Submission
No 377

INQUIRY INTO PROPOSED ENERGY FROM WASTE FACILITIES

Organisation: NSW Government

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NSW Government Submission to the Select Committee on Proposed Energy from Waste Facilities

NSW Government submission

November 2025

NSW GOVERNMENT

Acknowledgement of Country

The NSW Government acknowledges the Traditional Custodians of the lands where we work and live. We celebrate the diversity of Aboriginal peoples and their ongoing cultures and connections to the lands and waters of NSW.

We pay our respects to Elders past, present and emerging and acknowledge the Aboriginal and Torres Strait Islander people that contributed to the development of this submission.

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1 Introduction

This NSW Government submission addresses the terms of reference for the Select Committee Inquiry into Proposed Energy from Waste Facilities.

The submission aims to inform the Committee on matters relating to the terms of reference, including on the legislative and regulatory framework and the roles and activities of relevant Government agencies.

The Government takes an integrated approach to managing energy from waste in NSW. This approach flows through the assessment of development applications and into ongoing oversight measures including monitoring, compliance, and enforcement activities by regulatory authorities.

The Government is committed to ensuring that any risks from energy from waste on communities, economies and the environment are appropriately managed, including through an effective legislative and regulatory framework that protects human health and the environment.

2 Waste and circular infrastructure planning in NSW

Waste generation in NSW is increasing. Between 2015–16 and 2022–23, waste volumes across the state rose from 18.7 million tonnes to 22.4 million tonnes per year. This trend is expected to continue, with waste volumes projected to reach nearly 37 million tonnes per year in 2041–42.

In 2022–23, around 66% of the waste generated in NSW was recycled. The remaining 7.7 million tonnes of unrecycled waste – known as residual waste – was disposed of at landfill. As waste volumes continue to grow, households and businesses will continue to need to safely dispose of their residual waste. It is essential that services like the collection of red-lid kerbside bins continue to be delivered. These services rely on the availability of waste infrastructure such as landfills.

Landfills servicing Greater Sydney – home to 66% of NSW's population – are expected to reach capacity within the decade. Currently, four landfills accept the putrescible waste from Greater Sydney's red-lid kerbside bins. Due to the scheduled closure of three of these landfills, including Lucas Heights Landfill, Greater Sydney's putrescible waste capacity will fall short of demand by 1.1 million tonnes per year by 2030. This will increase to a shortfall of 1.4 million tonnes per year by 2040 (Figure 1). Currently, 13 landfills accept Greater Sydney's non-putrescible waste. Elizabeth Drive Landfill and Eastern Creek Landfill are expected to close. This will result in Greater Sydney's non-putrescible waste capacity falling short of demand by 2 million tonnes per year by 2031. This will increase to a shortfall of 2.4 million tonnes per year by 2040 (Figure 2).

