

Woodlawn Advanced Energy Recovery Centre

Scoping Report

Prepared for Veolia Environmental Services (Australia) Pty Ltd
May 2021

Woodlawn Advanced Energy Recovery Centre

Scoping Report

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19 May 2021

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Executive Summary

Veolia Environmental Services (Australia) Pty Ltd (Veolia) owns and operates the Woodlawn Eco Precinct (the Eco Precinct), located approximately 40 km south of Goulburn and 50 km north of Canberra. The Eco Precinct has prioritised sustainable and innovative waste management practices for the last 20 years, and has been developed to include a range of complementary waste management and resource recovery operations and technologies. These include the Woodlawn Bioreactor (the Bioreactor), Woodlawn Bioenergy Power Station, Woodlawn Mechanical Biological Treatment (MBT) Facility, sustainable agricultural operations, aquaculture and horticulture operations utilising waste heat from energy production, and renewable energy generation including wind and solar. The Eco Precinct is part of an integrated waste management system which includes two transfer terminals at Clyde and Banksmeadow in Sydney and the Crisps Creek Intermodal Facility (IMF) in nearby Tarago, which receives waste from greater metropolitan Sydney.

Veolia proposes to develop and operate the Woodlawn Advanced Energy Recovery Centre (ARC) (the project), an energy recovery facility (ERF), as the next phase of the Eco Precinct. This involves the development of an additional waste management technology at the Precinct, treating a portion of the waste stream, which is already approved to be received at the site via rail from Sydney and road from surrounding areas. Energy recovery is a well-used and recognised waste management technology globally, which is preferable to disposal to landfill.

The project is classified as a State significant development (SSD) under the *Environmental Planning and Assessment Act 1979* (EP&A Act) in accordance with Schedule 1 of State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP). The project is of a type listed in Schedule 1 of the SRD SEPP, namely it meets the definition of both 'Electricity generating works and heat or co-generation' (clause 20) and 'waste and resource management facilities' (clause 23).

The ARC is designed to recover energy from waste that will otherwise be disposed to landfill and involves the construction and operation of the following key components and ancillary infrastructure. The conceptual design, which may be refined during the EIS stage, proposes:

- development of an ERF for the thermal treatment of residual municipal solid waste and commercial and industrial waste (waste feedstock) that will otherwise be disposed of to landfill;
- thermal treatment of approximately 380,000 tonnes per annum (tpa) of residual waste feedstock;
- recovery of approximately 39 MW of electrical energy;
- management of residual by-products (ash) generated by the ARC within the Eco Precinct; and
- ancillary development of site infrastructure to facilitate construction and operation of the project.

The project will have the following benefits:

- over \$600 M initial investment in regional NSW and a further \$2B investment in lifetime maintenance and employment;
- increasing Veolia's capacity to recover non-recyclable waste, diverting approximately 380,000 tpa from landfill;
- recovery of about 39 MW of electrical energy, enough to power 50,000 homes per year;
- generation of around 300 jobs during construction and 40 jobs during operation; and
- further investment in community initiatives.

The project will be designed with regard to the applicable NSW legislation and policies, and key European Union (EU) guidance including the Industrial Emissions Directive (IED) 2010/75/EU and the *Best Available Techniques (BAT) Reference Document for Waste Incineration: Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control)* (2019) (the BREF document) to ensure that it does not pose an unacceptable risk to human health or the environment.

This document outlines the development of the project scope, the proposed approval pathway, the issues and approach for impact assessment, initial outcomes of early consultation, and identifies the approach to consultation proposed as part of the EIS preparation.

Based on the findings of the scoping report, the following key issues will be addressed in the EIS:

- air quality, odour and greenhouse gas;
- human health risk;
- surface water and groundwater;
- hazards and risks;
- visual;
- social and economic;
- traffic and transport;
- noise and vibration; and
- cumulative impacts.

Other matters that require assessment, but may not require a standalone or detailed technical assessment in the EIS are:

- biodiversity;
- Aboriginal cultural heritage and historic heritage;
- land capability, stability and soils; and
- built environment.

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1 Introduction

1 Introduction

1.1 Overview

Veolia Environmental Services (Australia) Pty Ltd (Veolia) owns and operates the Woodlawn Eco Precinct (the Eco Precinct), located approximately 40 km south of Goulburn and 50 km north of Canberra. The regional and local context are shown in Figure 1.1 and 1.2. The Eco Precinct has prioritised sustainable and innovative waste management practices for the last 20 years, and includes the following operations and technologies:

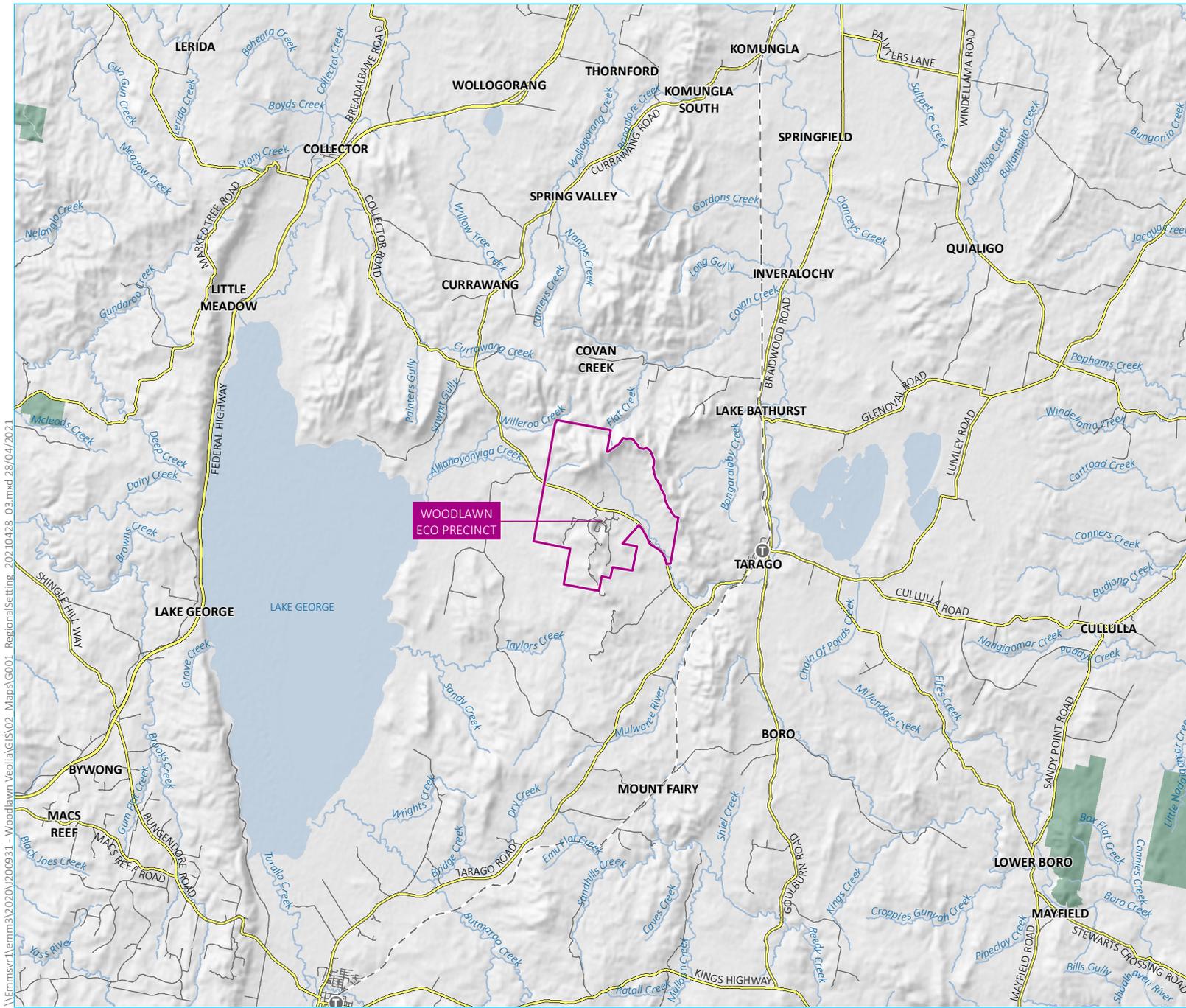
- Woodlawn Bioreactor (the Bioreactor) – a municipal solid waste landfill in which liquids are recirculated to help bacteria break down the waste, enhancing the capture and extraction of landfill gas.
- Woodlawn BioEnergy Power Station – utilises the gas from the Bioreactor to generate electricity.
- Woodlawn Mechanical Biological Treatment (MBT) Facility – extracting the organic content from waste.
- Agriculture – the Eco Precinct includes a working farm that applies sustainable management practices.
- Aquaculture and horticulture – use of captured waste heat from the Power Station for use in sustainable fish farming and hydroponic horticulture.
- Renewable energy generation – the Woodlawn Wind Farm (operated by Infigen Energy) which generates 48.3 megawatts (MW) of clean energy per year, and a solar farm producing 2.3 MW of clean energy per year.

The Eco Precinct also comprises other waste related activities which support operations including a Leachate Treatment Plant (LTP), and the Crisps Creek Intermodal Facility (IMF) which is located approximately 5 km east of the Eco Precinct.

Woodlawn is an important waste management site for NSW, accepting some 40% of Sydney's municipal solid waste (MSW). It forms a key part of a waste management system which comprises two transfer terminals in Sydney (Clyde and Banksmeadow) where municipal waste is sorted and loaded into rail containers for transport by rail to Crisps Creek and then on to Woodlawn by truck.

The Woodlawn Advanced Energy Recovery Centre (ARC) (the project), an energy recovery facility (ERF), is proposed as the next phase of development at the Eco Precinct. The project is classified as a State significant development (SSD) under the *Environmental Planning and Assessment Act 1979* (EP&A Act) in accordance with clauses 20 and 23 of Schedule 1 of State Environmental Planning Policy (State and Regional Development) 2011. The applicant for the project is Veolia Environmental Services (Australia) Pty Ltd (Veolia).

This scoping report has been prepared with reference to *Preparing a Scoping Report – State Significant Development Guide, Exhibition Draft* (Department of Infrastructure and Planning (DPIE) 2020).

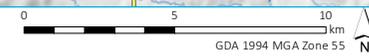


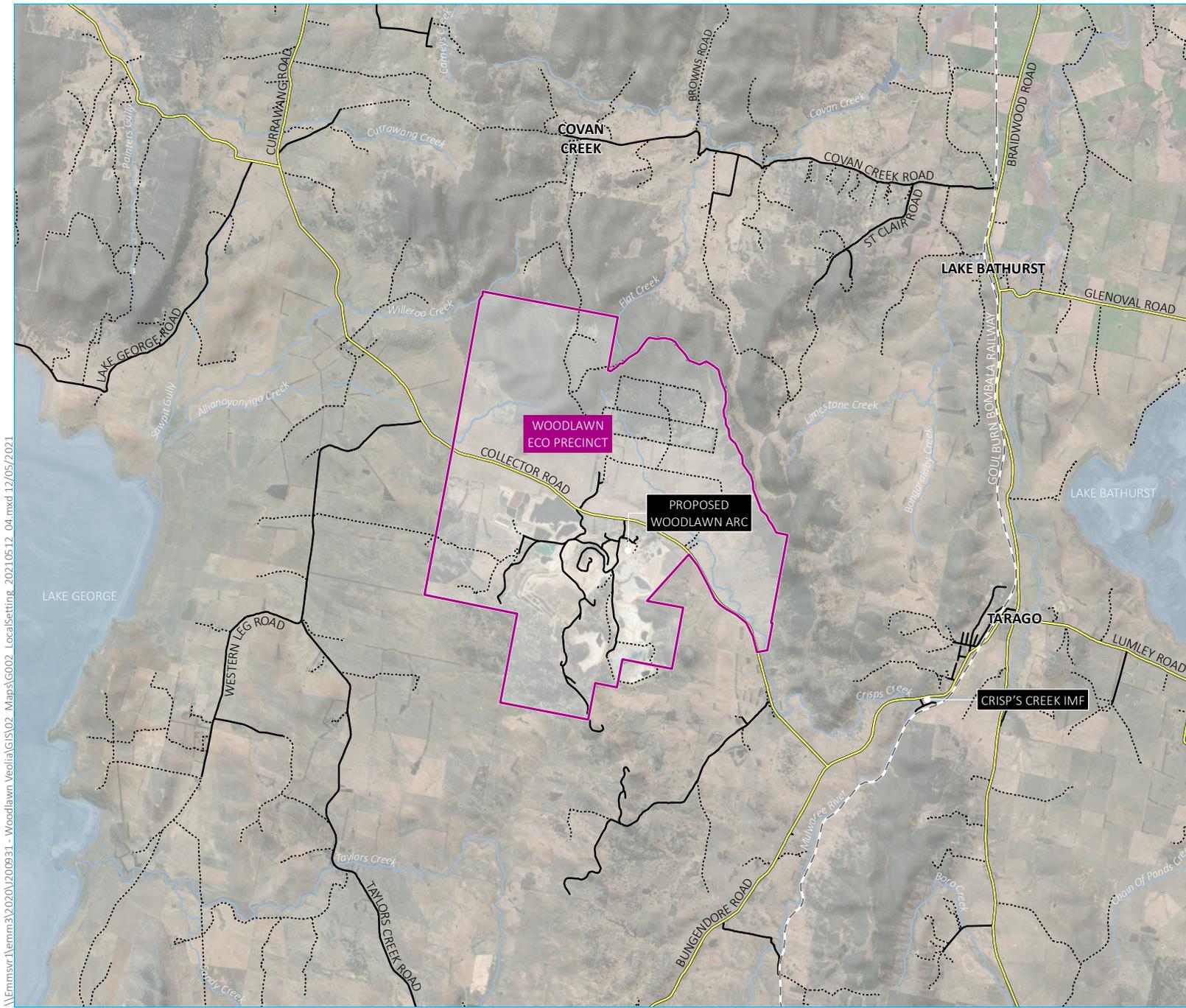
- KEY**
- Woodlawn Eco Precinct boundary
 - Train station
 - Rail line
 - Major road
 - Minor road
 - Named watercourse
 - Named waterbody
 - NPWS reserve
 - State forest

Regional setting

Woodlawn Advanced Recovery Centre
Scoping report - request for SEARs
Figure 1.1

Source: EMM (2021); Veolia (2021); DFSI (2017); GA (2011); ASGC (2006)





- KEY**
- Woodlawn Eco Precinct boundary
 - Rail line
 - Major road
 - Minor road
 - Vehicular track
 - Named watercourse
 - Named waterbody

Woodlawn Eco Precinct
local setting

Woodlawn Advanced Recovery Centre
Scoping report - request for SEARs
Figure 1.2



\\Emmsvr1\emms3\2020\U200931 - Woodlawn Veolia\GIS\02 Maps\G002 LocalSetting_20210512_04.mxd 12/05/2021

Source: EMM (2021); Veolia (2021); DFSI (2017); GA (2011)



1.2 The project

Veolia is proposing to develop and operate an ERF designed to recover energy from waste that will otherwise be disposed to landfill. The project involves construction and operation of the following key components comprising the ARC:

- development of an ERF for the thermal treatment of residual MSW and commercial and industrial (C&I) waste (the waste feedstock) that will otherwise be disposed of to landfill;
- thermal treatment in the ARC of approximately 380,000 tonnes per annum (tpa) of the waste feedstock;
- recovery of about 39 MW of electrical energy;
- management of residual by-products generated by the ARC; and
- ancillary development of site infrastructure to facilitate construction and operation of the project.

The project will have the following benefits:

- over \$600 M initial investment in regional NSW and a further \$2B investment in lifetime maintenance and employment;
- increasing Veolia's capacity to recover non-recyclable waste, diverting some 380,000 tpa from landfill;
- recovery of around 39 MW of electrical energy, enough to power 50,000 homes per year;
- generation of 300 jobs during construction and 40 jobs during operation, the majority of which are likely to be in the Goulburn region; and
- further investment in community initiatives.

The project will be designed with regard to the applicable NSW legislation and policies, and key European Union (EU) guidance including the Industrial Emissions Directive and the *Best Available Techniques (BAT) Reference Document for Waste Incineration: Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control)* (2019) (the BREF document) to ensure that it does not pose an unacceptable risk to human health or the environment.

1.3 History of the Woodlawn Eco Precinct

Veolia purchased the site of the Woodlawn Eco Precinct in 2001 following the closure of the former mining operations, with the intention to rehabilitate the degraded mine site and broader mine-related area. Additional land was acquired around the mine site to provide a buffer to sensitive receptors and incorporate additional agricultural uses.

Veolia prides itself on being a respectful and valuable contributor to the local community for almost 20 years. Community and stakeholder engagement began early with Veolia's acquisition of the former mining operations. The Community Liaison Committee (CLC) was established for the initial Woodlawn Eco Precinct around this time. Since its inception the CLC has played an important role in providing regular community engagement.

The Woodlawn Eco Precinct has developed over the last 20 years and includes an integrated system of waste management and resource recovery operations. The Bioreactor, Crisps Creek IMF, and associated Clyde Transfer Terminal (in Sydney) commenced operating in 2004. The Banksmeadow Transfer Terminal commenced operating in 2016.

Waste is transported from Sydney in shipping containers via rail to the Crisps Creek IMF (owned by Veolia), located approximately 7 km (by road) from the Eco Precinct near the township of Tarago, adjacent to the Goulburn-Bombala Railway line. Local waste from neighbouring councils and businesses is transported to the Eco Precinct via road.

The Woodlawn MBT Facility began operations in 2017. The MBT Facility is located to the north-west of the Bioreactor and was approved in 2007 to receive up to 280,000 tpa of mixed waste (240,000 tpa of mixed waste and 40,000 tpa of garden waste). The first stage of the MBT completed commissioning in March 2017 and commenced operation in July 2017. Approximately 143,000 tpa of mixed waste is currently accepted from an amalgamation of councils in the Sydney Metropolitan Area. The incoming waste is processed to extract metals and produce organic output, which is matured on site.

