

NSW EPA Proposed Climate Change Requirements – Information for landfill licensees

The NSW EPA's proposed climate change requirements will apply to businesses that hold environment protection licenses under the *NSW Protection of the Environment Operations Act 1997* (POEO Act). The proposed requirements will help these businesses reduce their greenhouse-gas emissions and enhance their resilience to climate change, improve transparency for the community, and provide information that the EPA can use to develop targeted support and guidance for sectors. This guidance document provides additional information about how the proposed requirements apply to landfill licensees.

Our proposed climate change requirements will only apply to licensees who emit over 25,000 tonnes per year of CO₂-e of scope 1 and scope 2 emissions.

Which proposed requirements apply to landfill licensees?

The EPA regulates all NSW premises whose primary fee-based activity is waste disposal by application to land, under the POEO Act. As of February 2025, there are about 130 environmental protection licenses for this activity.

Under the proposed requirements, landfill licensees exceeding the 25,000 tonnes per year of CO₂-e of scope 1 and scope 2 emissions will need to do the following two things.

- Submit an annual climate change report on their emissions to the EPA by 28 February each year. The first report is due by 28 February 2027.
- Publish a Climate Change Mitigation and Adaptation Plan (CCMAP) on their website, and submit 10-year forward emissions projections to the EPA, by 31 October every three years. The first CCMAP and projections are due by 31 October 2027.

Further detail on each requirement can be found in the *Proposed Climate Change Requirements* document.

Greenhouse-gas emissions in the landfill industry

All landfills that contain organic waste generate landfill gas. Landfill gas can be highly odorous and contains methane (45–60%), carbon dioxide (40–60%), and small quantities of other gases and compounds, including nitrogen, oxygen, sulphides, ammonia, hydrogen and carbon monoxide.¹ Methane in landfill gas presents several problems. It is potentially explosive and is a significant

¹ University of New South Wales and GHD Pty Ltd, 2006. Passive Drainage and Biofiltration of Landfill Gas using Recycled Materials. Project Report for the Department of Environment and Conservation, Sustainability Programs Division.

contributor to greenhouse-gas emissions. Methane has 28 times the greenhouse impact of carbon dioxide.²

The NSW EPA's *Proposed Climate Change Requirements* document refers to scope 1, scope 2 and scope 3 greenhouse-gas emissions. These are defined in Australia's National Greenhouse Accounts Factors reports. For landfills:

Scope 1: Direct emissions are those generated within the licensee's emissions accounting boundary and can include fugitive emissions from landfills and other on-site infrastructure, non-road vehicles and equipment, on-site transportation emissions, and biogas combustion or flaring.

Scope 2: Indirect emissions are those generated outside the licensee's boundary e.g. outsourced energy use, including purchased electricity from the grid. Scope 2 greenhouse-gas emissions can be sourced from the most recent National Greenhouse Accounts Factors report.

Scope 3: The emissions from processes under the operational control of third parties are considered scope 3. For instance, if a landfill owner manages the waste collection and waste management facility but contracts a third-party operator for landfill gas management and biological treatment, the emissions generated from these outsourced processes should be reported as scope 3 emissions.

Is my facility over the 25,000 t CO₂-e threshold?

Some privately owned landfill facilities will already know whether they exceed the emission threshold as they are required to report to the National Greenhouse and Energy Reporting Scheme (NGERS). However, some facilities are not captured by the scheme and may not be measuring or tracking their greenhouse-gas emissions.

Determining when a landfill is expected to emit more than 25,000 tonnes per year of CO₂-e scope 1 and scope 2 emissions can be difficult. This document provides guidance for making an informed estimation.

A conversion factor of 1.2 t CO₂-e/t food waste can be applied to give a rough estimate of emissions. We recommend that facilities with estimated emissions above 20,000 t CO₂-e using this factor undertake a more detailed investigation. A more robust estimate will take into account many factors including climate, volume and type of waste, historical waste received, biogas and methane management practices, and equipment used. The emission factors in the figure below could also provide a preliminary estimate of a landfill's emissions.³