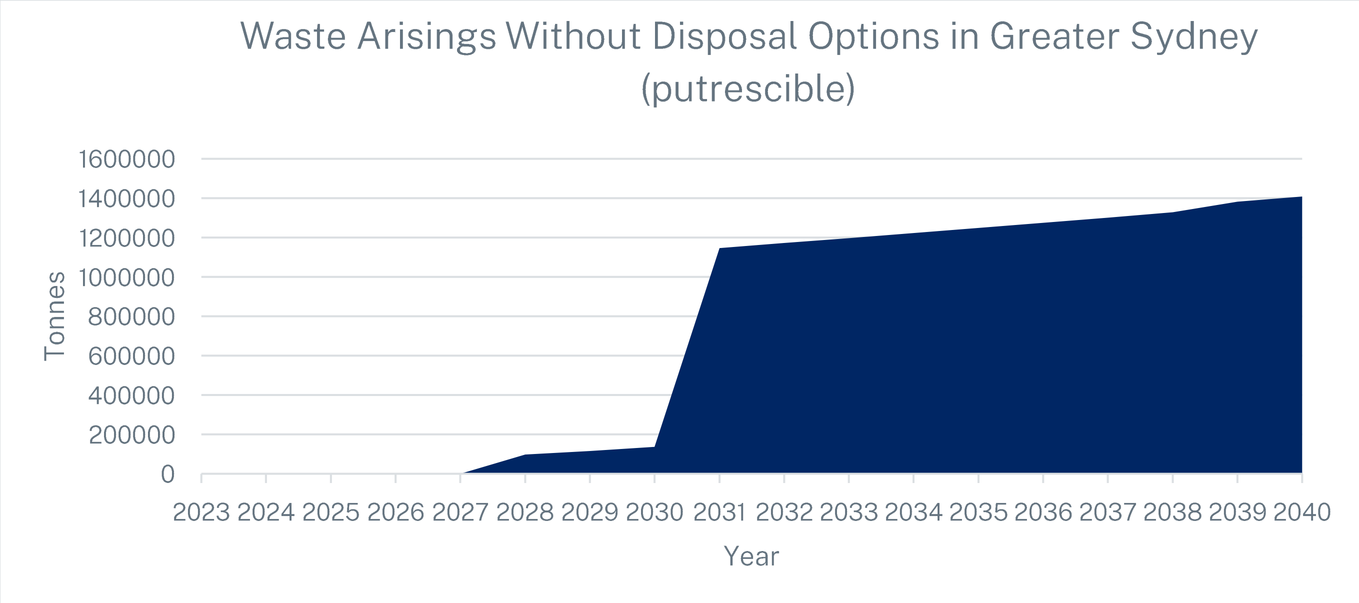

Figure 1: Putrescible waste arising without disposal options in Greater Sydney

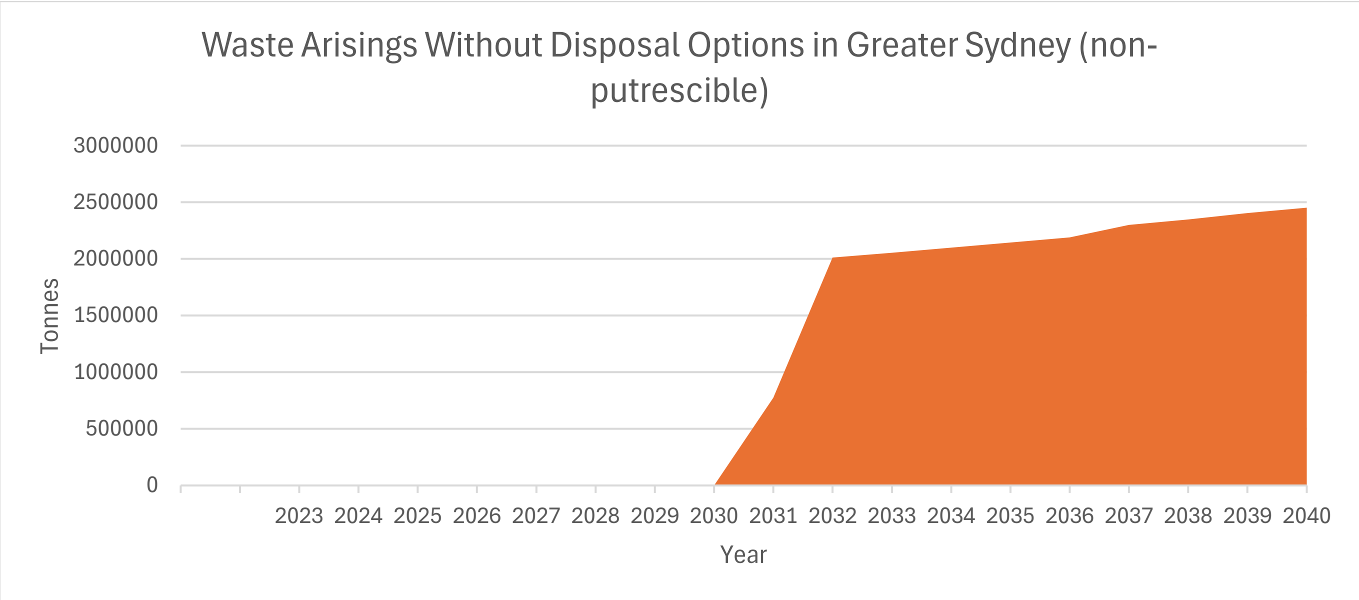

Figure 2: Non-putrescible waste arising without disposal options in Greater Sydney