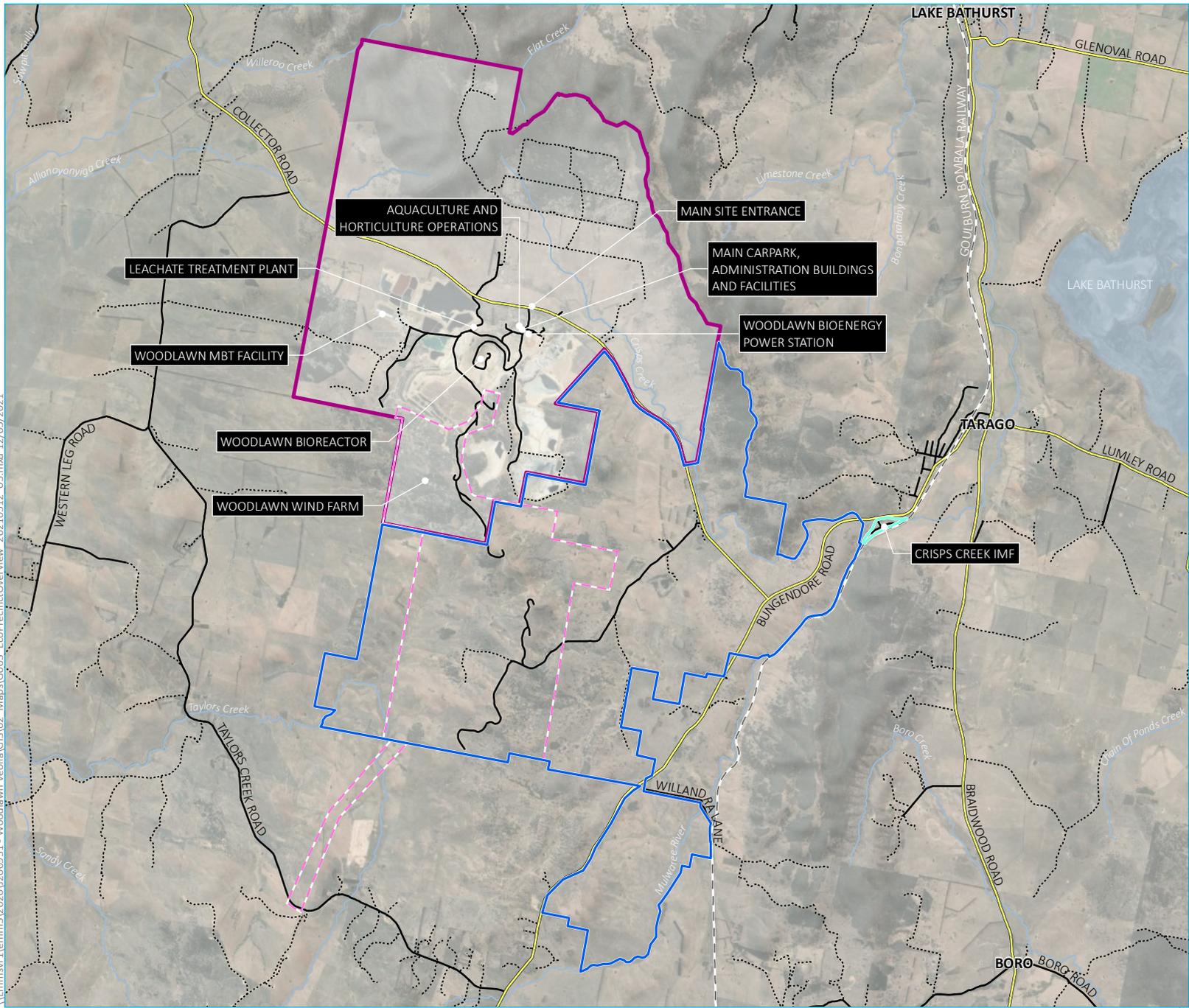
Development and approvals related to the Eco Precinct are summarised in Table 1.1. Key operations at the Eco Precinct are shown in Table 1.1.

Table 1.1 Development and approvals related to the Eco Precinct

Operations	Description	Approval reference and date
Bioreactor, including the Woodlawn Bioenergy Power Station	<p>The Bioreactor was the first stage of the Eco Precinct developed by Veolia. Landfilling operations, which commenced in September 2004, are located in the void of the former open cut mine. Waste is deposited in the Bioreactor and with optimal moisture and temperature conditions, achieves enhanced production of landfill gas, which is collected through a vast network of infrastructure within the void. In 2008 the first purpose-built landfill gas-fired engines were installed at the Bioenergy Power Station, part of the Bioreactor, with excess heat from the operation being used for aquaculture and hydroponic horticulture trials at the site. The methane contained in the landfill gas is used as fuel to generate electricity, which is exported into the electricity grid. There are currently 7 engines installed on site.</p> <p>A Leachate Treatment Plant (LTP) was approved in late 2017 (DA31-02-99-Mod-3) as modification to the Bioreactor and commenced treating leachate in 2018. The LTP facilitates better environmental and operational performance by allowing Veolia to extract and treat greater volumes of leachate from the Bioreactor and minimise and reduce the generation of odour and enable more efficient gas extraction maximising the waste to energy benefits of the Bioreactor.</p>	<p>DA31-02-99 approved 2000.</p> <p>DA31-02-99 Mod 1 approved in 2010 to receive up to 50,000 tpa of waste by road from the local area.</p> <p>DA31-02-99 Mod 2 approved in 2016 to alter site water and leachate management.</p> <p>DA31-02-99-Mod-3 for LTP approved 2017.</p> <p>MP 10_0012 approved in 2012 to increase waste input rates to the bioreactor</p>
Crisps Creek IMF	<p>The IMF forms an integral part of the logistical operations of the Eco Precinct, and is located 7 km by road from the Bioreactor in the township of Tarago, adjacent to the Goulburn-Bombala Railway line. Waste containers transported from the Sydney region via rail are unloaded and transferred onto road trailers at the IMF for transport to the Bioreactor. The IMF is approved to accept 1,180,000 tpa of waste from Sydney.</p>	
Local waste transport to Woodlawn Eco Precinct	<p>Original approval was granted under DA31-02-99 Mod 1 for transport up to 50,000 tpa of waste by road from the local area. Approval was later granted to increase transport up to 130,000 tpa to the Woodlawn Eco Precinct by road (MP 10_0012 approved in 2012). A modification is currently being sought separately to modify the relevant development consent and increase the transport of local waste by road to 200,000 tpa.</p>	

Table 1.1 Development and approvals related to the Eco Precinct

Operations	Description	Approval reference and date
Woodlawn MBT Facility	The MBT facility is approved to receive up to 280,000 tpa of mixed waste from councils in Sydney Metropolitan Area. The waste is processed to extract recyclable materials or produce compost. The compost is matured on site. Changes to site layout, technology and operating hours were approved in 2014. Stage 1 of the facility commenced operations in 2017 and is able to process up to 144,000 tpa of municipal solid waste and 40,000 tpa of green waste of the total approved 280,000 tpa.	MP06_0239 Approved 2007
Solid recovered fuel (SRF) processing facility	The SRF facility is approved to process up to 50,000 tpa of residual waste from the MBT, however has not been constructed to date. The SRF (if constructed) would divert approximately 37,400 tpa residual waste from landfill and produce SRF material that will be transport offsite by rail with the IMF.	MP06_0239-Mod-2 Approved 2019
Aquaculture and horticulture operations	In keeping with the objectives of utilising as many resources as possible within the Woodlawn Eco Precinct, Veolia has been looking for ways to utilise the waste heat created through the production of energy from the landfill gas. Veolia is using waste heat from the Bioenergy Power Station's gas-fired engines in aquaculture operations to cultivate fish, with a horticultural system operating to remove excess nutrients.	Local Council approval
Woodlawn and Pylara farms	Farmland surrounding the Eco Precinct is utilised either for farming practices or requires rehabilitation from former mining activities. Farming at Pylara utilises sustainable farming practices such as a sheep breeding program that includes genetic selection, nutrition and grazing rotation, to increase meat and wool productivity and reduce impacts on soils.	n/a
Woodlawn Wind Farm (the wind farm) operated by Infigen Energy	The 48 MW Woodlawn wind farm comprises 23 turbines and is located along a ridgeline running through both the Woodlawn and Pylara properties. This operation commenced in 2011. The Woodlawn Wind Farm is owned and operated by Infigen Energy.	DA250-10-2004 Approved 2005
Woodlawn Solar Farm	In June 2019, Veolia commissioned a 2.3 MW solar farm adjacent to the MBT Facility. The electricity generated from this solar farm is directly utilised by Veolia's MBT operation, and excess will be used by the Bioreactor operations. This infrastructure follows Veolia's commitment towards resource recovery and energy efficiency.	Local Council approval
Woodlawn Mine Project	Heron Resources Ltd has project approval for the Woodlawn Mine Project which enables it to extract 1.5 million tonnes of copper, lead and zinc ore for up to 21 years from the existing tailings dams and underground workings. The mine project includes dewatering the under-ground mine workings into, and drawing processing water from, evaporation dams which also receive water from the LTP.	PA07_0143



- KEY**
- Woodlawn Eco Precinct boundary
 - Woodlawn Wind Farm (the wind farm) operated by Infigen Energy
 - Crisps Creek Intermodal Facility (IMF)
 - Pylara farm
 - Rail line
 - Major road
 - Minor road
 - Vehicular track
 - Named watercourse
 - Named waterbody

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Source: EMM (2021); Veolia (2021); DFSI (2017); GA (2011)

Woodlawn Eco Precinct overview

Woodlawn Advanced Recovery Centre
Scoping report - request for SEARs
Figure 1.3



0 2.5 5 km
GDA 1994 MGA Zone 55

The Eco Precinct and its operations form part of Veolia's integrated waste management services and are augmented with the following transfer facilities in Sydney:

- Clyde Transfer Terminal – approved to receive up to 600,000 tpa of putrescible waste from municipal and C&I sectors.
- Banksmeadow Transfer Terminal – approved to receive up to 500,000 tpa of solid waste.

Waste is unloaded, sorted, compacted and containerised into shipping containers for transport via rail to the Crisps Creek IMF. Waste from these transfer terminals is utilised in either the Bioreactor or the MBT Facility, depending on Veolia's contractual obligations with its customers.

1.4 The applicant

The applicant for the project is Veolia Environmental Services (Australia) Pty Ltd (Veolia).

In Australia and New Zealand, Veolia is the only environmental solutions organisation with specific capabilities across water and wastewater treatment, energy management, waste and resource recovery services, and industrial cleaning and facilities maintenance services. Veolia employs 4,600 employees and operates across more than 200 locations within the region.

The Veolia Group is a global leader in optimised resource management. With nearly 179,000 employees worldwide, the Group designs and provides water, waste and energy management solutions which contribute to the sustainable development of communities and industries. Through its three complementary business activities, Veolia helps to develop access to resources, preserve available resources, and to replenish them.

In 2020, the Veolia group supplied 95 million people with drinking water and 62 million people with wastewater service, produced nearly 43 million megawatt hours of energy and treated 47 million metric tons of waste. Veolia Environment (listed on Paris Euronext: VIE) recorded consolidated revenue of €26.01 billion in 2020.

2 Strategic context

2 Strategic context

2.1 Site description

The Eco Precinct is located on Collector Road, approximately 6 km west of the village of Tarago, and 40 km south of Goulburn, NSW. As described in Chapter 1, the Eco Precinct includes operational areas used for waste management, energy generation and mining, as well as primary production including sustainable agriculture, aquaculture and horticulture.

The land use zoning of the Eco Precinct under the Goulburn Mulwaree LEP is predominantly IN3 Heavy Industrial, which includes the majority of the waste management, energy generation and mining activities, with the balance zoned RU2 Rural Landscape. Land immediately to the north and south is zoned RU2 Rural Landscape, land to the west is zoned RU1 Primary Production, and land to east, which incorporates the village of Tarago, is zoned a combination of RU5 Village, RU6 Transitional, RU1 Primary Production and E3 Environmental Management (also refer to Chapter 4 and Figure 4.1).

The Eco Precinct has an average elevation of approximately 800 m above Australian Height Datum (AHD) across the site with a maximum of 1,000 m AHD in the north-eastern corner along the ridgeline of the Great Dividing Range (GDR). The region is characterised by undulating plains with the GDR running through the Eco Precinct in a north-south alignment.

The Eco Precinct is situated in the headwaters of the Lake George and Wollondilly River catchment via Allianoyonyiga Creek to the west, and the Mulwaree River catchment via Crisps Creek to the east. The Crisps Creek catchment is part of the WaterNSW regulatory area. Other prominent water features include Lake George approximately 7.5 km to the west and Lake Bathurst approximately 8 km to the north-east of the Eco Precinct (see Figure 1.1).

There are no major National Parks, nature reserves, conservation areas and State forests in close proximity to the Eco Precinct, with the closest National Park estate approximately 17 km to the south-east and 24 km to the west of the Eco Precinct (see Figure 1.1).

Land immediately surrounding the operational areas of the Eco Precinct is owned by Veolia, providing a buffer between operations and surrounding private properties. This includes the Woodlawn Eco Precinct and Pylara Farm as shown in Figure 1.3. Sensitive receptors surrounding the Eco Precinct include:

- homestead properties, with the closest receptors approximately 5 km from the project to the south-west;
- the township of Tarago approximately 6 km from the project to the east, which includes residential properties and other sensitive community land uses such as schools and recreation areas;
- rural residential properties approximately 12 km from the project to the south of the Eco Precinct.

2.2 Energy from waste overview

The recovery of energy from waste is the process of extracting the embedded energy from waste materials that will otherwise be disposed of as landfill. This can occur in a number of ways, but most often through a process of controlled combustion. In Australia there are a range of smaller scale ERF projects in operation, by example many sugarcane mills generate electricity utilising the bagasse or waste from the sugarcane milling process.

Energy recovery from residual waste works in a similar way to conventional coal or gas combustion, where steam is generated from heat and directed into a turbine to produce electricity. Instead of using fossil fuels, energy-from-waste technology has been adapted and updated to use non-recyclable waste materials as the fuel source.

It is estimated that about three tonnes of residual waste replaces one tonne of coal, delivering a low-carbon energy solution, whilst reducing the need for landfill.

Whilst the commercial scale ERF technology is relatively new to Australia, is well used globally. In Europe there are over 500 EfW plants operating in more than 23 countries. In 2017, some 28% of municipal waste treatment in the 28 EU countries was utilised as feedstock for ERFs, and in some countries such as Sweden and Denmark it was over 50%, after about 47% of the waste was used for recycling and composting with only negligible quantities going to landfill.

In these countries ERFs are regarded as complementary to a circular economy and an appropriate treatment for residual waste which will otherwise go to landfill. ERFs are recognised as a legitimate waste disposal process after waste avoidance, reuse and recycling, by the EU Waste Directive and NSW legislation and policy as discussed in Section 2.4.

Veolia currently operates over 65 ERFs around the world and would bring this operational expertise to Australia.

In Australia there are a number of proposals for commercial scale ERFs in NSW, Victoria, Western Australia and Queensland. The most advanced project is the \$700m Kwinana project in WA, which is currently under construction. Once complete it will process up to 400,000 tpa of waste from eight local government areas and generate 36 MW of energy for export to the grid. Veolia will operate this plant when it is complete.

In NSW, waste management and resource recovery policies provide criteria for ERF proposals in the state. These include demonstrating that the proposal represents best practice/best available techniques (BAT) and good neighbour principles.

2.3 NSW waste management and resource recovery legislation

Waste management in NSW is governed by a range of legislation including the:

- *Waste Avoidance Resource and Recovery Act 2001* (WARR Act) – promotes waste avoidance and resource recovery with the objective of minimising the waste generation and disposal sets out objectives to ensure that resource management considers the following hierarchy:
 - Avoid unnecessary resource consumption.
 - Resource recovery (reuse, reprocessing, recycling, energy recovery).
 - Disposal.

Where the generation of waste cannot be avoided, or products cannot be reused, recovery technologies can provide a solution to maximise resources efficiencies and improve sustainability.

- *Protection of the Environment Operations Act 1997* (POEO Act) – provides for environmental protection and management and an overarching framework to ensure the protection of human health and the environment from the inappropriate use of waste.

2.4 NSW waste management and resource recovery policy

A range of regulations and policies support the waste management objectives of the NSW Government. It is apparent from these that decreasing waste to landfill is a key policy objective, and that energy from waste is an accepted technology to assist in achieving landfill diversion targets. The most important and relevant include the following:

- The *Waste Avoidance and Resource Recovery Strategy 2014-2021* (WARR Strategy) which set a range waste management targets for NSW. Of key relevance to this project was a target to reduce the volume of waste disposed at landfill by 75% by 2021. NSW is currently lagging in its performance against this target.
- *Cleaning Up Our Act: The Future of Waste and Resource Recovery in NSW Issues Paper March 2020* (the Cleaning Up Our Act paper). This paper was issued as part of a process to develop a new 20 year waste strategy for NSW. This paper restates the Government’s commitment to the waste hierarchy, which specifically identifies “energy recovery” as a legitimate waste management process and preferable to disposal at landfill. The paper specifically addresses ERF projects noting:

Energy from waste can play an increasingly important role as an alternative to landfilling over the next 20–30 years, as a means of recovering some value from residual waste where other higher-order methods of recovery are not financially or technically feasible. (p43)

The Cleaning Up Our Act paper goes on to note that the new waste strategy being developed by the NSW Government provides an opportunity to review the NSW EfW Policy Statement.

- *NSW Energy from Waste Policy Statement (2015)* (EfW Policy Statement) is a key guidance document for ERF proposals in NSW. It sets out a series of criteria for EfW projects, covering:
 - technical issues;
 - resource recovery;
 - thermal efficiency;
 - best practice/BAT; and
 - the good neighbour principle.

Under the EfW Policy Statement, this project is defined as an “energy recovery facility” which falls outside the “eligible waste fuels” category and hence is expected to meet the criteria set out in Section 4 of the Policy.

The EfW Policy Statement sets out the opportunities of thermal treatment of waste as being:

- the recovery of embodied energy from waste;
- offset of non-renewable energy sources; and
- avoidance of methane emissions from landfill.

The EfW Policy Statement notes that achieving these outcomes is contingent on both ensuring efficient use of resources, with no increase in the risk of harm to human health or the environment. The EfW Policy Statement requires that facilities proposing to recover energy from waste need to meet current international best practice techniques to ensure emissions are below levels that pose a risk to the community, in particular through:

- process design and control;
- emission control equipment design and control; and
- emission monitoring with real-time feedback to the controls of the process.

