

To help achieve our purpose: create a world without waste to preserve our planet, Sims Resource Renewal is aiming to build several resource renewal facilities globally by 2030. We are proposing the first resource renewal facility will be located at 1904 Hume Highway, Campbellfield, Victoria. The proposed facility will be our first step in eliminating approximately one million tonnes of waste to landfill. Our aim is to transform the waste material into useful products for society.

We will use plasma gasification to transform automotive shredder residue (ASR), left over once we have removed as much metal as possible as part of our metal recycling process, into a synthesis gas (syngas). The syngas is then further processed to produce products including hydrogen, carbon dioxide and a glass like vitrified product. Hydrogen and carbon dioxide will be captured and on-sold from day one.

Purpose of study

The aim of the study was to assess the potential noise effects that may occur in the area surrounding the proposed facility by modeling potential noise emissions during construction and future operations. As part of the modelling process we considered existing noise conditions approximately a 2km radius around the location of the proposed facility, topographic and other factors that may influence noise levels. This study confirmed that appropriate equipment has been selected to minimise noise emissions to comply with the General Environmental Duty as specified in the [Environment Protection Act 2017](#).

Where we propose to use loud equipment, noise mitigation will utilise best available techniques and technologies.

The study showed that distance from the site to the nearest residential areas are over 800 m away and predicted to be exposed to 47dBA (decibels) during normal operations. This is equivalent to the noise produced by a refrigerator. Noise levels generated by other every day items are shown below. This data has been sourced from the Centre for Hearing and Communication.

 * 50 dBA Refrigerator	 50 - 60 dBA Electric Toothbrush	 50 - 75 dBA Air Conditioner
 55 - 70 dBA Dishwasher	 60 - 85 dBA Vacuum Cleaner	 60 - 95 dBA Hair Dryer
 65 - 95 dBA Power Lawn Mower	 65 - 85 dBA Flush Toilet	 80 - 90 dBA Food Processor

Assessment

A specialist noise study was undertaken using computer modelling to assess the generation of noise emissions from the proposed facility and equipment used on-site, that will be used as part of day-to-day operation. The assessment considered the following key factors:

- anticipated noise sources and associated noise levels
- baseline noise conditions between the site and the nearest sensitive receptor
- barrier effects from buildings and topography
- air absorption
- ground effects
- meteorological conditions.

The results were assessed against the objectives outlined within the relevant EPA Victoria's guidance, including consideration of nearby sensitive receptors, the closest of which is a residential area 800m south of the site.

The assessment also included an analysis of the baseline noise conditions in the area by collecting seven days of monitoring data from the former automotive factory site west of the Hume Highway. The noise monitor was located specifically between the proposed facility site and the sensitive residential area south of Barry Road.

The noise study will be incorporated into the Development License application submitted to EPA Victoria.

Key findings

The study showed that distance from the site to the nearest residential areas are over 800 m away and predicted to be exposed to 47dBA (decibels) during normal operations.

During the construction phase, works will be managed in accordance to the EPA Victoria Noise Control Guidelines. Measures to manage noise are expected to include acceptable control of construction noise and vibration, in particular in relation to the nearest residential areas. This would involve scheduling works during the day where possible, and implementing appropriate noise management measures on site during the works.

The study also included noise levels projections once the facility is operational. It is anticipated that the noise emissions from the site will remain below the existing background levels and that the site will operate in compliance with applicable noise limits at all times.

Next steps

We will continue to work with EPA Victoria to demonstrate that the proposed noise emissions during construction and operation are within the relevant EPA Victoria's guidance.

Noise contour map for normal operations showing predicted noise levels.