Once these landfills close, waste generated by households and businesses in Greater Sydney will have to be transported to other landfills, most of which are in regional NSW or interstate. The cost of doing this is expected to hike the household fee for a red-lid bin service by 20%. And if construction and demolition (C&D) waste can't be disposed of in Greater Sydney's landfills, C&D activity may be delayed or even cancelled. This will disrupt the delivery of critical infrastructure projects such as new housing developments. That in turn is expected to result in an estimated $23 billion reduction to the NSW economy, a loss of 11,550 jobs, and a 1.7% fall in average wage rates.

Regional areas of NSW also have limited landfill space. Three regions, including the northern rivers, mid-north coast and Canberra region, could run out of capacity by 2030. Other regions have not planned for excess capacity and only have enough landfill capacity for their immediate population growth. Faced with higher costs for getting waste collected and disposed of, people may stockpile or illegally dump their waste. As options for managing residual waste dwindle, the risk of this behaviour rises. So too does the risk of essential waste services being disrupted, when access to remaining landfills and transportation routes are cut off by floods, fires or other emergencies.

The NSW Government is responding to NSW's waste and recycling challenges by developing the state's first Waste and Circular Infrastructure Plan. Chapter 1 of the Plan focusing on Greater Sydney was released in October 2025.

Chapter 1 outlines how the Government will:

1. streamline planning processes to unlock more capacity at existing priority landfills, where it is necessary to avoid imminent landfill shortfalls facing Greater Sydney
2. update the energy from waste regulatory framework to better enable energy from waste infrastructure, where doing so will reduce our reliance on landfill and increase the resilience of NSW's waste management system while maintaining strong protections for communities and the environment
3. strategically plan for the waste infrastructure needed for essential waste services to be reliably and affordably delivered to Greater Sydney's growing populations and new developments.

The NSW Government is developing a second chapter of the Plan to address the unique waste management challenges facing regional and remote areas of NSW. This chapter will also look at ways to increase investment in recycling and resource recovery infrastructure to reduce landfilling of recoverable and valuable material.

3 The potential role of energy from waste

Greater Sydney has only six years left to head off the approaching waste crisis. Extending and expanding existing putrescible landfills servicing Greater Sydney will only buy more time. Greater Sydney will still need either new landfills or energy from waste facilities to accept putrescible waste. Energy from waste can play an important role for managing Greater Sydney's putrescible waste as it can safely manage waste without creating future legacy issues and contamination challenges. Relying on a handful of landfills for Sydney's residual waste creates a significant risk to the ongoing delivery of essential waste services such as the collection of red-lid kerbside bins. If access to these sites were disrupted (for example, by flooding or scheduled closure), the rest of the waste management network servicing Greater Sydney would be unable to make up for the loss in residual waste capacity. This could lead to large volumes of residual waste not having a safe pathway for disposal.

This risk is large, as we can see from the expected impacts on households, businesses, and the NSW economy should the landfill shortfalls that are fast approaching Greater Sydney arise. Extending or expanding the capacity of currently operating landfills in Greater Sydney doesn't remove these risks; it just delays them.

Creating new options for managing NSW's residual waste can reduce our reliance on landfills and make our waste management system more resilient. If access to one landfill site is cut off during emergencies such as fires or floods, or if natural disasters generate extra waste, we can handle residual waste in other ways. Essential waste management services will be able to keep going.

The thermal treatment of waste to recover energy is one option that is used around the world to reduce the volume of waste going to landfill. It can manage residual waste in a more useful way than disposing of it in landfill, producing energy in the form of heat, electricity or fuel that can then be used to power a range of activities.

Energy from waste facilities can drive jobs and investment and reduce pressure on landfills.

Recovering energy from waste can also be an important step in resource recovery processes, such as in the production of biochar or biofuels. Biofuels and biochar can play an important role in decarbonising our economy, increasing fuel security in NSW and supporting economic growth.