The project is seeking compliance with the EfW Policy Statement, as follows:

- implementing international best practice, based on Veolia’s global experience;
- meeting the relevant technical and thermal efficiency criteria in the policy;
- achieving the relevant resource recovery criteria in the policy through application of the policy to feedstock being transported flowing through Veolia transfer terminals to the project;
- adopting an appropriate reference facility as required by the policy, nominally a Veolia plant in the United Kingdom; and
- further building on relationships with the local community through meaningful engagement about the project.

The EIS will assess the project against the criteria in the relevant EfW Policy Statement, including an assessment against BAT during the preparation of the EIS. It is noted that the revised *NSW Energy from Waste Draft policy statement* (2021) was released for consultation in April 2021 and will be considered during preparation of the EIS.

2.5 Local planning and land use strategies

The following strategic land use planning documents have been identified as being of relevance, locally and regionally, to the further development of the Woodlawn Eco Precinct.

2.5.1 Local strategic planning statement

Adopted in August 2020, the Goulburn Mulwaree Local Strategic Planning Statement (Planning Statement) provides a 20 year vision for the future growth within the Goulburn Mulwaree Local Government Area (GM LGA) as well as fulfilling requirements of the EP&A Act.

The Planning Statement identifies ten planning priorities that provide a vision for land use planning actions for the LGA for the next 20 years. There are no significant proposals for residential encroachment in the vicinity of the Eco Precinct. Relevant priorities are discussed below.

- **Planning Priority 5: Primary Industry**

This planning priority provides acknowledgement that renewable energy infrastructure is important to the local and regional economy, however, should not be at the expense of crop and pasture potential.

Further, it indicates planning principles should be identified to support primary industry within the region including adequate protections for primary industry activities while also balancing the interests of the community and the promotion of renewable energy projects.

As an established precinct, the Eco Precinct provides for the further establishment of energy infrastructure such as the ARC that does not compromise land identified as important to the regional farming industry. Development of additional energy infrastructure at the Eco Precinct further reinforces the existing network infrastructure and leverages the existing infrastructure and opportunities around the Eco Precinct rather than seeking new greenfield sites.

- **Planning Priority 6: Industry and the economy**

It is identified in Planning Priority 6 that the majority of the region’s employment opportunities are located within Goulburn Mulwaree. It indicates the important planning priorities that provide continued support to regional growth sectors while also providing value-add to local and State infrastructure.

Development of the ARC provides regional employment opportunities in both the construction and operational phases of the project.

- **Planning Priority 7: Sustainability**

As a growth area the Goulburn Mulwaree Council (GM Council) has identified the need to provide waste and recycling services and infrastructure to meet the needs of the growing community. It is noted that this needs to be done in a way that achieves environmental and sustainability improvements to the region. This planning priority outlines a commitment to working towards a circular economy.

GM Council has identified the challenges for land use considerations around the increased take up of renewable energy generation as well as the provision waste management facilities that support a circular economy with local reuse and recycling options. The project provides the region with the ability to meet both these challenges on land that has an existing land use appropriately zoned to operate these facilities.

Operationally, the project will enhance the region's ability to implement circular economy waste management principles and benefit from energy produced locally. Similarly, and as previously identified, further development in the energy sector improves network infrastructure and provides the regional benefit of being an attractive prospect for the renewable energy market.

2.5.2 South East and Tablelands Regional Plan 2036

The *South East and Tablelands Regional Plan 2036* (Regional Plan) provides a blueprint for regional growth balanced with protection of the natural environment. The Regional Plan was developed to provide an overarching framework to guide more detailed NSW government policies for regional land use planning and inform infrastructure funding decisions.

The Regional Plan is made up of five goals with directions and actions as to how regional and local planning should achieve these five goals.

The following goals and associated directions and actions identified from the Regional Plan are considered to have relevance to the proposed development of the ARC:

- **Goal 1 – A connected and prosperous economy**

Diversification of priority growth sectors in the South East and Tablelands is identified as part of this goal and includes sectors such as agriculture and aquaculture, freight and logistic, and renewable energy. All of these sectors are currently being undertaken as components of the Eco Precinct and will benefit as a result of the project.

- **Direction 5: Promote agricultural innovation, sustainability, and value add opportunities**

The project provides commercial and tourism related activities that support the agricultural sector (Action 5.1) through the ongoing operation of agricultural lands (Pylara and Woodlawn farms owned and operated by Veolia at the Eco Precinct) and proposed educational related facilities as part of the project as value-add opportunities to the Eco Precinct facilities.

By design, the Eco Precinct provides co-location of facilities including agriculture, aquaculture, tourism and educational facilities, and maximises access to infrastructure (Action 5.3).

- **Direction 6: Position the region as a hub of renewable energy excellence**

Action 6.1 seeks identification of opportunities for renewable energy industries. The Eco Precinct, with landfill gas, wind and solar generated electricity, is a part of an existing hub of renewable energy generation which will be complemented by the ARC, a low carbon energy source.

2.5.3 The Tablelands Regional Community Strategic Plan 2016-2036

The Tablelands Regional Community Strategic Plan 2016-2036 (Strategic Plan) was developed as a requirement of the NSW Government's Integrated Planning and Reporting Framework and is a strategic framework that provides the opportunity for local government to engage with communities to determine and plan community aspirations for their regions.

This Strategic Plan was developed jointly by GM Council, Upper Lachlan Shire Council and Yass Valley Council as a joint Regional Community Strategic Plan as the respective Councils recognised the synergies and efficiencies of developing a joint regional strategic plan. From the consultation process five community goals were identified in response to the strategic pillars developed for the Strategic Plan. Of these, the following strategies have been identified as relevant to the proposed ARC project:

- **Our Environment: Strategy EN2**

The community envisages regional adoption of environmental sustainability practices with Council providing incentivisation to industry to adopt environmentally sustainable practices.

Promotion of an adaptive and innovative agricultural industry is encouraged through the promotion of sustainable agricultural practices which is reflected in the continued development of the Eco Precinct.

Development of the project provides future potential for expansion of the existing diverse farming opportunities already being undertaken at the Eco Precinct such as aquaculture and hydroponic horticulture.

- **Our Economy: Strategy EC5**

Collaboration between business and government is envisaged to provide educational, training, and employment opportunities within the region. The expansion of the Eco Precinct to incorporate the project will provide employment opportunities for the region in both established and emerging technologies. Development of the ARC provides employment opportunities from both construction and operational phases of work.

- **Our Infrastructure: Strategy IN6**

Development of the project is reflective of the Strategy IN6 that seeks the implementation of safe, accessible, and efficient management of recycling options. The community seeks a reduction of waste to landfill and an increase in the number of public recycling facilities. The project will assist in directing waste away from landfill and towards a preferred waste management process of energy recovery.

2.6 Site suitability

The proposed site for the project is within Veolia's Woodlawn Eco Precinct. The Eco Precinct is already appropriately zoned and has substantial infrastructure developed for integrated waste management and resource recovery. The Eco Precinct has prioritised sustainable and innovative waste management practices for the last 20 years, and includes a range of complementary waste management and resource recovery operations and technologies, as outlined in Section 1.1. The project is considered a compatible extension of the existing operations at the Eco Precinct, involving the addition of a waste recovery technology in line with existing sustainable and innovative waste management practices.

The Eco Precinct currently receives waste for recovery, reuse and recycling purposes. Existing infrastructure, including the Banksmeadow and Clyde transfer terminals and Crisps Creek IMF and associated approvals to receive 1.18 million tpa (Mtpa) are in place to transport waste by rail to the Eco Precinct from greater metropolitan Sydney.

The Eco Precinct already incorporates renewable energy facilities (Woodlawn BioEnergy Plant, Woodlawn Windfarm and Woodlawn Solar Farm). The project will enable the use of existing transmission and associated infrastructure and may provide the impetus for upgrades. Additional infrastructure development in the region provides greater industry stability and increases investment confidence for continued sector growth.

These factors are identified as being desirable attributes of future regional development in the previously discussed regional and strategic plans.

These plans, policies, and strategies provide further context to the suitability of the Eco Precinct for the project. The local and regional planning strategies identify support from local governments for development of technologies, such as the recovery of energy from waste proposed by the project, to assist in delivery of goals associated with waste management, a circular economy, job creation, and investment in regional infrastructure. The regional Strategic Plan provides additional context that the communities are amenable to the implementation and development of technologies that allow for greater management of regional waste, job creation, population retention, and sustainability.

Veolia has a proven history of developing and operating waste management facilities within the Woodlawn Eco Precinct. The Eco Precinct has provided additional opportunity for development of renewable energy industries initiating development of the Woodlawn BioEnergy Plant, Woodlawn Windfarm and the Woodlawn Solar Farm. Development of side industries such as Veolia's investment in aquaculture and hydroponic horticulture has demonstrated that by-products of energy production can be utilised for additional sustainable industries. It is considered that this site demonstrates suitability for development of the project based on its existing land use, proximity to infrastructure, and in consideration of relevant plans, policies, and strategies associated with the region.

3 Project description

3 Project description

3.1 Overview

The project involves development and operation of the ARC, an ERF for the thermal treatment of residual MSW and C&I waste (waste feedstock), and supporting infrastructure. On current plans, the ARC will have the capacity to treat about 380,000 tpa of residual waste feedstock and will recover some 39 MW of electrical energy, subject to further consideration and assessment during the EIS stage. The project footprint is shown in Figure 3.1.

The project involves the construction and operation of:

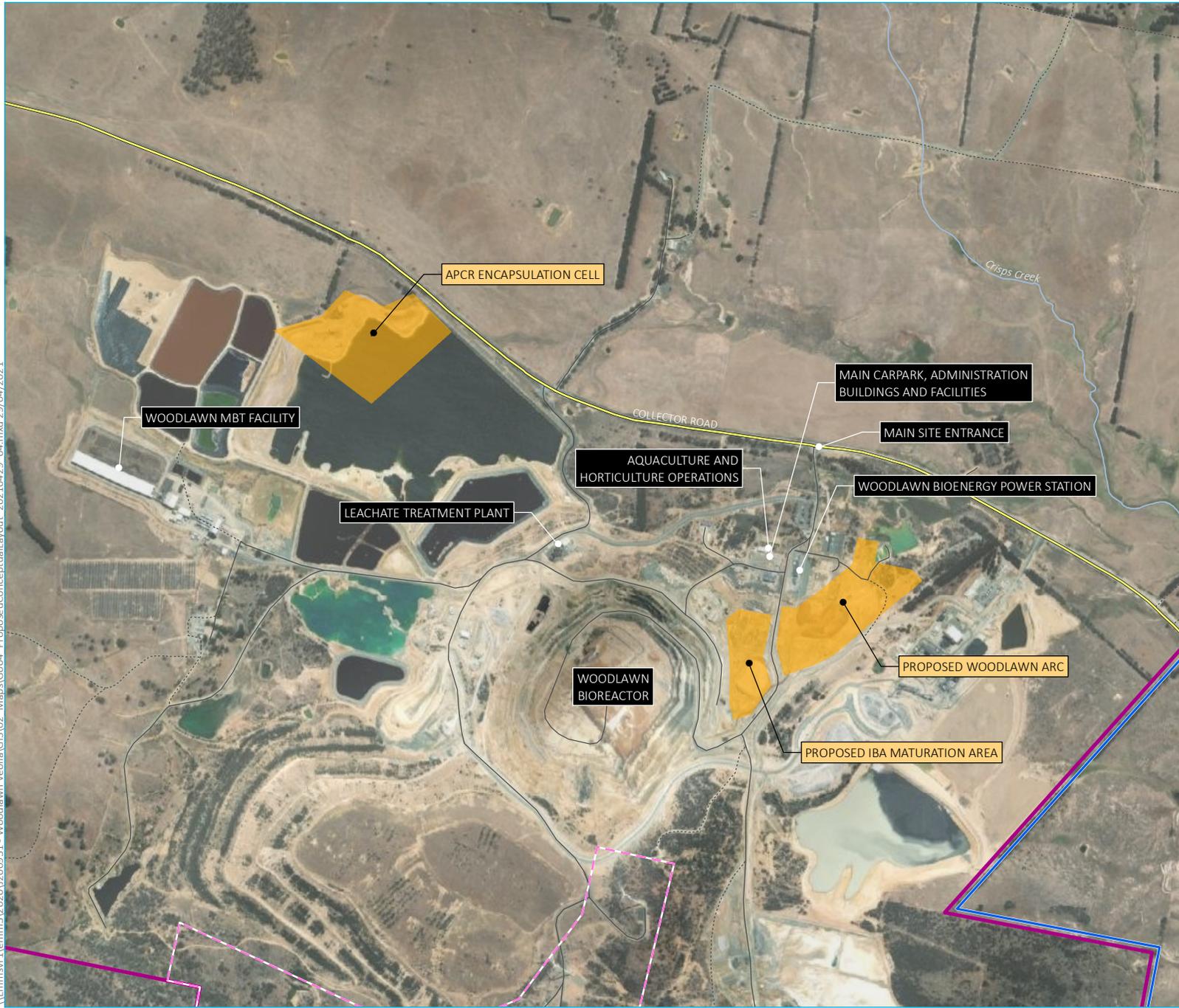
- the ARC, comprising:
 - the main ERF plant and flue gas treatment system;
 - ancillary infrastructure including waste feedstock container handling and storage area in the immediate vicinity of the ARC, administration buildings, facilities, education centre, landscaping, stormwater and drainage infrastructure;
- ash management:
 - incinerator bottom ash (IBA) maturation area and handling equipment;
 - dedicated lined and engineered landfill cell for the encapsulation of air pollution control residues (APCr) from the flue gas treatment system (the APCr encapsulation cell);
- transport and access:
 - new site access road and intersection with Collector Road;
 - internal access roads, car and bus parking facilities;
 - weighbridges for inbound and outbound vehicles; and
- utilities and services, comprising a new substation for export of generated electricity.

The project does not require any changes to:

- total volume of waste received at the Eco Precinct, which will continue in accordance with existing approvals via rail and road;
- mode of transport of waste received at the Eco Precinct – existing rail infrastructure will continue to be used to transport the majority of waste to the Eco Precinct from the Banksmeadow and Clyde transfer terminals via the Crisps Creek IMF, with the balance by road; or
- operating hours of the Eco Precinct.

The project also does not require any changes to operation of the Bioreactor and BioEnergy Power Station, MBT, wind and solar operations, Woodlawn Mine Project or agricultural operations.

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- KEY**
- Project footprint
 - Woodlawn Eco Precinct boundary
 - Woodlawn Wind Farm (the wind farm) operated by Infigen Energy
 - Pylara farm
 - Major road
 - Minor road
 - Vehicular track
 - Named watercourse

Conceptual project footprint

Woodlawn Advanced Recovery Centre
Scoping report - request for SEARs
Figure 3.1

Source: EMM (2021); Veolia (2021); DFSI (2017); GA (2011)



3.2 The ARC

3.2.1 ERF plant description

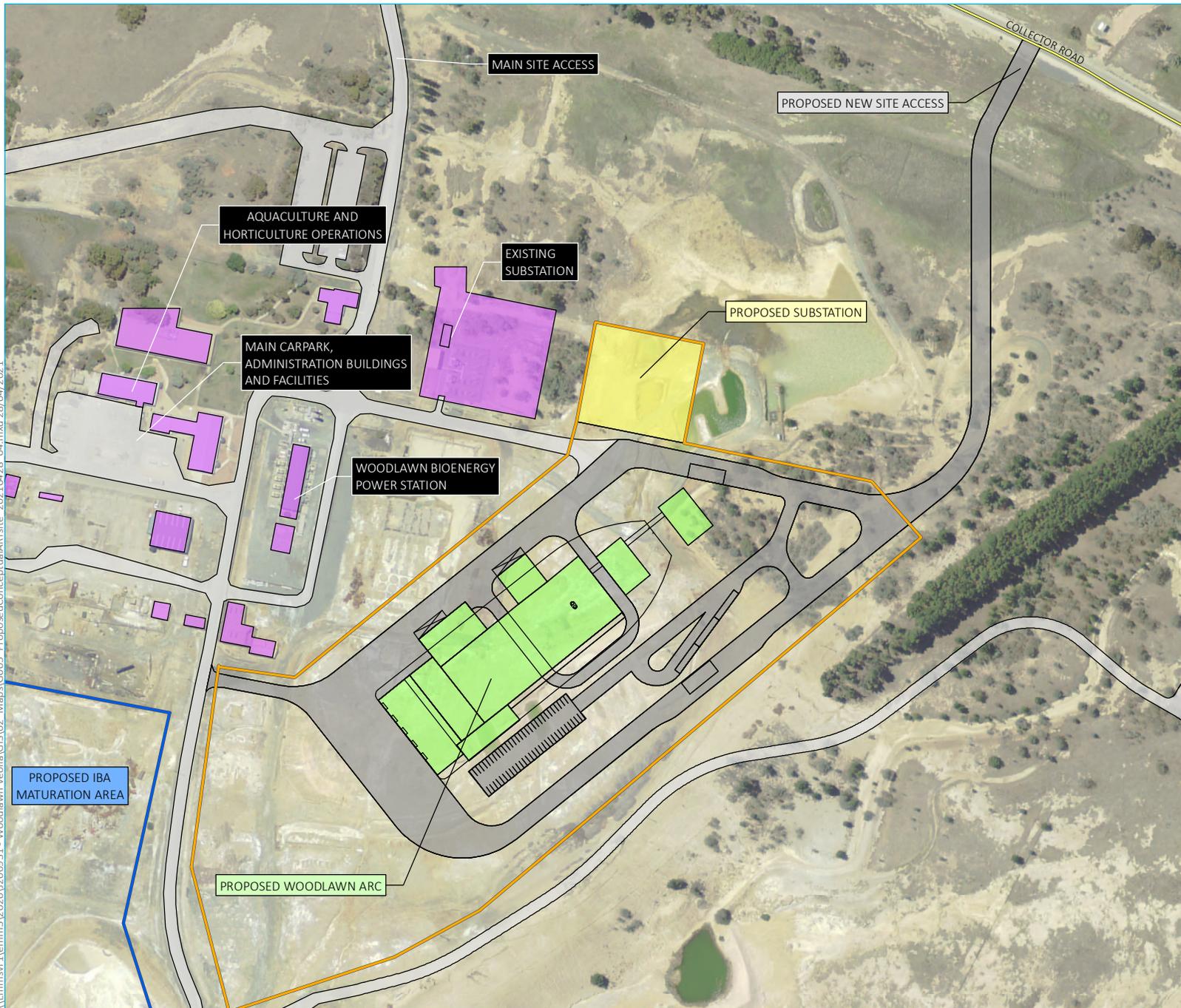
The construction and operation of the ARC will bring a new waste management technology to the Eco Precinct. The location of the ARC is shown in Figure 3.2. It will utilise existing approved waste volumes at the Eco Precinct as waste feedstock, and hence the project is not seeking an increase to existing approved annual waste volumes.