² Global warming potential | Clean Energy Regulator

³ Emissions impacts of landfilling food waste

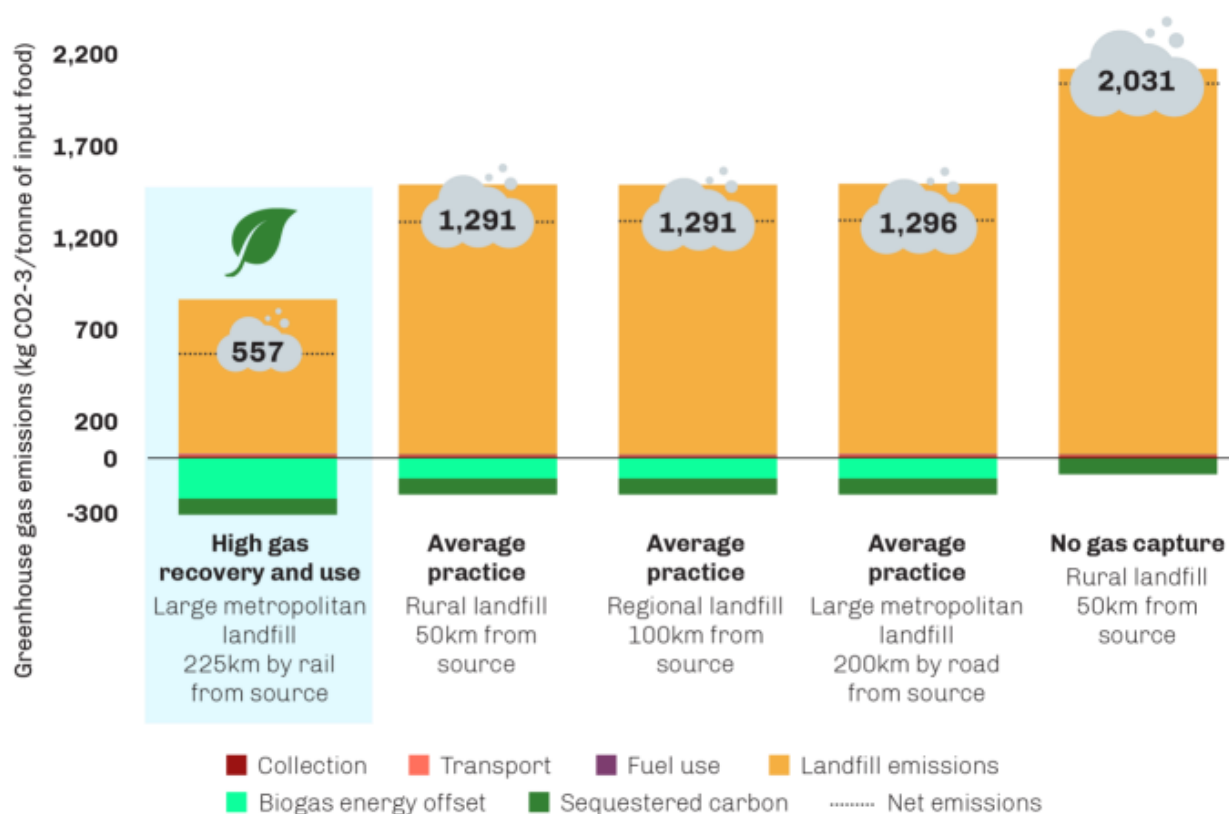


Figure 1 Emissions offsets for five landfill scenarios

Source: EPA fact sheet, *Emissions impacts of landfilling food waste*

<https://www.epa.nsw.gov.au/sites/default/files/24p4522-emissions-impacts-from-landfilling-food-waste.pdf>

Where can I get help or advice on reducing my emissions and developing a CCMAP?

As part of developing their Climate Change Mitigation and Adaptation Plan (CCMAP), licence holders will be asked to publish information about how they are reducing their greenhouse-gas emissions on their websites.

For the landfill industry, this may include reducing emissions from reducing food organic and garden organics in landfill, gas recovery with power generation or flare, and energy-efficiency measures.

The NSW Government will provide targeted support to reduce or abate greenhouse-gas emissions from landfills in NSW through the Landfill Emissions Abatement Program (LEAP).

The LEAP will:

1. Support councils to better manage their greenhouse-gas emissions from landfill.
2. Enhance landfill gas management technology and market readiness.
3. Embed financial supports to ensure landfill gas management is viable in the immediate and longer term.

Grants scheme

The EPA understands that transitioning to new climate-related requirements will involve a learning curve and varying levels of capacity building across industries. To support this transition, the EPA is working with the NSW DCCEEW to develop a \$5M grants scheme as part of the High Emitting Industries grants to support eligible licence holders in preparing their CCMAP.

The grants will be available to environment protection licence holders whose facilities are not coal mines, are outside the Safeguard Mechanism, and which emit over 25,000 tonnes per year of CO₂-e of scope 1 and scope 2 emissions.

Each eligible licensee will be able to apply for up to \$100,000, or 50% of the project cost, whichever is less. The grant program will open from late 2025 and will close prior to the CCMAP requirements taking effect.

This initiative is designed to ensure that both large and small licensees can meaningfully participate in the CCMAP process, regardless of their starting point.

Resources for estimating landfill greenhouse-gas emissions

Australian Government

- NGER solid waste calculator:
 - [Estimating emissions and energy solid waste and landfill biogas management guideline 2023-24](#)
 - [NGER threshold calculator user guide 2023-24](#)
- The [National Greenhouse Accounts \(NGA\) Factors](#) provides methods to help companies and individuals estimate greenhouse-gas emissions. For landfills, the NGA factors provide emission factors for scope 3 emissions. Scope 1 and scope 2 landfill emissions follows the NGER methods.

NSW Government

- NSW EPA [Using Biofilters to reduce the greenhouse impact of small to medium sized landfills](#).
- Hunter Joint Organisation (EPA funded) – [landfill emissions measurement and reporting package](#)

Other

- United States EPA [Landfill Gas Emissions Model \(LandGEM\)](#)
- Ireland EPA [Management of Low Levels of Landfill Gas](#)
- UK Environment Agency [Guidance on gas treatment technologies for landfill gas engines](#)