As we work to move towards a more circular economy, we will always need safe management of residual waste - materials that cannot recycled. In line with the waste hierarchy, energy from waste is the last opportunity to recover value from waste rather than landfill it. But, like landfill, energy from waste should only be used when there are no other, higher-order, waste management options available, such as reuse or recycling. So while energy from waste can support the transition away from landfill, it is not our end goal.

4 Types of energy from waste

Energy recovery from waste involves the use of a range of different technologies and approaches to convert residual waste into heat, electricity, or solid/ gas/ liquid fuels. Residual waste is the waste left over after all recyclable or otherwise re-usable material has been removed.

There are a number of different types of energy from waste technologies, including thermal and non-thermal approaches.

4.1 Thermal treatment technologies

Thermal treatment technologies involve the application of high temperatures to convert waste into energy outputs such as heat, steam, synthetic gas, pyrolysis oil or char. These can be used directly or as inputs into subsequent electricity production or industrial processes. Thermal treatment technologies include:

Combustion

Combustion is the most common type of energy from waste technology used around the world for residual municipal or commercial and industrial (C&I) waste. Waste is combusted using air or oxygen to create heat, which can then be used directly or indirectly to generate electricity. Combustion of waste provides an opportunity to obtain value from waste that would otherwise go to landfill, and also reduces the volume of waste that needs to be landfilled.

Gasification

Gasification uses an oxygen-reduced atmosphere to breakdown and convert waste into synthetic gas known as syngas. Syngas can be used to produce heat and/ or electricity, or further processed into fuels.

Pyrolysis

Pyrolysis uses external energy to heat waste and convert it into a range of gaseous, liquid and solid energy outputs such as syngas, oil or char.

Plasma processing

Plasma processing uses very high temperature plasma to produce combinations of heat, fuels and other outputs, for example metals and construction products.

4.2 Non-thermal treatment technologies

Non-thermal treatment technologies involve the use of biological and mechanical processes to convert waste into waste-derived products and/ or biofuels. These products originate from the controlled decomposition of biodegradable materials, such as agricultural and food and garden organics. Non-thermal treatment technologies include:

Anaerobic digestion

Anaerobic digestion involves the biological breakdown of organic matter by microorganisms in the absence of air or oxygen, which produces a biogas and an organic digestate. Biogas can then be used to generate renewable electricity, in industrial processes, or to make carbon dioxide for synthetic fuels. The digestate can be further processed into a compost-like material which can be used as a soil amendment.

Fermentation

Fermentation involves the biological breakdown of carbohydrates in organic materials into alcohols and/ or organic acids, with the remaining residues available for further recovery.

5 Regulatory and strategic framework

NSW has a rigorous framework in place to guide the development and ongoing regulation of energy from waste proposals. Both the EPA and DPHI have a role to play in assessing energy from waste proposals to ensure the protection of the environment and human health. The framework ensures that energy from waste facilities meet strict performance standards and are in areas that best address the State's waste management needs. Any EfW facility in NSW must comply with strict air quality and operating standards to protect human health and the environment.

Chapter 9 Part 4 of the Protection of the Environment Operations (General) Regulation 2022 (Regulation) prohibits the thermal treatment of waste involving or resulting in energy recovery from waste except in certain circumstances and in certain locations.

In 2022, the NSW Government also made changes to the planning system to prohibit the development of thermal energy from waste facilities across Greater Sydney, with limited exceptions. These changes were made to give certainty to industry, councils and the Greater Sydney community about where future energy from waste facilities will be located.

These changes align the planning framework for Greater Sydney with changes that were made to the Regulation.

The State Environmental Planning Policy (Transport and Infrastructure) Amendment (Thermal Energy from Waste) 2022 made changes to the planning framework to prohibit thermal energy from waste development across Greater Sydney where it would be prohibited by the Regulation.

The energy from waste regulatory framework effectively establishes several 'tiers' of controls depending on the type of waste being used for energy recovery and the type of process being used.

The first tier is activities that are excluded from the energy from waste regulatory framework under s142 of the Protection of the Environment Operations (General) Regulation 2022.