The currently proposed technology for the ARC is based on the moving grate system, which is used in many ERFs worldwide, although this will be considered further during the EIS stage. The energy recovery process involves the feedstock being dropped onto a moving grate which moves through a drying and combustion process within a furnace. This occurs within a controlled air-flow environment, at temperatures more than 850°C, with a residence time of at least two seconds. This high intensity combustion generates heat, which is used to produce steam in a purpose built boiler. The steam drives a turbine to generate electricity for export to the power grid.

The plant will be housed within a fully enclosed building, which in its conceptual form, has been designed to fit within the surrounding landscape and environment. The design draws influence from the rolling hills, native trees, rural farming structures and the surrounding grasslands, as well as the waste recovery and energy generation features of the Eco Precinct, with wind turbines a visual feature of the location. The ERF has been designed and oriented to act as the starting point of the ridgeline behind, both in terms of its physical form, as well as an energy generation source in the context of the wind turbines. The roof form has been oriented to mimic that ridgeline and endeavours to blend the building in to the environment when viewed from Collector Road. The visual features of the ARC are discussed further in Section 6.5.

Key components of the ARC plant are described below. A site layout of the proposed ARC is shown in Figure 3.2 and includes:

- tipping hall – enclosed hall where feedstock is received by truck from the Crisps Creek IMF. Feedstock will be trucked to the facility and unloaded to the feedstock bunker within the tipping hall. The tipping hall is maintained under negative pressure and potentially odorous air drawn from the hall is used for combustion.
- feedstock bunker and overhead cranes – From the bunker, feedstock is picked up by an overhead grab crane and transferred to a chute which feeds the moving grate in the boiler hall.
- boiler hall – feedstock moves along a grate through the combustion chamber at temperatures exceeding 850°C. This process is tightly controlled to ensure the optimum combustion process to facilitate destruction of the residual waste, whilst also maximising heat production. The heat is then transferred to a purpose built boiler to produce steam that will be transferred to a steam turbine.
- IBA collection – IBA is discharged and collected on a belt from below the moving grate. It goes through a coarse metals removal process enabling the collection of residual metals for recycling. The IBA is then consolidated in a stockpile for loading and transferring to subsequent treatment and recycling or disposal.
- flue gas treatment system – a comprehensive and dedicated system, which includes the addition of reagents to remove particulates and contaminants from the flue gas prior to discharge into the atmosphere, is an integral part of the plant, and is described below in Section 3.2.2.
- turbine hall – the turbine will be powered by the steam generated from the heat recovered in the combustion processes within the facility. Electricity will be generated in the turbine hall which will contain a steam turbine coupled to a generator. Based on a feedstock with an estimated calorific content 9.5MJ/kg the project is expected to generate a thermal power output of 125.35MWth which will be converted into an electrical power output of 38.9MWe.



- KEY**
- Woodlawn Eco Precinct boundary
 - Proposed conceptual Woodlawn ARC
 - Proposed IBA maturation area
 - Proposed ARC building
 - Proposed substation
 - Proposed Road
 - Existing facilities
 - Existing Road
 - Detail
 - Major road

Woodlawn ARC
conceptual site layout

Woodlawn Advanced Recovery Centre
Scoping report - request for SEARs
Figure 3.2

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Source: EMM (2021); Veolia (2021); DFSI (2017); GA (2011)



Currently the Eco Precinct is operating below its approved capacity, with the fate of waste as follows:

- 143,000 tpa is treated in the MBT; and
- 850,000 tpa is disposed in the Bioreactor, including residual waste from the MBT.

This project involves the diversion of about 380,000 tpa from landfill to the ARC. This is in keeping with the Government's objective of diverting waste from landfill to a higher order use, in this case the recovery of energy.

The feedstock for the project will be drawn from the Sydney residual waste stream which is sorted, containerised and transported by rail from Veolia's transfer terminals at Clyde and Banksmeadow.

The feedstock will be drawn from the existing approved waste inputs to Woodlawn and hence this project does not propose any increase in tonnages transported to Woodlawn.

The EfW Policy set out a range of objectives and criteria for feedstock destined for an EfW project. These include to:

- Promote the source separation of waste where technically and economically achievable.
- Drive the use of best practice material recovery processes.
- Ensure only residual from genuine resource recovery operations are eligible as a feedstock for an ERF.

The EfW Policy, at Table 1, outlines the proportion of each waste type that can be processed through an ERF based on the presence of source separated collections systems. For example, there is no limit on the percentage of residual waste allowed for energy recovery for Councils with separate food organic and garden organic (FOGO) collection systems, whereas a Council with only dry recyclables collection can only process 25% of their residual waste through an ERF.

Woodlawn receives a combination of MSW and C&I waste, and at present none of the Councils that deliver waste to the Woodlawn Bioreactor via the Clyde and Banksmeadow Transfer Stations have a FOGO service. Therefore, based on the criteria above, only 40% of residual MSW currently waste being delivered to Woodlawn will be eligible for processing through the ARC, and the remainder will continue to be landfilled. However, with the potential transition by Councils to FOGO services, this will then enable 100% of the residual MSW to be processed at the ARC. All Councils currently delivering MSW to the Clyde and Banksmeadow Transfer Terminals have in place kerbside recycling collection systems which remove a significant portion of the plastic, glass, metal and liquid paperboard (LPB) containers from the waste stream at source. The NSW Container Deposit Scheme, in operation since December 2017, has removed much of the polyethylene terephthalate (PET), aluminium and LPB from the recycling stream and the residual waste stream.

Further, only 50 % of C&I is permitted as it would be challenging to show the requisite "separate collection systems" for all of Veolia's C&I customers as required under the Policy. Over the course of the past decade as a result of waste separation initiatives an increasing number of C&I businesses have implemented separate collections for paper and cardboard, metals and plastics - delivering a residual waste stream with a lower recoverable content.

The EfW Policy also requires that feedstock for an ERF is sourced from a "processing facility". In this case the two processing facilities are Veolia's Clyde and Banksmeadow Transfer Terminals. At each of these locations, incoming waste is processed prior to packing into containers for rail transport to Woodlawn.

These transfer stations sort the incoming wastes into a range of waste streams including:

- removal of large and bulky items including mattresses and furniture;
- separation of readily recyclable materials such as bricks, concrete and large metal objects;
- removal of household gas bottles and other pressure vessels;
- separation of garden organics and/or FOGO, for processing at the Woodlawn MBT;
- residual MSW with high organic content for processing at the MBT; and
- remaining residual MSW and C&I for disposal at the Bioreactor landfill.

Each container is packed and transported via Crisps Creek IMF to the appropriate destination at the Eco Precinct, being either the MBT or the Bioreactor.

Waste consigned as feedstock to the ARC will comprise:

- Residual MSW that is not contracted to be processed at the MBT and is therefore destined for landfill. In compliance with the EfW Policy this will comprise no more than 40% by weight of the MSW processed at either transfer terminal, unless the Council has a FOGO service, in which case 100% could be processed at the ARC.
- Residual C&I which is not fit for the MBT. This will comprise no more than 50% of the C&I processed at each transfer terminal, in accordance with the EfW Policy.

Additional processing will occur at the transfer terminals to separate waste streams for the ARC, comprising residual MSW and C&I with high calorific content.

As noted above, the project does not propose to change the types of waste or total tonnages transported to Woodlawn, nor the modes of transport.

Given that the feedstock for the ARC will otherwise be landfilled, as currently occurs, this project aligns with both the waste hierarchy and Government policy by diverting waste from disposal at landfill to a higher order use, being the recovery of energy.

3.2.4 ARC water use

The ARC is estimated to require in the order of 6,000 m³ of water per month, depending on the technology selected for the project. Water will be sourced from potable water supplies and processed through a demineralising plant prior to being used in the steam cycle process. Veolia also holds other groundwater extraction licences which may be used if required. The Woodlawn Eco Precinct is a zero discharge site and there is no proposal to discharge water as a result of the project.

3.2.5 Ancillary infrastructure

The ARC will require ancillary infrastructure including waste feedstock container handling and storage area, administration buildings, facilities, education centre, landscaping and stormwater and drainage infrastructure.

3.3 Ash management

As described in Section 3.1, the combustion of feedstock in the ARC results in a proportion of residual incombustible materials that are recovered during the process:

- IBA – non-combustible material such as stones, grit, glass and rocks, which can be processed into aggregates for use in the construction industry as an alternative to raw materials;
- APCr – fine particulates, which are filtered, captured and managed on site; and
- ferrous and non-ferrous metals – recovered from the bottom ash; these metals will be collected and recycled.

Management of the IBA and APCr are described in further detail below.

3.3.1 IBA

Bottom ash, also referred to as incinerator bottom ash (or IBA) comprises non-combustible material remaining after the combustion process. This can include materials such as ash, stones, grit, glass and rocks. Approximately 20% of the original waste by weight remains as IBA. It is discharged through an ash quencher to reduce the temperature of the ash and transferred to an ash handling hall by a series of conveyors. Typically this material is consolidated into stockpiles stored and matured for a period of up to 3 months prior to reuse and repurposing. A conceptual IBA maturation area is included as part of the project, shown in Figure 3.2.

The preferred use for bottom ash materials is reuse as aggregate material for the construction industry. However this industry is in its infancy in Australia and the economics of recycling are yet to mature. Consequently there may be a requirement for these materials to be disposed on site initially, depending on the commercial and regulatory frameworks in place for recovery of bottom ash at the commencement of operations.

The reuse of IBA will require stockpiling of this material at the IBA maturation area, and eventual transport offsite for reuse. The EIS will provide a description of the proposed extraction, maturation, and reuse options and/or disposal regime for IBA.

3.3.2 APCr

As described in Section 3.2.2, APCr will be captured through the flue gas treatment system. The project currently intends to manage the APCr within the Eco Precinct. The option under consideration is the development of an encapsulation cell within the Eco Precinct, and this, and other options, will be further considered in the EIS. This could involve stabilisation of the APCr and encapsulated within a dedicated fully lined and engineered landfill cell. The current conceptual location for the encapsulation cell is presented in Figure 3.1. The proposed management and disposal approach for the APCr will be described and assessed in the EIS.

3.4 Utilities and services

A dedicated substation will be constructed as part of the project as indicated on Figure 3.2 to export electricity to the grid. Export of power to the grid will occur via distribution and/or transmission lines. There are two existing distribution/transmission lines which transport electricity to the grid from existing operations at the Eco Precinct, both owned and operated by third parties. These service the existing substation shown in Figure 3.2, and separately, the Woodlawn Windfarm. Veolia will complete enquiries with owners of the existing lines and utility providers regarding the capacity of the distribution/transmission network to determine whether any upgrades are required, and if so, who will be responsible for those works. Given this, distribution/transmission line corridors and infrastructure are not included in this SSD application.

Any required upgrades to site services will be described and assessed in the EIS.

3.5 Transport

Waste feedstock will be transported to site in accordance with current approvals. As described in Section 1.3, the Crisps Creek IMF forms an integral part of the logistical operations of the Eco Precinct, and is located 7 km by road in the township of Tarago, adjacent to the Goulburn-Bombala Railway line. Waste containers transported from the Sydney region via rail are unloaded and transferred onto road trailers at the IMF for transport to the Bioreactor. The IMF is approved to accept 1,180,000 tpa of waste from Sydney via the Banksmeadow and Clyde transfer terminals to the IMF. The project will not result in the generation of new transport movements associated with transporting waste feedstock to the Eco Precinct for management.

The project will include construction of a new access road and intersection with Collector Road, to provide direct access to the ARC. The access road will include additional weighbridges as well as parking facilities. The location of the proposed site access road and intersection is shown in Figure 3.2.

Additional traffic movements may be generated by transport of by-products from the ARC for off-site re-use, primarily of IBA, as well as the delivery of reagents for the flue gas treatment process. This will be described and assessed in the EIS.

3.6 Construction staging

The construction of the project is expected to be undertaken over a period of three years. A detailed construction method and schedule will be presented in the EIS, however construction staging is likely to include:

- initial site preparation works, establishment of construction access roads, compounds, laydown areas and other infrastructure – 6 months;
- construction of the EfW building and associated site infrastructure – 2 years;
- commissioning and testing – 6 months; and
- landscaping and demobilisation – 2 months.

The construction phase of the project is expected to generate up to 300 jobs, the majority of which are expected to be generated in the Goulburn region.

3.7 Related development

As discussed above, transmission infrastructure to the site is not include in this application. There may be a requirement to upgrade transmission infrastructure to the site to cater for the project, however this has yet to be fully defined. Any upgrade to transmission infrastructure, if required, would be the subject of a separate application.

4 Statutory context

4 Statutory context

4.1 Approval pathway for the project

The EP&A Act defines the statutory framework for planning approval and environmental assessment in NSW. The EP&A Act is administered by the Minister for Planning and Public Spaces, statutory authorities, and local councils.

Part 4 of the EP&A Act relates to development assessment and Division 4.7 relates specifically to State Significant Development (SSD). The project is classified as SSD under the EP&A Act as it is development that requires consent, and is type of development listed in Schedule 1 of the State Environmental Planning Policy (State and Regional Development) 2011, namely it meets the definition of both 'Electricity generating works and heat or co-generation' (clause 20) and 'waste and resource management facilities' (clause 23) under Schedule 1.

Clause 20 defines development for the purposes of electricity generating works and heat or co-generation, namely:

20 Electricity generating works and heat or co-generation

Development for the purpose of electricity generating works or heat or their co-generation (using any energy source, including gas, coal, biofuel, distillate, waste, hydro, wave, solar or wind power) that—

(a) has a capital investment value of more than \$30 million...

The proposal will generate 39 MW of electricity and has capital investment value of greater than \$30 million.

Clause 23 defines development for the purposes of waste and resource management facilities:

23 Waste and resource management facilities

...

(3) Development for the purpose of resource recovery or recycling facilities that handle more than 100,000 tonnes per year of waste.

(4) Development for the purpose of waste incineration that handles more than 1,000 tonnes per year of waste.

The project is for the purposes of resource recovery and involves the incineration of waste, and will handle approximately 380,000 tpa of waste through the plant.

Therefore, the project is SSD and approval is sought under Part 4, Division 4.7 of the EP&A Act. The consent authority for SSD is either the Minister for Planning and Public Spaces or the Independent Planning Commission.

An application for an SSD project must be accompanied by an EIS prepared in accordance with the EP&A Regulation and the Secretary's Environmental Assessment Requirements (SEARs) for the project. This scoping report accompanies a request for SEARs for the project.

A summary of relevant legislation (including planning instruments) and the permissibility of the project is provided in the following sections.

4.2 Permissibility

The relevant local planning instrument applying to the project is the Goulburn Mulwaree Local Environmental Plan 2009 (GM LEP). Under the GM LEP the project is best defined as a ‘waste or resource management facility’:

waste or resource management facility means any of the following—

- (a) a resource recovery facility,
- (b) a waste disposal facility,
- (c) a waste or resource transfer station,
- (d) a building or place that is a combination of any of the things referred to in paragraphs (a)–(c).

The following definition is relevant to the project in the dictionary of the GM LEP:

waste disposal facility means a building or place used for the disposal of waste by landfill, incineration or other means, including such works or activities as recycling, resource recovery and other resource management activities, energy generation from gases, leachate management, odour control and the winning of extractive material to generate a void for disposal of waste or to cover waste after its disposal.

The project is defined as a waste disposal facility under the GM LEP, as it is for the purpose of a building or place used for the disposal of waste by incineration for the purposes of resource recovery and energy generation.

Under the GM LEP, the project is located on land zoned IN3 Heavy Industrial. Land use zoning is shown on Figure 4.1. Development for the purposes of a waste disposal facility is permissible with development consent in the IN3 heavy industrial zone. Therefore the project is permissible under the relevant local planning instrument.

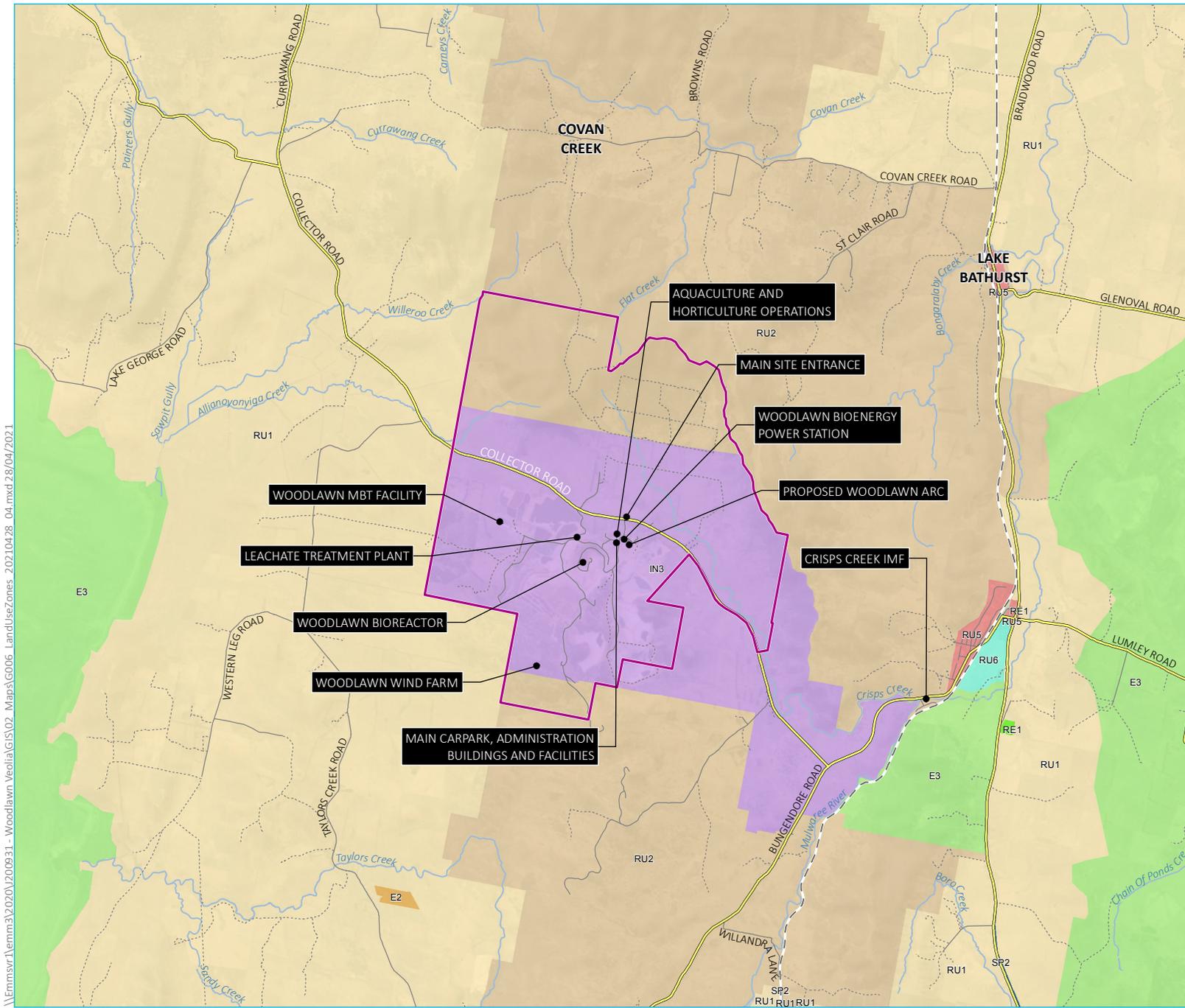
The development is likely to be subject to the Goulburn Mulwaree Local Infrastructure Contributions Plan 2021, or alternatively under a Voluntary Planning Agreement (VPA).

