunity to take advantage of NSW Government investment and accelerated development timeframes. Given the rail connectivity with all the major cities of Australia and presence of major logistics businesses, Parkes represents a unique opportunity for waste and recycling in regional NSW.

ZONING, APPROVALS AND LICENCING

Planning assessment and approval pathways

The Environmental Planning and Assessment Act 1979 (the EP&A Act) establishes several planning assessment and approval pathways for different kinds of development including waste and resource recovery facilities.

For more information see the NSW Government Planning Portal.

Environment protection licence

An Environment Protection Licence (EPL) under the Protection of the Environment Operations Act 1997 is required for waste and resource recovery facility projects. An EPL is issued by the Environment Protection Authority.

For more information visit the Environment Protection Authority.

Waste Investment Opportunities in Regional NSW

Waste less, recycle more

The NSW Government is investing $802 million over nine years to 2021 through the Waste Less, Recycle More initiative to deliver waste and recycling services in NSW. It is the largest waste and recycling funding program in Australia and provides funding to address a range of issues. There is funding available for: market development, managing problem wastes and new waste infrastructure.

For more information visit Department of Planning, Industry and Environment.

Regional investment attraction package

The $20 million Regional Investment Attraction Package can deliver bespoke incentive funding to enable industries to establish new facilities in regional NSW.

For more information visit NSW Government Invest.

Regional skills relocation grant

The NSW Government has established the Regional Skills Relocation Grant to increase the availability of skilled and experienced workers for businesses setting up in, relocating to, or existing in regional NSW.

For more information on grants, visit NSW Government Invest.
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