- These are activities that deliver environmental benefits and are already subject to regulatory control through the planning assessment process and EPA licensing, so there are no further requirements (such as location restrictions) set under the energy from waste framework.
- This includes non-thermal biological processes such as anaerobic digestion and composting, use of an 'eligible waste fuel', autoclaving, and the thermal treatment of plastic waste for genuine plastic recycling.
- We are also making changes to include the thermal treatment of certain agricultural waste and anaerobic digestion residues to produce beneficial end-products like biochar, biogas, biomethane, or sustainable aviation fuel.

The second tier covers activities that are excluded from the prohibition of energy from waste outside of nominated precincts.

- These are activities that deliver environmental benefits but require some additional regulatory and process controls. They include using energy from waste to replace coal and liquid petroleum fuels in existing manufacturing facilities.

We are also making changes to include:

- the use of certain designed-to-specification fuels that are derived from non-municipal waste streams to replace gas in existing industrial and manufacturing facilities located outside of Greater Sydney
- the thermal treatment of end-of-life tyres to produce oil, steel, carbon black and syngas

The third tier is activities that must only occur in nominated precincts. These are activities that thermally treat mixed waste streams such as municipal solid waste and therefore require additional regulatory and process controls.

These activities must only occur in the following nominated precincts identified under s144 of the Protection of the Environment Operations (General) Regulation 2022:

- Parkes Activation Precinct
- Southern Goulburn-Mulwaree Precinct
- West Lithgow Precinct
- Richmond Valley Precinct

We are making changes to re-gazette a map for West Lithgow to include the former Wallerawang power station site, remove the Richmond Valley Precinct and establish a new Tomago Precinct in the Port Stephens local government area.

Energy from Waste precincts must be:

1. close to existing or planned infrastructure
2. connected to existing or planned road or rail infrastructure
3. compatible with environmental and climatic factors (e.g. air quality)
4. create jobs
5. support secure and sustainable access to energy in locations that need it
6. attract investment and economic opportunities to communities who need it and
7. support existing waste, net zero and regional growth strategies.

6 Planning and Licensing Framework

6.1 Planning and Assessment Process

Regardless of where an energy from waste proposal is located, all proposals must demonstrate compliance with relevant planning and environmental legislation and policies and international best practice.

DPHI is responsible for assessing certain thermal energy from waste development proposals in NSW. This includes:

- developments that meet the triggers/ thresholds for State significant development in section 31 of Schedule 1 to the *State Environmental Planning Policy (Planning Systems) 2021*
- any energy from waste proposal in the NSW Special Activation Precincts

DPHI assesses all energy from waste development applications on their individual merits and in line with all relevant NSW legislation, policies and guidelines.

Before submitting a DA to DPHI, the applicant must seek environmental assessment requirements from the Department's Planning Secretary. The requirements set out the necessary technical assessments required to support the DA. This includes a requirement to carry out and report on a comprehensive community and stakeholder engagement strategy.

Any DA for such a proposal must be supported by a suite of detailed environmental impact and risk assessments of matters such as air quality, human health and agricultural risk, noise traffic, water and social impacts. The relevant local council and other government stakeholders are invited to contribute to the development of the assessment requirements.

Like any facility with air emissions, such as a landfill or a factory, an energy from waste facility must demonstrate the health of the community will be protected by undertaking an air quality impact assessment that shows compliance with the health protective impact assessment criteria as detailed below in section 6.4 - Emissions control technologies and standards.

When a DA is lodged, it undergoes a rigorous merit-based assessment by DPHI. This includes public exhibition of the DA and further community consultation. DPHI makes all documentation publicly available, and its assessment considers feedback from the community, Council, and key government stakeholders.

DPHI works closely with the EPA and NSW Health to consider air quality impacts and human health risks. DPHI, the EPA and NSW Health also seek advice from independent experts in the fields of energy from waste technology and human and environmental health, with experience in assessing these types of projects internationally and in Australia.

The community has an opportunity to have a say on a proposal when it is placed on public exhibition. The applicant must respond to the issues raised during consultation, and DPHI considers both the concerns raised by the community and the applicant's responses as part of its assessment.