4.3 Other approvals

Under sections 4.41 and 4.42 of the EP&A Act, certain separate environmental authorisations will not be required for the project, or will be required to be issued consistent with the planning approval granted the project. Each of these separate environmental approvals is considered in Figure 4.1. Further environmental and other approvals may be required in addition to those referred to under section 4.41 and 4.42 of the EP&A Act, and these will be considered and outlined where relevant to the assessment of the project as part of the EIS.

Table 4.1 Permits and approvals under NSW legislation that may be required for the project

Legislation	Relevance to the project	Comment
Approvals not required under Section 4.41		
A permit under section 201, 205 or 219 of the <i>Fisheries Management Act 1994</i>	Unlikely to be required	Impacts to aquatic ecology are not expected as a result of the project.
An approval under Part 4, or an excavation permit under section 139 of the <i>Heritage Act 1977</i>	Unlikely to be required	No known historic heritage sites occur within or in close proximity to the project area. The EIS will consider potential impacts to historic heritage items and identify appropriate management and mitigation measures as required.
An Aboriginal heritage impact permit under section 90 of the <i>National Parks and Wildlife Act 1974</i>	Unlikely to be required	An Aboriginal Cultural Heritage Assessment will be conducted to identify any heritage sites and appropriate management and mitigation measures to be implemented, if required, as part of the project.
A bushfire safety authority under section 100B of the <i>Rural Fires Act 1997</i>	May be required	A search of the NSW Rural Fire Service Bushfire Prone Land mapping tool indicates the project may be on bushfire prone land. The EIS will consider hazards associated with bushfire risk.
A water use approval under section 89, a water management work approval under section 90 or an activity approval (other than a groundwater interference approval) under section 91 of the <i>Water Management Act 2000</i>	May be required	Veolia holds various water licences for the Woodlawn Eco Precinct. If entitlements from these licences are required for the project these will be assessed in the EIS. An assessment of groundwater and surface water will consider potential impacts to water resources as a result of the project, including any groundwater and surface water access licence requirements.
Approvals required to be issued consistently under section 4.42		
An aquaculture permit under section 114 of the <i>Fisheries Management Act 1994</i>	No	The project will not alter current aquaculture activities undertaken at the Eco Precinct.
Approval under section 15 of the <i>Mine Subsidence Compensation Act 1961</i>	No	The project is not within a mine subsidence district.
A mining lease under the <i>Mining Act 1992</i>	No	There are existing mining entitlements related to Heron Resources operations at the Eco Precinct. However, the project does not require a mining lease under the <i>Mining Act 1992</i> .
A production lease under the <i>Petroleum (Onshore) Act 1991</i>	No	The Project does not involve petroleum production.
An environment protection licence (EPL) under Chapter 3 of the <i>Protection of the Environment Operations Act 1997</i>	Yes	An EPL will be required for the project.
A consent under section 138 of the <i>Roads Act 1993</i> (Roads Act)	May be required	A consent is required under section 138 to work on or above a road or to connect a road to a classified road. An approval under section 138 of the Roads Act may be required and will be assessed in the EIS.



- KEY**
- Woodlawn Eco Precinct boundary
 - Rail line
 - Major road
 - Minor road
 - Vehicular track
 - Named watercourse
- Land use zone**
- E2 Environmental Conservation
 - E3 Environmental Management
 - IN3 Heavy Industrial
 - RE1 Public Recreation
 - RU1 Primary Production
 - RU2 Rural Landscape
 - RU5 Village
 - RU6 Transition
 - SP2 Infrastructure

Woodlawn Eco Precinct
land use zoning

Woodlawn Advanced Recovery Centre
Scoping report - request for SEARs
Figure 4.1



\\Emmsvr1\emms3\2020\200931 - Woodlawn Veolia\GIS\02 Maps\G006 LandUseZones_20210428_04.mxd 28/04/2021

Source: EMM (2021); Veolia (2021); DPE (2020); DFSI (2017); GA (2011)



4.4 Consistency with State environmental planning policies

A number of State and regional policies are relevant to the project. Consideration of its consistency with these policies and plans is provided in Table 4.2.

Table 4.2 Consideration of relevant State environmental planning policies

Policy	Comment
State Environmental Planning Policy (State and Regional Development) 2011, Schedule 1 State significant development – general	The proposal is SSD under clauses 20 and 23 of Schedule 1 to the State Environmental Planning Policy (State and Regional Development) 2011.
State Environmental Planning Policy No. 33 Hazardous and Offensive Development (SEPP 33)	SEPP 33 applies to development of potentially hazardous industry or potentially offensive industry. It requires the consent authority to consider whether an industrial development is a potentially hazardous industry or a potentially offensive industry. A preliminary hazard assessment will be completed for the project in the EIS.
State and Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 (SDWC SEPP)	The SDWC SEPP requires any development requiring consent in the Sydney drinking water catchment to demonstrate a neutral or beneficial impact on water quality. The potential impacts to surface water and groundwater will be assessed as part of the EIS, including requirements of the SDWC SEPP.
State and Environmental Planning Policy No. 55 - Remediation of Land	State Environmental Planning Policy No 55—Remediation of Land requires all developments requiring consent to consider the possibility of land contamination and address any increased likelihood of contamination in accordance with the accompanying guidelines. Given the historic operations at the site, a preliminary site investigation will be completed as part of the EIS.
Goulburn Mulwaree Development Control Plan	Clause 11 of the SRD SEPP states that development control plans do not apply to SSD.

4.5 Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the primary Commonwealth legislation that governs protection of the environment and is administered by the Department of Agriculture, Water and the Environment (DAWE). Part 3 of the EPBC Act states that an action that has, will have or is likely to have a significant impact on a Matter of National Environmental Significance (MNES), may not be undertaken without prior approval. A search of the Commonwealth’s protected matters search tool was used to generate a list of MNES or other matters protected by the EPBC Act likely to occur within the Project area. The protected matters search identified matters of national environmental significance including two threatened ecological communities, 36 listed threatened species and 13 migratory species within a 5 km radius of the project.

The Eco Precinct is highly disturbed from current and historic activities. The project will require only minor disturbance of existing vegetation. Due to the highly disturbed nature of the Eco Precinct, significant impacts to matters of national environmental significance are not expected. Notwithstanding, an assessment of biodiversity impacts and consideration of MNES will be included in the EIS.

5 Engagement

5 Engagement

5.1 Woodlawn Eco Precinct community engagement

Veolia has operated the Woodlawn Eco Precinct for nearly 20 years and prides itself on being a respectful and valuable contributor to the local community. Community and stakeholder engagement began early with Veolia's acquisition of the former mining operations, with the intention to rehabilitate the degraded mine site. The CLC was established for the initial Woodlawn Eco Precinct around this time. Since its inception the CLC has played an important role in providing regular community engagement with quarterly meetings. Minutes from these meetings are available on Veolia's Woodlawn website (www.veolia.com/anz/our-services/our-facilities/landfills/woodlawn-bioreactor-facility).

Further to establishment of the CLC, Veolia has contributed approximately \$12 million to the local community through the Veolia Mulwaree Trust. A further \$6 million has been paid to the Goulburn Mulwaree Council in host fees and road upgrades and maintenance contributions since 2004 and \$3 million to Queanbeyan Palerang Council towards road upgrades. The Eco Precinct receives more than 2,500 visitors each year from local school and university groups, local community groups, academics and industry peers.

5.2 Project community engagement plan

Veolia believes that effective communication and engagement activities with the community are vital to the full understanding and successful delivery of the Woodlawn ARC and has committed to engage the community and stakeholders throughout the planning process for the project.

A Community Engagement Plan (CEP) has been developed to provide a framework for ongoing engagement as a part of Veolia's commitment to engagement for the Eco Precinct, specifically for the project's planning and approvals process.

To ensure meaningful engagement on the project, Veolia is building on its regular ongoing engagement through the Woodlawn CLC and more than 20 year history of engagement, which has led to well established relationships with the local community, landholders and other local stakeholders. In engaging with its stakeholders, Veolia will maintain and build upon existing relationships by:

- delivering an EIS which meets government requirements relating to EIS engagement outlined in the *Exhibition Draft Undertaking Engagement Guide for State Significant Projects* (DPIE 2020) (Engagement Guidance); and
- maintaining Woodlawn's social licence to operate by undertaking a social impact assessment (SIA) in line with the *Social Impact Assessment Guideline for State Significant Projects* (DPIE 2020) (SIA Guideline).

The ARC CEP has been developed to support the project team in delivering the following outcomes:

- afford meaningful involvement of key project stakeholders, by disseminating information on the project, as well as gathering input to inform the project design, SIA and relevant technical studies;
- build and strengthen relationships between key stakeholders and Veolia; and
- facilitate internal and external stakeholder confidence that the design of the project has been carefully considered, and that its environmental, social and economic effects have been comprehensively assessed.

Following the intent of the Engagement Guidance (DPIE 2020), Veolia has embarked on early stakeholder engagement for the project and will continue this throughout the planning and impact assessment process.

The CEP is a dynamic document and will be revised upon receipt of the SEARs and during preparation of the technical studies as a part of the EIS. The scope and intent of the CEP is to:

- provide a comprehensive stakeholder engagement matrix that identifies the individuals, special interest groups, local councils and government agencies with an interest in or likely to be affected by the project;
- describe methods of engagement that outline how the project intends to engage with the community and consequently:
 - what opportunities to participate in during the preparation of the EIS; and
 - how the community feedback will be considered and documented;
- provide comprehensive information about the project to local and regional communities;
- continue fostering working relationships and open lines of communication between the project team and the community; and
- more importantly, giving the community opportunities to voice their concerns or share local knowledge so these can inform the early planning, design and assessment process.

Veolia expects that successful implementation of the CEP will enable the community to:

- engage and understand the project from the planning and design stages;
- provide feedback on the features of the project that are supported, not support, or required to be adjusted;
- provide the rationale for concerns to enable Veolia to consider possible alternative approaches to address any issues; and
- provide a clear indication of any matters the community feels have not been considered or addressed.

Implementation of the CEP has commenced with several activities summarised in Table 5.1.

5.3 Early engagement for the project

The CEP reflects the Engagement Guidance (DPIE 2020) and SIA Guideline (DPIE 2020) requirements for community engagement related to environmental impact assessments for SSD projects. The Engagement Guidance and SIA Guideline provide instruction regarding the management and implementation of community and stakeholder engagement throughout a project's planning and approvals process, including the appropriate identification of potentially impacted people and groups, the methods of engagement to be undertaken, timing of consultation and feedback mechanisms.

As part of the early engagement process, the project team has established a number of community-facing channels to allow local people to find out more about the project and to provide feedback or ask questions. These channels include:

- A website (www.veolia.com/anz/TheArc) to provide project information as well as opportunities to engage with the project team.
- A dedicated community information line (1800 313 096) available 24 hours a day, seven days a week, has been established.
- Community members and stakeholders can also contact the project team via email (thearc@veolia.com) or post correspondence to PO Box 171 Granville NSW 1830.

The website encourages community members to sign-up to a mailing list where news alerts will be shared as they happen. These are means to ensure the community can participate in a meaningful way, be involved in the process and provide input to the design of the proposal, rather than just being informed about it.

In addition to establishing community channels, the project team has also held a Community Open Day, to allow local people to visit the Woodlawn site, find out more about the ARC project, meet the project team and go on a site tour. It was also an opportunity for people to ask questions and provide direct feedback to the team about their thoughts on the project.

This has been supported by a program of doorknocking immediate neighbours to ensure they are fully aware of the project and have direct access to technical experts able to answer questions they may have about the project.

The team has also undertaken a series of face-to-face briefings with local elected leaders and community representatives. This has included site tours, presentations and briefing packs. The project has been promoted through a media release and CEO interviews with two local media outlets (The Goulburn Post and 2GN).

An overview of all early engagement activities that are underway can be found in Table 5.1.

Table 5.1 Engagement activities underway

Stakeholder group	Stakeholder	Method and purpose of engagement	Date of engagement
Elected Representatives (State and Federal)	Mrs Wendy Margaret Tuckerman, MP, Member for Goulburn	Meeting with Veolia to introduce the project	11 March 2021
	Office of Mrs Wendy Margaret Tuckerman, MP, Member for Goulburn	Meeting with Veolia to introduce the project	14 April 2021
	Ms Kate Rebecca Washington, MP, Shadow Minister for Environment and Heritage, and Shadow Minister for Rural Health	Meeting with Veolia to introduce the project	19 March 2021
	- House of Representatives Standing Committee: Industry, Innovation, Science and Resources - House of Representative Standing Committee: Environment and Energy - NSW Portfolio Committee No. 6 - Planning and Environment NSW - Legislative Assembly Committee on Environment and Planning - Legislative Assembly Committee on Investment, Industry and Regional Development	Written briefings sent to each Committee to introduce the project	25 March 2021
	Hon (John) Giovanni Domenic Barilaro, MP, Deputy Premier, and Minister for Regional New South Wales, Industry and Trade	Meeting with Veolia to introduce the project	1 April 2021
	Hon Angus Taylor, MP, Minister for Energy and Emissions Reduction	Meeting with Veolia to introduce the project	15 April 2021
	Office of Hon Gladys Berejiklian, MLA, Premier of NSW	Meeting with Advisor for Veolia to introduce the project	30 April 2021
	Office of Hon Matthew Kean, MLA, Minister for Energy and Environment	Meeting with Deputy Chief of Staff for Veolia to introduce the project	10 May 2021
Mr James Henry Griffin, MP, Parliamentary Secretary for the Environment	Meeting with Veolia to introduce the project	22 April 2021	

Table 5.1 Engagement activities underway

Stakeholder group	Stakeholder	Method and purpose of engagement	Date of engagement
State Government	DPIE – Sally Munk and Chris Ritchie EPA – Nick Fernley, Anthony Savage, and Charles Hajek NSW Health – Kishen Lachireddy, Tabitha Holliday, and Kelly Main	Meeting with Christine Hodgkiss, Lee Smith and Henry Gundry from Veolia to introduce the project, including approvals timeframe, community engagement and key issues (air quality and human health risk)	11 March 2021
Local Government	Goulburn Mulwaree Council - Cr Bob Kirk, Mayor and Warwick Bennett, General Manager	Veolia briefed the Mayor and General Manager on 12 February and attended a closed meeting with the Council on 16 March to introduce the project	12 February and 16 March 2021
	Queanbeyan Palerang Regional Council briefing - Peter Tegart (CEO), Tim Overall (Mayor), Phil Hansen (Portfolio General Manager, Community Connections), Gordon Cunningham (Services Manager, Utilities)	Meeting with Veolia (via Google meet) to introduce the project	7 April 2021
Community	Community Liaison Committee (CLC) meeting	Veolia attended the regular CLC meeting to introduce the project. A community brochure was provided, and Veolia agreed to present at a subsequent meeting with Tarago and District Progress Association Inc. (TADPAI)	18 March 2021
	Boomerang Alliance	Meeting with Veolia to introduce the project	19 March 2021
	Tarago and District Progress Association Inc. (TADPAI)	Presentation by Veolia to introduce the project, respond to queries and concerns and discuss potential impacts and benefits	22 March 2021
	Residential neighbours and landholders	Letter issued to 292 households in Tarago locality with project information and invitation to Community Open Day. Project team members held a number of face to face meetings with immediate neighbours	31 March 2021 17, 27 and 28 April 2021
	Local community	Community Open Day. Project flyers also distributed in high footfall points across Tarago	18 April 2021
	Woodlawn employees	Toolbox Talk to brief employees on the ARC	18 April 2021
	Commercial neighbours	Key businesses in Tarago have received a briefing and carried flyers to promote the Community Open Day	w/c 11 April 2021

Table 5.1 Engagement activities underway

Stakeholder group	Stakeholder	Method and purpose of engagement	Date of engagement
Media	Local media	Press release issued and Veolia CEO undertook two interviews with local media outlets	22 March 2021
	Tarago Times	Veolia placed an article in local community newsletter to promote the ARC project and invite feedback	1 April 2021

A variety of engagement tools and project collateral have been developed to support community engagement activities for the project, a description of each is provided in Table 5.2.

Table 5.2 Stakeholder engagement tools for the project

Engagement tool	Description	Utilised in scoping phase
Project brochure	A project brochure to introduce the proposed Project, provide a map, summary of planning and approvals process and invitation to participate in consultation process.	Provided to stakeholders and community members at briefing meetings and the Community Open Day. Also available on the website and posted when requested.
Letters/emails/letterbox drops	Letters and emails sent to potentially impacted stakeholders inviting people to meetings or information sessions. The project has a dedicated email address and PO box for incoming queries and feedback.	Letters and emails have been sent throughout the scoping phase and as outlined in Table 5.1.
ARC website	www.veolia.com/anz/TheArc provides information regarding the project	The Veolia website has a dedicated section for the ARC, and is regularly updated to reflect latest project information and responses to FAQs from the local community and stakeholders.
1800 number	A 24/7 project phonenumber to allow local people and stakeholders to speak to a member of the project team	The 1800 number has been live since 15 March 2021 and has been promoted through community notifications and advertising.
Face to face meetings (Video conferencing /teleconferencing)	Meetings with directly impacted stakeholders to introduce the project, advise of the planning process, and discuss potential project impacts.	Project team members held meetings with immediate neighbours on 17, 27 and 28 April 2021.
Community information / drop-in sessions	Informal community events and meetings attended by members of the community and the ARC Project team to discuss the Project.	A community information session was held during the scoping phase on 18 April 2021. Subsequent sessions will be scheduled to provide information and opportunities for engagement during 2021 and 2022.

Table 5.2 Stakeholder engagement tools for the project

Engagement tool	Description	Utilised in scoping phase
CLC meetings	Regular CLC meetings	An initial presentation to the CLC took place on 18 March 2021 to introduce the project, address questions and concerns and open the new channels of communication and consultation for the ARC project.
Site visits and project briefings	Site visits and briefings program for stakeholders	A number of site visits and project briefings have taken place as part of early engagement with both stakeholders and the local community.
Advertising	Media release, interviews, community newsletters and flyers	Veolia has promoted the project through engagement with the local media and has also placed project information in local newsletters and via flyers in key Tarago businesses.

5.4 Stakeholder views

Early engagement has included positive feedback as well as some specific local concerns. Stakeholders recognise the economic value of the project and the benefits that will flow to the region, as well as the ARC’s place in sustainable waste management hierarchy. Local people have a range of views, with most people recognising that the project will deliver jobs and growth for the area, but with concerns about how the environmental impacts will be managed, in particular air quality and odour. A summary of the key matters raised during early engagement is below, alongside Veolia’s initial response to that feedback.

Table 5.3 Stakeholder views during early engagement and Veolia’s response

Issue	Description	Veolia response
Project scope and description	<ul style="list-style-type: none"> Positive feedback on the reduction of landfill use and the production of energy. Some concerns around the way the project is described, including social and environmental benefits. 	We are pleased the people recognise the role of the ARC in sustainable waste management. We have listened to local people’s feedback about the way the project is described and will amend our language when talking with the community and members of the public to better reflect terminology that lay people would use.
Economic and social benefits	<ul style="list-style-type: none"> Positive feedback about jobs creation, opportunities and sourcing. Local people want to understand how Tarago will benefit from jobs and economic opportunities. People would like more information on how the Veolia Mulwaree Trust works. 	Veolia is committed to ensuring as many of the economic and social benefits of the project will be felt by the people living nearest to the facility. We will use local businesses in the construction supply chain and where possible seek to employ local people in both permanent and apprenticeship roles. We will explain more about the economic and social impacts throughout the planning process and will also provide more information about how the Veolia Mulwaree Trust operates as part of that engagement.

Table 5.3 Stakeholder views during early engagement and Veolia’s response

Issue	Description	Veolia response
Air Quality	<ul style="list-style-type: none"> • Requests for further information on the EfW technology and air pollution controls proposed for the project. • Concerns that the project will be burning tyres or plastic. • Concerns about use of diesel fuel to achieve necessary combustion temperatures. • Concerns about health impacts from a change in air quality in local area 	<p>Veolia is a global expert in sustainable waste management and operates 65 energy from waste facilities globally. EFW technology is safe and proven. Based on feedback from early community engagement, we increase the amount of information we had available on how energy from waste technology works in our early engagements. As we move through the planning process, we will undertake more community information sessions to explain the technology, demonstrate how air quality will be monitored and managed, and the role of the Environment Protection Authority in providing independent oversight and regulation on environmental impacts from the ARC.</p>
Traffic and Transport	<ul style="list-style-type: none"> • Concerns about increased numbers of trucks in Tarago and impact on local traffic 	<p>The ARC project will operate within the existing approved annual inputs. A full traffic management assessment will be carried out as part of the EIS assessments, and a number of options reviewed.</p>
Odour	<ul style="list-style-type: none"> • Odour from existing landfill operations is a major concern for the local community. People are keen to understand how odour would be managed with the ARC. 	<p>Veolia recognises that odour from existing operations is a concern for some people living nearby and is committed to reducing odour impacts as much as possible..</p>
Project site location and benefits	<ul style="list-style-type: none"> • Positive feedback about the initial design and the fact that the facility will not have a major visual impact on the local area. • Some local feedback that Sydney’s waste should be dealt with in Sydney. 	<p>Veolia has a strong track record of building aesthetically pleasing energy from waste facilities. We will continue to seek feedback from local people on the design.</p>
Potential environmental and social impacts	<ul style="list-style-type: none"> • Request for more information on how the technology works and residual waste managed. • Request for more information on proposed impact management. 	<p>In response to initial feedback from the CLC and TADPAI, Veolia hosted a Community Open Day which included detailed information on how energy from waste technology works. We will continue to share this information in multiple channels, and we will also share information about how impacts will be managed as we move through the planning process.</p>
Water usage	<ul style="list-style-type: none"> • Water usage impact on ground water supplies 	<p>This was very useful feedback to receive from our neighbours and we will ensure that water usage impact is addressed as part of our impact assessments and management methods communicated to the local community.</p>
Property prices	<ul style="list-style-type: none"> • Some residents are concerned about the potential for property price impacts from the project 	<p>The economic impacts of the project will be assessed through the Economic Impact Assessment in the EIS.</p>

Table 5.3 Stakeholder views during early engagement and Veolia’s response

Issue	Description	Veolia response
Community engagement during the approvals process	<ul style="list-style-type: none"> Local people particularly appreciated the opportunity to tour the site as part of the Community Open Day. Local residents are keen to have further opportunities to learn more about the project and provide further feedback. 	Veolia will be creating ongoing opportunities for people to find out more about the project as the planning application progresses (further detail in 5.5). In response to initial feedback, Veolia chose to host a Community Open Day and will arrange at least four community information events during the pre-EIS stage before going to public exhibition of the EIS.

5.5 Further engagement proposed

Veolia has committed to its stakeholders that ongoing community consultation will be undertaken, including communication of the outcomes of technical assessments throughout the development and implementation of the project. A summary of engagement opportunities to be implemented throughout the development of the EIS is provided in Table 5.3.

Table 5.4 Further engagement proposed

Engagement tool	Description
Face to face meetings	<p>Meetings with directly impacted stakeholders and immediate neighbouring landholders to provide project updates and cultivate ongoing collaborative relationships within the community, through continued identification of issues and areas of concern.</p> <p>Targeted meetings with local councillors, and key local and state MPs will ensure successful stakeholder engagement and participation.</p>
Briefings at CLC meetings	Regular bi-monthly briefings will be provided to the CLC to provide information on technical report findings, updates on EIS progress, updates on community engagement activities and sentiment and other project updates.
Community newsletters and factsheets	Community newsletters will be distributed as the project progresses to provide project updates, and EIS progress updates including findings of technical studies as they become available.
Community information sessions	Community information sessions will be held to provide the community with the opportunity to engage directly with the ARC project team, learn about outcomes from technical studies and provide feedback. Veolia will also host more community open days to allow local people to visit the site as part of the wider engagement during the planning process.
Project community information line and website	The hotline and website will be available 24 hours a day and seven days a week to provide members of the community with project relevant information as well as another means to provide feedback and express concerns.

6 Proposed assessment of impacts

6 Proposed assessment of impacts

Preliminary environmental investigations have been carried out to identify the relevant matters to be addressed in the EIS, and the required level of assessment.

The preliminary impact identification and assessment has been informed by the draft *Preparing a Scoping Report – State Significant Development Guide Exhibition Draft* (DPIE 2020). The process included:

- consultation with DPIE and key stakeholders (see Chapter 5);
- identifying and characterising relevant matters for assessment, including appraisal of likely environmental and social impacts using the guidance in *Preparing a Scoping Report – State Significant Development Guide Exhibition Draft* (DPIE 2020); and
- reporting the outcomes of that assessment in this scoping report.

A scoping table is presented in Table 6.1.

Table 6.1 Woodlawn ARC scoping table

Matter	Key factors – scale, nature and sensitivity of receiving environment	Cumulative impacts?	Level of assessment
Air quality and odour	<p>The project will generate air quality emissions during construction and operation. Dust emissions during construction will be managed with the implementation of mitigation measures. The ARC will operate in accordance with relevant regulations and compliance criteria. The ARC includes an APC system to manage air quality emissions during operation, as well as continuous emissions monitoring.</p> <p>The project will be assessed in the context of existing approved operations, which will include assessment of cumulative air quality and odour emissions. Existing operations will form part of the baseline environment.</p> <p>The receiving environment includes sensitive receptors surrounding the Eco Precinct (rural properties and homesteads) and the township of Tarago to the east. Given the concerns from local stakeholders during engagement, the sensitivity of the receiving environment is considered to be high.</p>	Yes – with existing Eco Precinct operations	Detailed
Human health risk	<p>The project is an ERF and will be required to meet current international best practice techniques to ensure air quality emissions are below levels that may pose a human health or environmental risk.</p> <p>It is anticipated that the air quality emissions from the project and potential for human health risks will be a key issue of concern for all stakeholders, and in particular, sensitive receptors surrounding the Eco Precinct and in nearby towns. Given the concerns from local stakeholders during engagement, the sensitivity of the receiving environment is considered to be high.</p>	Yes – with existing Eco Precinct operations	Detailed
Greenhouse Gas Emissions	<p>The project is likely to have greenhouse gas benefits in two ways; by avoiding landfilling of waste which can generate methane emissions, and by generating a low carbon energy which will lower the average carbon content of electricity in the NSW grid.</p>	Yes – with existing Eco Precinct operations	Standard

Table 6.1 Woodlawn ARC scoping table

Matter	Key factors – scale, nature and sensitivity of receiving environment	Cumulative impacts?	Level of assessment
Noise and vibration	<p>The project will generate noise during construction and operation.</p> <p>The project will be assessed in the context of existing approved operations, which will include assessment of cumulative noise emissions. Existing operations will form part of the baseline environment.</p> <p>The receiving environment includes sensitive receptors surrounding the Eco Precinct (rural properties and homesteads) and the township of Tarago to the east.</p> <p>The sensitivity of the receiving environment is considered to be moderate.</p>	Yes – with existing Eco Precinct operations	Standard
Traffic and transport	<p>The project will generate traffic during construction and operation. The project will require the construction of a new site access road and intersection with Collector Road.</p> <p>Operation of the project will not alter the existing volumes or modes of transport for waste being brought to the Eco Precinct. Operational traffic generation will be associated with the transport of IBA from the Eco Precinct for reuse in the construction industry.</p> <p>The suitability of the local road network to accommodate the additional traffic will be assessed. The sensitivity of the receiving environment is considered to be moderate.</p>	Yes – with existing Eco Precinct operations	Standard
Visual	<p>The project is in a highly modified location within the Eco Precinct, which is an established heavy industrial land use, and has a history of mining operations prior to its current use for waste management and resource recovery.</p> <p>The proposal will result in new visual characteristics and infrastructure at the Eco Precinct that will be different in form and scale to the existing site features and surrounding environment. It will also incorporate a tall stack, in the order of 60-100 m in height that will be visible from surrounding areas, however will sit within the context of the existing wind turbines from Woodlawn Wind Farm, which will exceed the height of the stack.</p> <p>There will be some changes to the visual amenity and landscape character of the area immediately surrounding the ARC, however the sensitivity of the receiving environment is considered to be low.</p>	Yes – with existing Eco Precinct operations	Standard
Biodiversity	<p>The project may require disturbance to a small, fragmented area of vegetation. Due to the nature of existing operations and prior disturbance of the project footprint, the sensitivity of the receiving environment is considered to be low.</p>	No	Minor
Heritage	<p>There are no known or identified Aboriginal or historical heritage sites located within the project footprint. Due to the nature of existing operations and prior disturbance of the project footprint, the sensitivity of the receiving environment is considered to be low.</p>	No	Minor
Social	<p>The project is expected to generate some specific local concerns, based on early engagement described in Chapter 5. Stakeholders recognise the economic value of the project and the benefits that will flow to the region, as well as the ARC’s place in sustainable waste management hierarchy. Local people have a range of views, with most people recognising that the project will deliver jobs and growth for the area, but with concerns about how the environmental impacts will be managed, in particular air quality and odour.</p> <p>Given the concerns from local stakeholders during engagement, the sensitivity of the receiving environment is considered to be high.</p>	No	Detailed

Table 6.1 Woodlawn ARC scoping table

Matter	Key factors – scale, nature and sensitivity of receiving environment	Cumulative impacts?	Level of assessment
Hazards and risks	<p>Hazards and risks which have been considered as potentially relevant to the project include bushfire risk and fire safety, hazardous industry and/or offensive development as defined under SEPP 33, land and groundwater contamination, waste, environmental hazards which present a risk to either human health or the environment, flooding risks, land movement associated with mining activities, and biosecurity, such as potential impacts associated with animal and plant pests, diseases and contaminants.</p> <p>The hazards and risks identified will be addressed in the respective technical assessments as relevant. An assessment of hazards and risks in accordance with SEPP 33 and relevant land use based guidelines will be completed.</p>	No	Detailed
Water	<p>The project is within a highly modified site on which water is strictly managed. The project will require a number of elements requiring excavation during construction. These include a waste bunker at the ARC, and dedicated encapsulation cell for APCR management. These have the potential to impact surface water and groundwater.</p> <p>During operation, the ARC will require process water. There is the potential for interactions between water sources within the Eco Precinct that will require consideration during design.</p> <p>Given the Eco Precinct operates within a highly modified water management environment, the sensitivity of the receiving environment is considered to be low.</p>	Yes – with existing Eco Precinct operations	Standard
Waste feedstock availability and management	The project will divert waste from landfill and is considered to be consistent with relevant waste policy and legislation in NSW.	No	Standard
Economic	The project is expected to have positive economic benefits for the local and regional economies. Stakeholders recognise the economic value of the project and the benefits that will flow to the region.	Yes	Standard
Land capability, stability and soils	The project footprint is highly modified and largely devoid of original ground cover. Development of the ARC provides an additional form of waste processing and resource recovery that will complement existing site infrastructure and uses. Geotechnical investigations will be undertaken as part of the design process to determine any ground treatments required to ensure ground stability.	No	Minor
Built environment	The project proposes introduction of an architecturally designed, purpose built energy recovery facility to the Eco Precinct. The ARC will not negatively impact the existing built environment.	No	Not relevant

6.1 Air quality and odour

6.1.1 Existing environment

Veolia undertakes air quality monitoring, including both odour and dust, in accordance with its relevant environmental monitoring programs (EMPs) to determine whether activities conducted at the Eco Precinct, including the Bioreactor, Crisps Creek IMF and MBT, affect ambient air quality. Veolia’s existing operations at the Eco Precinct are subject to stringent EMPs in accordance with the requirements in EPL’s 11436, 11455 and 20476.

Environmental monitoring is completed in accordance with Veolia’s environmental monitoring procedures, which specify the relevant standards and methodologies.

Veolia implements a range of existing controls and operating procedures at the Eco Precinct to minimise odour and dust including:

- all operations and activities are carried out in a manner to minimise dust at the boundary of the premises;
- access roads from the IMF to the Bioreactor and MBT, and the haul road used for ancillary operations are sealed;
- water trucks for dust suppression are used as required;
- monthly sampling is undertaken to monitor for the presence and quantity of depositional dust;
- the active tipping face in the waste void is kept to a minimum surface area to reduce potential fugitive odour emissions;
- a landfill gas (LFG) capture network has been installed and expanded in accordance with the Woodlawn Infrastructure Plan and a biofiltration system is installed along the rock/waste interface to minimise odour emission;
- leachate extraction from the waste is maintained to reduce the impact of leachate on LFG capture, and evaporation of stored leachate is maintained on site to reduce the odour footprint and all leachate from the void is treated via the LTP to achieve higher effluent quality and minimise odour potential;
- all operational buildings at the Woodlawn MBT facility are enclosed and equipped with odour control ducting connected to biofilters; and
- the Bioreactor is operated to maximise the production of landfill gas for generation of renewable energy at the Power Station and plant and equipment meets design, installation and operational requirements within the Bioreactor EPL and other approval requirements.

i Particulate dust monitoring

Air quality monitoring is carried out as required by relevant EPLs to determine whether activities conducted at the Eco Precinct adversely affect ambient air quality. There are currently five licensed dust deposition gauges (DDG) associated with the Eco Precinct operations, all of which are sampled on a monthly basis. Three are associated with the Bioreactor, one associated with the Crisp’s Creek IMF, and one additional gauge is associated with the MBT.

Data collated from these dust deposition gauges was reported in the *Annual Environmental Management Report 2019-20, For Woodlawn Waste Expansion Project and Woodlawn Alternative Waste Technology Project* (Veolia, 2020) (the 2020 AEMR).

Results of total insoluble solids collected at the Bioreactor and IMF’s dust deposition gauges (DDG) (DGs 22, 34, 28 and 18) recorded averages exceeding the long term criteria for dust deposition during the reporting period of November 2019 to December 2020. The 2020 AEMR highlighted this reporting period was impacted by the occurrence of unprecedented weather events including the bushfires of January 2020 and dust storms. There were otherwise no exceedances recorded during reporting period.

The MBT shares two DDGs (DGs 34 and 28) with the Bioreactor and therefore identified the same impacts as highlighted above. DG 33 recorded an average total insoluble solid matter result that was generally consistent with the overall historical records of the location.