While the regulatory framework identifies certain geographical areas as suitable for energy from waste facilities, applicants are still required to demonstrate compliance with strict air quality and operating standards. A development application is unlikely to be supported if an applicant fails to demonstrate the proposal can achieve international best practice, it is inconsistent with the required operating standards, or it is found not to be in the public interest.

As part of DPHI's assessment, the EPA will advise if the proposal complies with relevant environmental policy and legislative requirements and if an environment protection licence can be issued for the facility to operate. If the EPA advises it is unable to issue an environment protection licence to operate an energy from waste facility, this will need to be considered as part of DPHI's assessment and recommendations.

6.2 Community Consultation

DPHI places strong emphasis on effective and genuine community consultation. Applicants for energy from waste proposals are required to undertake a comprehensive, open and transparent engagement process during the preparation of the DA, guided by DPHI's *Undertaking Engagement Guidelines for State Significant Projects* (2024). This process must ensure that the community is well-informed about the proposal, including any potential impacts, and is actively engaged in addressing issues of concern.

The outcomes of this consultation must be reported in the DA, including details of how the applicant has responded to issues raised by the community and stakeholders during the consultation process, and what consultation will be carried out into the future.

6.3 EPA Licensing and ongoing regulation

If an energy from waste proposal is granted consent by DPHI, the development consent and an environment protection licence issued by the EPA will set out the conditions for the facility's operation, monitoring and reporting.

The EPA's input to the planning assessment process, the development of its licence conditions and ongoing regulation are carried out in line with the requirements of key legislation including the *Protection of the Environment Operations Act 1997*, the Regulation, and the *Protection of the Environment Operations (Clean Air) Regulation 2022*.

6.4 Emissions control technologies and standards

The Protection of the Environment Operations Act 1997 (POEO Act) is the major legislation governing environment protection in NSW. The Act is administered by the NSW Environment Protection Authority (EPA).

The EPA's objectives include reducing the risks to human health and preventing the degradation of the environment by reducing to harmless levels the discharge of substances into the air, water or land (section 6 of the Protection of the Environment Administration Act 1991 and section 3 of the POEO Act).

A proposed facility must demonstrate the health of the community and the environment will be protected by undertaking an air quality impact assessment that shows compliance with the health protective impact assessment criteria in the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (Approved Methods for Modelling). These impact assessment criteria are ambient ground level criteria, not in-stack limits. Key impact assessment criteria are drawn from agreed national standards, including the National Environment Protection (Ambient Air Quality) Measure.

The air quality impact assessment must be carried out in accordance with the detailed technical requirements for modelling and assessment in the Approved Methods for Modelling to ensure that it is technically robust and the predictions can be relied upon by the community and the EPA.

Section 128 of the POEO Act makes it an offence for emissions of air impurities to exceed 'standards of concentration' as prescribed by the Protection of the Environment Operations (Clean Air) Regulation 2022. These standards are in-stack emission limits and are the maximum emissions permissible for an industrial source anywhere in NSW. These limits are based on levels that are achievable through the application of reasonably available technology and good environmental practices.

The European Union's 2010 Industrial Emissions Directive (IED), supported by the 2019 Best Available Techniques Reference Document (BREF) for waste incineration provides the European regulatory framework for combustion-based energy from waste facilities that aligns with best available practices and technologies. The IED provides the legislated emission standards, and the BREF provides information on the range of emissions that can be achieved by different pollution control technology.

The EPA routinely sets emission limits in an environment protection licence for additional pollutants or stricter limits than the minimum standards prescribed in the Clean Air Regulation to reflect the ability of a plant to achieve better performance. The EU IED and BREF framework will be used as a reference point for best available technologies in this sector. Stricter limits can be tailored to address project specific risk factors where necessary. The EPA can also set other conditions in an EPL aimed at reviewing licence limits after a plant is operating or to promote emission reduction and continuous improvement.