The maximum dust level recorded, however, was marginally higher than average. This is consistent with the impact identified previously from the bushfire and dust storms events during the 2020 AEMR reporting period.

ii Odour

Veolia undertakes annual odour audits of the Eco Precinct facilities as required under relevant development consents and approvals. The eighth annual odour audit was completed in 2020 and included the following key audit requirements:

- audit the effectiveness of the odour controls on-site in regard to protecting receivers against offensive odour;
- review production data relevant to the odour audit and complaint records;
- review the relevant odour sections of the Air Quality and Greenhouse Gas Management Plan for the project and assess the effectiveness of the odour controls;
- measure all key odour sources on-site;
- determine whether operations comply with approval requirements to protect receivers against offensive odour;
- outline all reasonable and feasible measures (including cost/benefit analysis, if required) that may be required to manage odour; and
- recommend and prioritise (mandatory and non-mandatory) recommendations for their implementation.

Key odour sources at the Eco Precinct include:

- the Bioreactor, including waste receipt and handling, active tipping face within the void, waste-covered areas, leachate extraction, management and treatment, evaporation dams and landfill gas extraction; and
- MBT Facility operations, including waste receipt and handling, processing, screening, aeration, composting and storage.

The most recent odour audit (The Odour Unit, 2020) also discussed the potential for odour emissions from the Crisps Creek IMF. The audit noted the requirement for all waste containers to be designed, constructed, and maintained to prevent the emission of odour, and be watertight to prevent the leakage of leachate from waste containers during transport and handling activities. This is a condition of consent for the Clyde Transfer Terminal Facility and Banksmeadow Transfer Terminal, which is where the waste containerisation process occurs. The Crisps Creek IMF has accordingly been classified as a very low-risk source for odour emissions. The audit concluded that the IMF is a negligible contributor to the overall odour emissions profile for the Eco Precinct.

From the ongoing community engagement, Veolia is aware of local community concerns regarding odour, and is constantly reviewing operations to minimise impacts.

iii Sensitive receivers

The identification of sensitive receivers in relation to air quality management for current Eco Precinct operations includes:

- homestead properties (approx. 5 km);
- the township of Tarago to the east (approx. 6 km) which includes:

- Tarago Primary School;
 - residential properties; and
 - Tarago recreation area.
- several rural living properties to the south (approx. 12 kms).

Detailed identification of sensitive receivers will be included in the EIS.

6.1.2 Potential impacts

The potential for project related air quality, greenhouse gas and odour impacts include:

i Construction

Increased traffic movements relating to the construction phase of the project and construction related earth movement has the potential to increase dust deposition at the surrounding sensitive receivers.

ii Operation

Operational emissions of pollutants from ERFs and technology are well understood and documented both globally and in Australia. The project includes a flue gas treatment system as part of the project design, discussed in Section 3.2.2. International best practice technologies, with proven emission control capability in accordance with European standards and NSW regulatory requirements, are being investigated to determine which system is best suited to meet the NSW regulatory requirements for the project.

Feedstock for the project is proposed to be diverted from waste streams that will otherwise be landfilled and will be received at the Eco Precinct via the existing Crisps Creek IMF. Odour impact from the IMF is considered negligible and the project will not adversely alter this. The project will comprise a fully enclosed building structure under negative pressure to contain odour related impacts, in particular where waste feedstock is received at the tipping hall and the bunker.

The project is likely to have greenhouse gas benefits. By avoiding landfill, the waste treated in the ARC will not produce landfill gas. At the Woodlawn Bioreactor, landfill gas is captured for power generation, but there remains some fugitive emissions. These will be avoided for waste treated in the ARC. In addition, the carbon content of the electricity produced by the ARC is likely to be lower than the grid average for NSW. By, in part, replacing electricity from coal burning power stations, the ARC will provide greenhouse gas benefits.

Another potential impact is plume rise, which is the impact of the exhaust plume from the stack on aviation activities. An initial review of information from nearby airports indicates that this is unlikely to be an issue, however this will be confirmed during the EIS investigations.

6.1.3 Assessment approach

The proposed scope of works to assess air quality and odour impacts for the project will be in accordance with the *Approved methods for the modelling and assessment of air pollutants in NSW* (EPA 2016) (the Approved Methods).

Based on the potential impacts highlighted in Section 6.1.2 the following methodology is proposed for the air quality impact assessment (AQIA) to meet the likely requirements of the SEARs:

- review available air quality and meteorology data and establish baseline conditions – relevant air quality monitoring data owned by Veolia and the NSW Government will be collated and processed to undertake a detailed analysis and identify intra-annual and inter-annual trends, key monitoring statistics, and data gap analysis;

- undertake detailed meteorological modelling suitable using local and regional inputs for input to an atmospheric dispersion model;
- baseline impact assessment criteria will be established for sensitive assessment locations and private land holdings surrounding the project;
- review topography data and incorporate into the atmospheric dispersion model;
- confirm expected emission parameters and develop modelling scenarios; and
- complete atmospheric dispersion modelling.

Air pollutant calculations for a range of emissions scenarios will likely comprising of the following:

- NSW POEO emission limits regulatory case;
- Draft NSW Energy from Waste Policy case;
- EU BREF emission limits regulatory case;
- reference plant case;
- manufacturers guarantee case- uses manufacturers emissions guarantee;
- expected operational case; and
- an upset conditions case.

Predictions of ground level concentrations of all pollutants and averaging periods will be undertaken. Human health emission requirements will be incorporated into modelling scenarios to ensure relevant outputs from air quality modelling capture the emission requirements to satisfy reporting for the Human Health Risk Assessment.

For a cumulative assessment, the air quality modelling will include quantifying emissions from all existing sources of air pollutants associated with the Eco Precinct and undertake dispersion modelling to understand where any impacts occur.

Odour emissions will be fully quantified including existing emissions from Eco Precinct for inclusion in odour dispersion modelling. An assessment of all cumulative impacts against background air quality will be analysed for predicted compliance.

The project is likely to have greenhouse gas benefits. A greenhouse gas assessment will be presented in the EIS.

6.2 Human health risk

6.2.1 Existing environment

There are currently no requirements with regard to monitoring human health related emissions at the Eco Precinct site.

As described in Section 6.1.1 Veolia has a rigorous monitoring, management and reporting system in place for addressing current air quality issues associated with the Eco Precinct which provide a solid basis for implementation of similar protocols required for the monitoring, management and reporting of human health related emissions from the proposed ARC.

6.2.2 Potential impacts

ERFs must meet current international best practice techniques to ensure emissions are below levels that may pose a human health or environmental risk. It is anticipated that the air quality emissions from the project and potential for human health risks will be a key issue of concern for all stakeholders.

A Human Health Risk Assessment (HHRA) will be completed to assess impacts on human health associated with the project, including addressing the requirements of the relevant EfW Policy Statement to ensure that unacceptable human health or environmental risks are avoided.

6.2.3 Assessment approach

The HHRA will address impacts related to emissions to air from the proposed facility, and will address all pathways by which people may be exposed to pollutants. These include inhalation exposure, as well as ingestion (from water or locally grown foods), and dermal contact. In order to do so it will consider pollutants in the air, as well as deposition to ground and water with a particular focus on drinking water sources (such as roof areas which drain to tanks) and food growing areas.

The scope works associated with development of the HHRA will include evaluation and identification of issues following a comprehensive review of data.

A toxicity and dose response assessment will be conducted to identify the potential human health effects and appropriate quantitative guidelines or toxicity reference values for the chemicals of potential concern.

An exposure assessment will be undertaken to identify and characterise the populations of concern relevant to the nature and extent of emission impacts and the proposed development. Exposure pathways will be outlined and quantified where appropriate. Where relevant, multi-pathway exposures will be addressed for the population of concern.

The findings of the review, toxicity and dose assessment, and exposure assessment will be used to provide a quantitative assessment of health risk from the predicted emissions.

The HHRA is proposed to be undertaken in accordance with the following guidelines:

- *Environmental Health Risk Assessment: Guidelines for Assessing Human Health Risks from Environmental Hazards* (enHealth 2012).
- *Australian Exposure Factors Guide* (enHealth 2012).
- *National Environment Protection (Ambient Air Quality) Measure* (NEPC 2016).
- *National Environment Protection (Air Toxics) Measure* (NEPC 2004).
- The Approved Methods (EPA 2016).

6.3 Noise and vibration

6.3.1 Existing environment

Current project consent conditions provide criteria for which noise emissions emanating from site are required to meet. The 2020 AEMR identifies that current noise emissions from site that potentially could impact nearby sensitive receivers are within the consent condition criteria. Veolia has implemented noise mitigation measures that include:

- waste filling operations occurring below ground level;
- road transport code of conduct;
- waste operations occurring within approved specified hours; and
- acoustic enclosures.

Noise monitoring was identified within the 2020 AEMR as only being required at two locations identified as the closest nearest residences. Operator attended monitoring was undertaken at both locations with noise levels recorded below the 35 dB required criteria.

6.3.2 Potential impacts

Operational noise and vibration impacts are expected to be similar to the existing operations. Additional traffic movements are not required as feedstock has been identified as an existing waste stream already being delivered to site.

Potential construction noise impacts relate to construction of the facility and additional traffic movements relating to the transportation of equipment, materials, and construction crews to site during the construction period.

6.3.3 Assessment approach

A detailed assessment of potential noise impacts will be completed and documented in the EIS. The assessment will consider relevant noise impacts to local receptors within the vicinity of the Project. The assessment will include consideration of the ambient noise environment and potential cumulative impacts posed by Eco Precinct. Results of the assessment and mitigation measures adopted will be documented within the EIS.

A scope of work has been developed to address the identified potential impacts and follow relevant guidelines and policies. The scope of work includes:

- determine ambient noise levels via deployment of noise loggers within proximity of the project;
- establish noise sources and relevant noise outputs of existing equipment that proposed to be utilised by the project;
- undertake noise modelling and assessment, taking into consideration the following:
 - Predictive modelling;
 - operational noise mitigation strategies;
 - potential construction activity impacts; and
 - potential road traffic impacts;

The detailed assessment will be completed with reference to the following guidelines and policies:

- *NSW Noise Policy for Industry (NPfI)* (EPA 2017);
- *Interim Construction Noise Guideline (ICNG)* (NSW Department of Environment Climate Change (DECC) 2009); and
- *Road Noise Policy (RNP)* (NSW Department of Environment Climate Change and Water (DECCW) 2011).

a Vibration

A detailed assessment of potential vibration impacts associated with the Project will be undertaken taking into consideration:

- local receptors in proximity of the Project;
- existing and proposed infrastructure;
- known items of Historic and Aboriginal heritage;
- livestock; and
- cumulative impacts of the Eco Precinct.

The detailed assessment will be completed with reference to *Assessing Vibration: a technical guideline* (Department of Environment and Conservation (DEC) NSW 2006).

The findings of the detailed assessment will be documented within the EIS. The assessment will guide the requirements of the Project and principles to ensure potential vibration impacts are effectively mitigated.

6.4 Traffic and transport

6.4.1 Existing environment

In the vicinity of the Eco Precinct, Collector Road is a sealed single lane road which connects to Bungendore Road to the south-east and the Federal Highway to the north-west. Access to the Eco Precinct is from Collector Road. The local road network is shown in Figure 1.3.

As described in Section 1.3, waste is currently transported to the Eco Precinct via the Crisps Creek IMF. Access to the Crisps Creek IMF from the Eco Precinct is from Collector Road and Bungendore Road.

As described in Section 1.3, the Crisps Creek IMF is approved to accept 1,180,000 tpa of waste from Sydney via the Banksmeadow and Clyde transfer terminals. Once received at the Crisps Creek IMF, waste containers are transferred onto road trailers for the 7 km road journey to the Eco Precinct via Bungendore Road and Collector Road.

The Eco Precinct contains several car parking areas for visitors and employees.

The closest public rail facility is Tarago Railway Station, which is located near the town of Tarago to the east of the Eco Precinct. Tarago Railway Station is located approximately 2 km north of the Crisps Creek IMF (refer to Figure 1.3). The closest airport facility is the Canberra Airport, which is located approximately 42 km south-west of the Eco Precinct.

6.4.2 Potential impacts

Construction of the project will generate traffic for the duration of the construction period, including heavy vehicles for the delivery of earth moving plant and equipment, construction plant and materials, plant and components that comprise the ARC, and light vehicles for the construction workforce.

Construction traffic will generate traffic on the local and regional road network for the duration of the construction period which may have an impact on the capacity of the local road network and key intersections.

Operation of the project will not alter the existing volumes or modes of transport of waste to the Eco Precinct. Waste feedstock for the ARC will be sourced from existing approved waste volumes transported to the Eco Precinct by rail (to Crisps Creek IMF) and locally by road.

The preferred use for the IBA generated by the ARC is reuse as aggregate material for the construction industry, as described in Section 3.5.1. The reuse of IBA will require transport of this material offsite, which will result in road traffic generation. The delivery of reagents for use in the flue gas treatment process will also generate road traffic. The EIS will include an assessment of traffic impacts related to the transport of this material.

A new site access road and intersection with Collector Road is proposed as part of the project. Internal access roads and parking are proposed to service the ARC during operation. There will be a modest amount of light vehicle traffic generated by the operational workforce, as well as visitors to the educational facilities proposed which will generate additional traffic during operation.

The project, once constructed, will have a stack comprising part of the APC system that is likely to be in the order of 60-100 m in height. With the closest airport facility being 42 km from the Eco Precinct, impacts to air traffic will be considered depending on the final height of the stack and in consultation with relevant aviation authorities.

6.4.3 Assessment approach

The assessment will address the standard Roads and Maritime Services guidelines for road traffic impact assessment incorporating the following:

- site observations and existing road network and traffic generation;
- community views on traffic issues in the locality;
- traffic generation by the project during construction and operation;
- impacts to the road network including capacity;
- impacts to key intersection performance;
- traffic safety and review of accident history; and
- site access, internal road network and car parking areas.

Existing RMS and Council traffic data for the study area road network will be reviewed and used to confirm the current daily and hourly traffic volumes for each route, which will then enable the project access and transport route traffic impacts to be assessed.

Impacts to the rail network are not expected as there will be no change to the volumes or method of waste material transported to the Eco Precinct by rail.

Impacts to air traffic will be considered depending on the final height of the air emissions stack in consultation with relevant aviation authorities.

6.5 Visual

6.5.1 Existing environment

The area surrounding the Eco Precinct contains a variety of landscapes with different topographies and scenic qualities within an agricultural setting. Most of the local and sub-regional setting has been cleared for grazing and/or cultivation with a range of scenic values and vistas.

Land surrounding the Eco Precinct is relatively flat, apart from a moderate ridge line located 3 km north of the proposed ARC. Lake George is a prominent visual feature in the surrounding landscape and is located approximately 7.5 km west of the Eco Precinct. The turbines of the Woodlawn Wind Farm, part of the Eco Precinct, are also a prominent visual feature.

The town of Tarago is located approximately 6 km east of the proposed ARC and has no direct views of the Eco Precinct. There are rural residences located on Collector Road which are likely to have views of the Eco Precinct from some locations. When travelling west from Tarago along Collector Road, views of the Eco Precinct are interspersed with roadside and more distant vegetation between the road and the proposed ARC. Views of Lake George from Collector Road are also obscured by roadside vegetation and topography.

6.5.2 Potential impacts

The ARC will be located within the Eco Precinct, which is an established heavy industrial land use. The Eco Precinct has been subject to disturbance associated with historic and current mining operations and waste and resource recovery operations.

The proposal will result in new visual characteristics and infrastructure at the Eco Precinct that will be different in form and scale to the existing site features and surrounding environment. It will also incorporate a tall stack, in the order of 60-100 m in height that will be visible from surrounding areas. There will be some changes to the visual amenity and landscape character of the area immediately surrounding the ARC.

The project will include architectural treatments and consideration of landscape and design features that minimise the impacts to visual amenity. As described in Section 3.1, the conceptual design of the ARC design draws influence from the native trees, rural farming structures and the surrounding grasslands, as well as the waste recovery and energy generating features at the Eco Precinct, with wind turbines a visual feature of the location. The roof form has been oriented to mimic the dominant ridgeline to the south and endeavours to blend the building in to the environment it sits in when viewed from Collector Road. The conceptual form of the ARC is shown in Figure 6.1 and Figure 6.2.

6.5.3 Assessment approach

The assessment approach will comprise a landscape character and visual impact assessment, including:

- a description of the visual catchment;
- spatial analysis of terrain and visibility of the project from the surrounding area;
- consideration of the visual features of the project including building height, stack height, bulk and scale, signage, lighting and the emissions plume within the context of the locality;
- assessment of potential visual impacts of the development on the amenity of the surrounding area;
- consideration of nearby public receivers and significant vantage points in the broader public domain; and
- consideration of architectural design measures and landscaping to minimise impacts on visual amenity.



Figure 6.1 Conceptual view of the ARC looking from the north-west (Source: Nettletontribe)



Figure 6.2 View of the ARC looking from the north-west on Collector Road (Source: Nettletontribe)

6.6 Biodiversity

6.6.1 Existing environment

The ARC is located in an area previously used for historic mining and waste related activities and is predominantly disturbed. There are some areas of remaining fragmented vegetation in the north-eastern portion of the ARC location. Other areas of the Eco Precinct are subject to rehabilitation of former mining and related areas.

The most abundant vegetation community within the Eco Precinct is derived grasslands, including a variety of native pasture grasses and exotic species disturbed from historical agriculture and extractive industry land uses. Patches of fragmented vegetation within the Eco Precinct also contain shrubs and small trees.

The footprint of the ARC is generally located within cleared and disturbed land. There are some areas of remaining fragmented vegetation.

The Eco Precinct is unlikely to support a diverse range of fauna species due to the fragmented condition of remaining vegetation. The following species have been previously identified within the Eco Precinct:

- Buttercup Doubletail (*Diuris aequalis*);
- Eastern Tiger Snake (*Notechis scutatus*);
- Red-bellied Black Snake (*Pseudechis porphyriacus*);
- Eastern Brown Snake (*Pseudonaja textilis*);
- Eastern Grey Kangaroo (*Macropus giganteus*);
- Common Wombat (*Vombatus ursinus*);
- European Red Fox (*Vulpes vulpes*);
- Deer (*Cervinae Cervus*); and
- Black Fly.

Of these, one species is listed as threatened under both NSW and Commonwealth legislation, *Diuris aequalis*.

The nearest watercourse is Crisps Creek, which is located approximately 600 m east of the ARC. Considering the distance of the ARC footprint to the nearest watercourse, aquatic ecology is not predicted to be impacted.