Energy from waste facilities must also undertake continuous monitoring of a number of important parameters to make sure they don't exceed the emission limits. The EPA may set more stringent monitoring requirements in an EPL, including continuous monitoring of additional pollutants, where proven and available continuous monitoring methods are available

6.5 Water Requirements

Energy from waste facilities may have implications for water licensing and approvals, as these operations can require water for cooling, steam generation, and emissions control. The construction and operation of such facilities will need to comply with relevant NSW water management regulations, including obtaining the appropriate water access licences and discharge permits where necessary. Assessments will be required to ensure that water use is sustainable and does not negatively impact local water resources or downstream users. Additionally, facilities must implement measures to manage and treat any process water or wastewater to protect the environment and meet EPA requirements.

6.6 Other controls

The EPA's NSW Energy from Waste Policy Statement also informs the EPA's regulation. The Policy Statement sets out the overarching policy framework for facilities seeking to recover energy by thermally treating waste, or materials derived from waste, in NSW.

The Policy Statement states that thermal energy from waste facilities will need to meet current international best practice techniques in relation to:

- process design and control
- emission control equipment design and control
- emissions monitoring with real-time feedback to the controls process
- arrangements for the receipt of waste

- management of residues from the energy recovery process

In addition to referencing international best practice techniques, the Policy Statement includes other safeguards to protect the environment and human health. These include:

- establishing thermal efficiency criteria to ensure that energy from waste facilities are designed to thermally treat waste for the recovery of energy rather than as a means of waste disposal
- setting resource recovery criteria to ensure that only the residual from genuine resource recovery operations are used as feedstock in energy recovery facilities
- requiring a proposed facility to refer to a 'reference facility' or fully operational plant using the same technologies and treating like waste streams in other similar jurisdictions to ensure that facilities use technologies that are proven, well understood and capable of handling the expected variability and type of waste feedstock

The EPA will consider improvements in monitoring technologies, individual project risk factors identified during the planning process, and the facility's operating and compliance history over time during regular licence reviews.

7 Current Proposals

Currently no large-scale combustion-based energy from waste facility treating municipal solid waste has been approved for development in NSW. There is one energy from waste proposal actively under assessment. This is the proposal by Veolia for the Woodlawn Advanced Energy Recovery Centre (AERC) in the Goulburn Mulwaree Local Government Area (LGA).

A second proposal by Parkes Energy Recovery in the Parkes Special Activation Precinct (SAP) is in the early stages of the planning process, but no development application (DA) has been made.

The proposals by Veolia and Parkes Energy Recovery are located in the precincts identified under the regulatory framework.

7.1 Woodlawn AERC

DPHI is assessing the proposal by Veolia, known as the Woodlawn AERC. The application seeks consent for a large-scale combustion-based energy from waste facility, including an on-site encapsulation cell, at the Woodlawn Eco Precinct near Tarago. The site is partially located within the

Sydney Drinking Water Catchment area and is surrounded by agricultural land uses, including food production.

To assist with its assessment, DPHI has engaged four independent experts in the fields of energy from waste technology, human health risk, PFAS (polyfluoroalkyl substances) and odour.

The local community strongly oppose the proposal (617 public objections and an objection from Goulburn Mulwaree Council) due to concerns about human health risks from air pollutants and PFAS, contamination of groundwater and drinking water, Veolia's compliance record, odour and impacts on agricultural food production.

Following the public exhibition period in late 2022, DPHI requested Veolia provide additional information and further assessment of all issues raised by the community, Government authorities and the experts as part of a Submissions Report.

In March 2023, DPHI met with several special interest groups, businesses and landholders to discuss the issues raised. Veolia was asked to further consider specific matters relating to agricultural risks, the approach to engagement and the health and safety of the community as an outcome of this consultation.

In mid-2024, in response to concerns regarding groundwater quality impacts from the encapsulation cell, Veolia advised it would remove the encapsulation cell from the proposal and use an alternate method of treating ash residues to enable disposal within the existing Woodlawn landfill. The changes will be described and assessed in an Amendment Report.

The Amendment Report and Submissions Report are expected in early 2026. All documentation submitted by Veolia will be made publicly available.