6.6.2 Potential impacts

Potential impacts to biodiversity are associated with the fragmented terrestrial habitat that is located in the north-east portion of the ARC. The potential impacts to biodiversity will depend on:

- the quality of this vegetation and any potential habitat for terrestrial flora and fauna; and
- the extent to which it will be disturbed by the project, including direct disturbance due to the project footprint, impacts associated with noise, vibration and other indirect impacts such as the spread of noxious weeds and pest species.

The design of the project and internal road network surrounding the ARC will seek to avoid vegetation where possible.

6.6.3 Assessment approach

The assessment approach for terrestrial biodiversity will be in accordance with the Biodiversity Assessment Method (BAM), and will be documented in a Biodiversity Development Assessment Report (BDAR). Measures to avoid, mitigate or offset all direct, indirect and prescribed impacts will be in accordance with the BAM.

Impacts to aquatic ecology will not be assessed in the EIS.

6.7 Heritage

6.7.1 Existing environment

As previously described, the ARC is located in an area that is predominantly disturbed. There are some areas of remaining fragmented vegetation.

During the construction and operation of the Eco Precinct, Veolia has not reported any occurrences of disturbance of any items of either Aboriginal or historical heritage significance.

6.7.2 Potential impacts

As there are no known and identified Aboriginal or historical heritage sites located within the footprint of the ARC, and given its predominantly disturbed condition, the risk of impact to items of heritage significance as the result of the project is considered extremely low.

It is considered that the only potential for impacts on items of Aboriginal heritage or historical heritage is in the area of fragmented vegetation. This is considered unlikely due to previous mining operations and its current use as the Eco Precinct.

6.7.3 Assessment approach

The assessment approach for historical heritage will include preparation of a baseline assessment considering search results of heritage registers for surrounding heritage items, a review of historic maps and plans and previous disturbance, field inspection to assess archaeological potential and an overall assessment of archaeological and built heritage potential.

The assessment approach for Aboriginal heritage will include preparation of an Aboriginal cultural heritage assessment report in accordance with the *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW* (OEH 2010) and the *Guide to investigation, assessing and reporting on Aboriginal Cultural Heritage in NSW* (DECCW 2011).

6.8 Social

6.8.1 Existing environment

Veolia has been operating in the region since acquiring the site in 2001 and has endeavoured to work with the community to ensure the community has a line of communication with Veolia to voice concerns and raise issues associated with the Eco Precinct.

As described in Section 5.1, a CLC operates for the Eco Precinct consisting of an Independent Chair, representatives from Goulburn Mulwaree and Queanbeyan Palerang Regional Councils, a representative of TADPAI, and five community members.

Key focus areas of the 2019-20 meetings included:

- progress of the Eco-Precinct, specifically around the gas capture initiative, leachate treatment plant, the future of the MBT, and tailings trial;
- Tarago Village Plan;
- bushfire waste inputs;
- Tarago lead contamination investigation; and
- ongoing funding efforts.

Community concerns are also raised at other meetings attended by local community representatives, such as TADPAI, regularly attended by the Eco-Precinct Manager.

Veolia works in consultation with the Goulburn Mulwaree Council and directly with the local community to undertake community projects. The Veolia Mulwaree Trust was established in 2005 and has distributed \$12 million through its Community Grants Program.

6.8.2 Potential impacts

Initial consultation, as discussed in Chapter 5, has identified a range of issues raised by the community. These include:

- air quality and human health;
- odour;
- transport and traffic issues; and
- knowledge about the proposed technology.

6.8.3 Assessment approach

An SIA will be prepared based on the requirements of the *Social Impact assessment Guideline for State Significant Projects* (DPIE 2020) (SIA Guideline).

The SIA will consider the potential social impacts of the project including:

- potentially affected people and local community surrounding the project;
- where the ARC and transport construction and operation workforce lives;
- social trends or changes experienced by the community;
- social infrastructure, built and natural, that have social value to the community; and
- the history of the proposed project and how it is experienced by the surrounding community.

The SIA will:

- describe the social baseline and identify constraints;
- predict changes and trends, and discuss their potential impacts;
- identify and evaluate the likelihood and consequences of potential social impacts of the project;
- develop strategies that mitigate negatives and enhance benefits of social impacts; and
- develop a monitoring and management framework.

The initial tasks undertaken during the scoping phase to inform the SIA consideration of matters raised by the community (see Chapter 5).

6.9 Hazards and risks

6.9.1 Existing environment

The DPIE's guidance for SSD projects identifies hazards and risks as including chemical, biological, or physical agents that have potential negative impacts on the economy, environment and community. Sensitive receptors in the community potentially affected by hazards and risks are the same as those outlined in Section 6.1 in relation to air quality and human health risk.

Veolia has existing procedures for the management of risks which are addressed in Emergency Response Plans (ERP). The ERPs incorporate a range of control strategies to be used in emergency scenarios for a range of events, including the hazards and risks discussed below.

6.9.2 Potential impacts

Hazards and risks which have been considered as potentially relevant to the project include (based on DPIE's guidance on hazard and risks for SSD projects):

- bushfire risk and fire safety – the Eco Precinct is located within a designated bushfire prone area;
- the potential for the project to be a hazardous industry and/or offensive development as defined under SEPP 33 (including storage and transport of dangerous goods);
- land and groundwater contamination – due to the Eco Precinct's history, and past and current land uses;
- waste – multiple waste streams are received and processed on site via road, including general solid waste at the Woodlawn Bioreactor and the MBT and organic waste at the MBT;
- environmental hazards (from human activities or natural sources) which present a risk to either human health or the environment – human health risks are addressed in Section 6.2 and are not addressed further in this section;
- flooding risks that may present a risk to human life or the environment;
- land movement associated with mining activities; and
- biosecurity, such as potential impacts associated with animal and plant pests, diseases and contaminants.

i Bushfire and fire safety

The Eco Precinct is located within a designated bushfire prone area. The ARC is not anticipated to significantly impact the threat of bushfire above that currently identified at site.

Thermal treatment of waste will be conducted in an enclosed facility, and the waste storage facilities will be equipped with fire detection and firefighting infrastructure.

Flue gases are cooled and treated prior to expulsion from the plant and therefore do not expel any material into the atmosphere with potential to create an ignition. Fire prevention infrastructure will be incorporated into the design to mitigate risk associated with the unlikely event of unburnt waste making its way through processing into the IBA.

A bushfire risk assessment will be carried in accordance with *Planning for Bush Fire Protection: A guide for councils, planners, fire authorities and developers* (NSW Rural Fire Service 2019), and fire risk within the process will be considered against *Fire Safety Guideline: Fire Safety in Waste Facilities* (NSW Fire and Rescue 2020) and documented in the EIS.

ii Hazard assessment (SEPP 33)

A screening assessment will be completed against SEPP 33 as part of the EIS to demonstrate that the ARC can satisfy relevant provisions to ensure that any hazards or risks associated with the project are appropriately managed. This will include consideration of the transport and storage of any dangerous goods associated with the ARC project. If required based on the screening assessment, the assessment approach will comprise a Preliminary Hazard Analysis (PHA) prepared in accordance with *Hazardous Industry Planning Advisory Paper No. 6, 'Hazard Analysis' and Multi-Level Risk Assessment* (DoP 2011).

iii Land and groundwater contamination

The influence of historic and current land uses on groundwater is monitored in accordance with existing requirements at the Eco Precinct. The potential for impact to the groundwater in relation to the project is further discussed in Section 6.10.

The site of the ARC is partially located on an area previously used for historic mining and waste related activities, and as such an assessment will be undertaken to determine the extent of pre-existing contamination. The EIS will detail the results of this investigation and described management and mitigation to address potential contamination issues.

The assessment approach will involve a preliminary site assessment compliant with SEPP 55 with further work dependant on the initial findings.

iv Flooding

As described in Section 6.10, stormwater modelling will be undertaken to inform development of stormwater management infrastructure. This information will inform the EIS as to the potential for additional flood risk as result of the increased stormwater management requirements.

v Waste

Waste created through construction will be considered in the EIS and addressed by a construction contractor in a CEMP.

The key operational wastes will be the ash waste streams (APCr and IBA) as described in Section 3.2.2.. Other waste streams are likely to be minor, but will be fully described in the EIS. While not considered waste, additional recyclable metals are a by-product of the process and will be incorporated into existing onsite recycling streams.

vi Land movement

Construction and operation of the ARC is not considered to impact any existing areas identified as at risk of subsidence.

Veolia currently monitors the entire Eco Precinct site to determine any areas of movement related to rehabilitation of the mine pit or previous mining related activities. Geotechnical investigations will be undertaken as part of the design process to determine any ground treatments required to ensure ground stability.

vii Biosecurity

No additional biosecurity impacts have been considered as a result of the project. The project is seeking an alternative method of disposal of existing waste being brought to the Eco Precinct.

Relevant protocols have been implemented in accordance with existing consents which ensure safeguards to prevent the spread of disease and pests.

6.10 Water

6.10.1 Existing environment

The Eco Precinct has an average elevation of approximately 800 m above Australian Height Datum (AHD) across the site with a maximum of 1,000 m AHD in the north eastern corner along the ridgeline of the Great Dividing Range (GDR). The region is characterised by undulating plains with the GDR running through site in a north-south direction.

Roughly one-third of the Eco Precinct (western side of the GDR) forms part of the Lake George Catchment while the remainder on the eastern side of the GDR is part of the Wollondilly Catchment. Allianonyyiga Creek and Crisps Creek are the primary receptors for runoff from the Eco Precinct. Flows to the Lake George catchment are via Allianonyyiga Creek, and flows to the Wollondilly catchment are via Crisps Creek.

Groundwater recharge is primarily direct rainfall infiltration, and regionally the groundwater flow gradients are a subdued reflection of surface topography.

Currently the Bioreactor and MBT sites manage water quality in accordance with site specific EMPs for each location. The water management systems include controls that separate clean and dirty water. Dirty water and leachate is managed using in a designated system that includes evaporation ponds to manage the build-up during wet periods. The Eco Precinct is managed as a zero discharge site.

Water is extracted from the Willeroo Borefield for use on site. Veolia has an annual Water Allocation Licence (WAL) of 600 ML; in the 12 months from September 2019 to August 2020, 247 ML was extracted.

Operational water is used for the following activities:

- wheel wash facility;
- container wash down;
- potable water use (extracted as part of the Veolia's water extraction licence from the Willeroo Borefield);
- dust control on roads; and
- aquaponics project.

The Eco Precinct's water management system includes a central temporary storage pond called Pond 3 in addition to five separate evaporative sub-catchment areas called Evaporation Dam (ED) ED3 south, ED3 north, ED3N3, ED3N2 and ED3N1.

The groundwater aquifer systems near the Eco Precinct can be broadly divided into the fractured basement Ordovician and Silurian-Devonian aged volcanic, intrusive and sedimentary rocks and the overlying fluvial and hillwash sequences. The groundwater aquifer systems are recharged through rainfall infiltration to where the bedrock outcrops. The depth to groundwater is approximately 2 m below ground level.

6.10.2 Potential impacts

Design of the ARC will require consideration of stormwater and drainage to manage surface water flows. During operation, the ARC will require process water, in the order of 6 ML/month, which will be sourced from potable water sources. The project will require construction of a number of elements requiring excavation. These include a waste bunker at the ARC, and dedicated encapsulation cell for APCr management. These have the potential to impact surface water and groundwater.

6.10.3 Assessment approach

The assessment approach will include a surface water assessment considering stormwater management, process water and site water balance, and an assessment of groundwater impacts.

The stormwater assessment will assess the impact construction and operation of the ARC will have on the management of stormwater. The stormwater assessment will also consider the potential impact the ARC may have in relation to flood risk and inundation.

Process water modelling will consider water sources and management of process water during operation of the ARC. A water balance for the ARC project will be prepared for the EIS.

Groundwater impacts will be considered for the ARC and associated dedicated encapsulation cell for the management of APCr. The cell will be designed in accordance with the *Environmental Guidelines: Solid Waste Landfills* (NSW EPA 2016) and will be lined and engineered to minimise any leachate escape. The current conceptual location for the APCr encapsulation cell is presented in Figure 3.1, however the preferred location, proposed management and disposal approach will be described and assessed in the EIS.

6.11 Waste feedstock availability and management

As described in Section 3.2, the project proposes to source feedstock for the ARC primarily from the waste streams already being transported to Woodlawn, that will otherwise be disposed to landfill. Veolia has long term contracts for waste disposal with a range of local councils in the Sydney region, as well as waste contractors serving the C&I market. The feedstock for the project will be drawn from these sources.

More broadly, it is noted that the *Waste Avoidance and Resource Recovery Strategy Progress Report 2017-18* (NSW EPA) indicates that progress on the target to divert waste away from landfill is lagging and is relatively unchanged at about 63-65% for the three years from 2015 to 2018. The target for 2021-2022 is 75%. Therefore, on face value there is a sufficient supply of residual waste in the Sydney market to supply the project. The EIS will address this issue in more detail and will consider:

- availability of suitable waste feedstock for the project; and
- management procedures for incoming waste to ensure that only "in specification" waste is utilised as feedstock.

6.12 Economic

The project is expected to have positive economic benefits for the local and regional economies. An economic impact assessment will be undertaken for the EIS which will consider potential impacts and benefits to the local and regional economy as a result of the construction and operation of development in terms of employment and the associated flow on effects through the local and regional economies.

6.13 Land capability, stability and soils

The project is considered to be complementary to the current land use of the Eco Precinct. The land is previously identified as a degraded mine site which is largely devoid of vegetation. It has subsequently been developed into a major waste and resource recovery operation, combined with ongoing mineral extraction. Development of the ARC provides an additional form of waste processing and resource recovery that will complement existing site infrastructure and uses. Geotechnical investigations will be undertaken as part of the design process to determine any ground treatments required to ensure ground stability.

6.14 Built environment

The Eco Precinct is largely an industrial site developed for the processing of waste management and to rehabilitate a degraded mine site. The project proposes introduction of an architecturally designed, purpose built facility to the Eco Precinct. The ARC will not negatively impact the existing built environment. Visual impacts of the project will be addressed in the EIS as described in Section 6.5.

6.15 Cumulative impacts

Given the existing operations at the Eco Precinct, cumulative impacts will require consideration and assessment for most of the matters addressed in this scoping report. The existing operations at the Eco Precinct will form part of the baseline environment, against which all impacts associated with the project will be assessed. In particular cumulative impacts for the following matters will be addressed:

- cumulative air quality and odour impacts, accounting for background air quality and odour emissions from existing operations at the Eco Precinct in accordance with the Approved Methods; and
- cumulative noise impacts with other operations at the Eco Precinct in accordance with NPfI methods.

Cumulative impacts will be addressed in each respective technical report and summarised in a standalone chapter in the EIS.

7 Conclusion

The purpose of this scoping report is to accompany the request for SEARs for the project to develop the ARC at the Woodlawn Eco Precinct. The project represents the next stage of development at the Eco Precinct, and will recover up to 39 MW of electrical energy from material that that will otherwise be disposed to landfill. The project involves construction and operation of the following key components:

- development of the ARC for the thermal treatment of up to 380,000 tpa of residual MSW and C&I waste;
- recovery of up to 39 MW of electrical energy;
- management of residual by-products (namely APCr and IBA) generated by the ARC; and
- ancillary development of site infrastructure to facilitate construction and operation of the project.

This scoping report has been prepared by EMM Consulting Pty Limited (EMM) on behalf of Veolia, the applicant for the Woodlawn ARC.

This document outlines the development of the project scope, the proposed approval pathway, the issues and approach for impact assessment, initial outcomes of early consultation, and identifies the approach to consultation proposed as part of the EIS preparation.

Based on the findings of the scoping report, the following key issues will be addressed in the EIS:

- air quality, odour and greenhouse gas;
- human health risk;
- surface and groundwater;
- hazards and risks;
- visual;
- social;
- economic;
- traffic and transport;
- noise and vibration; and
- cumulative impacts.

Other matters that require assessment, but may not require a standalone or detailed technical assessment in the EIS are:

- biodiversity;
- Aboriginal cultural heritage and historic heritage;
- land capability, stability and soils; and
- built environment.

Abbreviations

AEMR	Annual Environmental Management Report
AHD	Australian Height Datum
APC	air pollution control
APCR	air pollution control residues
ARC	Woodlawn Advanced Energy Recovery Centre
BAM	Biodiversity Assessment Method
BAT	best available techniques
BDAR	Biodiversity Development Assessment Report
Bioreactor	Woodlawn Bioreactor
C&I	Commercial and industrial
CEP	Community Engagement Plan
CLC	Community Liaison Committee
DAWE	Department of Agriculture, Water and the Environment
DEC	Department of Environment and Conservation
DECC	Department of Environment Climate Change
DECCW	Department of Environment Climate Change and Water
DDG	dust deposition gauges
DPIE	Department of Planning, Industry and Environment
Eco Precinct	Woodlawn Eco Precinct
ED	Evaporation Dam
EIS	Environmental Impact Statement
enHealth	Department of Health
EfW	Energy from Waste
EMM	EMM Consulting Pty Limited
EMPs	environmental monitoring programs

EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPA	Environment Protection Authority
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ERF	energy recovery facility
FOGO	food organics and garden organics
GDR	Great Dividing Range
HHRA	human health risk assessment
IBA	incinerator bottom ash
ICNG	<i>Interim Construction Noise Guideline</i>
IMF	Crisps Creek Intermodal Facility
LFG	landfill gas
LPB	liquid paperboard
LTP	leachate treatment plant
MBT	Woodlawn Mechanical Biological Treatment Facility
MNES	Matter of National Environmental Significance
MJ/kg	Megajoules per kilogram
MRF	materials recycling facility
MSW	municipal solid waste
Mtpa	Million tonnes per annum
MW	Mega watt
MWth	Mega watt thermal
NEPC	National Environment Protection Council
NPfI	Noise Policy for Industry
OEH	Office of Environment and Heritage
PET	polyethylene terephthalate
PHA	preliminary hazard analysis
POEO Act	<i>Protection of the Environment Operations Act 1997</i>

SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SIA	social impact assessment
SSD	State significant development
TADPAI	Tarago and District Progress Association Incorporated
tpa	tonnes per annum
Veolia	Veolia Environmental Services (Australia) Pty Ltd
WARR Act	<i>Waste Avoidance Resource and Recovery Act 2001</i>
WARR Strategy	<i>Waste Avoidance and Resource Recovery Strategy 2014-2021</i>
WAL	Water Allocation Licence

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