7.2 Proposed Parkes Energy Recovery Project

The Parkes Special Activation Precinct (SAP) is one of the designated areas excluded from the energy from waste prohibition under the Protection of the Environment Operations (General) Regulation. In 2020, DPHI prepared a master plan outlining a 40-year vision for the precinct which was informed by a suite of technical studies including air quality, noise, odour and environmental assessments. The Parkes SAP Master Plan identifies a dedicated area within the precinct for an energy from waste facility.

The SAPs operate under a planning framework governed by the State Environmental Planning Policy (Precincts Regional) 2021 (Precincts Regional SEPP). Development applications assessed under the Precincts Regional SEPP remain subject to robust assessment processes which are undertaken by DPHI as the consent authority.

Regional Growth NSW Development Corporation (RGDC), as the entity responsible for the delivery of the SAPs, has led a process to select a consortium that could seek approvals, fund, design, build, own and operate an energy from waste facility within the precinct on land leased from RGDC. This process commenced in 2023.

In early 2025, Parkes Energy Recovery, a consortium led by Tribe Infrastructure Group and comprising Tadweer Group and HiQ Group, were confirmed as the successful entity from that process. Parkes Energy Recovery must obtain the relevant environmental and planning approvals, including development consent and an environment protection licence from the EPA, before it can construct and operate a facility.

8 Other opportunities - recovering organic waste

Energy from Waste proposals such as pyrolysis, gasification and anaerobic digestion can assist primary producers to reduce waste, limit their carbon footprint, and add value to agricultural or certain forestry by-products.

To date, energy from waste in the form of bioenergy is underutilised in the agricultural sector.

The EPA's *Climate Change Action Plan* identifies energy from waste as a critical emissions reduction opportunity for agriculture businesses and funds EPA actions to support the sector to increase its use of energy from waste.

8.1 Renewable fuels

The NSW Government is developing a Renewable Fuel Strategy (the Strategy), to outline a plan to accelerate the production and use of renewable gases and liquid fuels in NSW. The development of the Strategy is not considering incineration of waste for electricity generation or direct use for heat in other production processes.

Renewable fuels are produced from sustainable biomass such as agriculture, organic wastes and other residues, using renewable electricity to generate hydrogen or by combining hydrogen with a sustainable source of carbon to produce hydrogen derivative fuels.

In developing the Strategy, the NSW Government is considering potential approaches to incentivise the next wave of biogenic renewable fuel production in NSW. Biogenic fuels provide an opportunity to value add to our state's excess resources, such as organic wastes and residues. They can directly displace fossil fuels in hard-to-electrify sectors as well as support fuel security, waste management and circular economy outcomes for NSW communities.

The NSW Government has a legislated commitment to reduce emissions by 50% of 2005 levels by 2030, 70% by 2035 and to be net zero by 2050. Renewable fuels are needed to provide a short-term decarbonisation option where electrification is not yet viable, and as a long-term solution. This includes hard-to-electrify sectors such as manufacturing, mining, aviation and heavy transport.

NSW imports most of the liquid and gas fuels we consume from other states or internationally. Domestic production of renewable fuels makes NSW more resilient against international supply shocks and price volatility. The Australian Energy Market Operator forecasts that southern states including NSW could face peak-day gas shortfalls from 2028 and annual supply gaps from 2029 . Biomethane produced from local waste feedstocks can be injected into existing gas networks, bridging shortfalls and reducing reliance on imported fossil gas.

Renewable fuels also represent a significant economic opportunity for NSW. They will be vital for supporting our economy to transition and succeed in a net zero economy. The NSW Government SAF Prospectus estimated that biogenic sustainable aviation fuel alone could be worth $4.8 billion by 2050. New jobs, skills, qualifications, training pathways, and technologies are expected to form as the renewable fuels sector develops.

Renewable fuel production can also generate other valuable outputs that contribute to circular economy outcomes. This includes digestate from anaerobic digestion, which can be applied to soils as a biofertiliser, biogenic carbon dioxide from gasification and fermentation processes can be captured and used for industrial inputs or combined with hydrogen to produce renewable fuels like methane, kerosene, diesel and methanol.