

Fire management and chemical storage



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.

Overview

To ensure the proposed facility operates in a manner that reduces the risk of harm to human health and the environment, appropriate planning and design has been undertaken in accordance with requirements of EPA Victoria, WorkSafe Victoria and Fire Rescue Victoria.

As is the case for many industrial operations, in order to operate, some potentially dangerous goods will be stored on-site. Their storage will be managed in accordance with legal requirements and in way in that mitigates or where possible eliminates, the risk of fire or explosion.

Assessment

This assessment was undertaken to ensure that the potential risk of fire and loss of containment scenarios at the proposed facility are identified. It also considered designs and management measures to ensure construction and operations will be undertaken to protect the safety of employees, the community and the environment at all times.

Risk assessments have been completed in line with the Australian Standards, legislation, policies and guidelines. The assessments identified potential risks from fire and release scenarios to facilitate identification of appropriate control measures required to reduce the risk of harm to human health and the environment.

The assessments will be iteratively updated during the detailed design phase, in line with regulator expectations, and as the plans are approved and the project transitions through commissioning and into operations.

Our assessments are ongoing and will be iteratively updated as the site engineering design progresses to detailed design, into commissioning and operation. Sims Resource Renewal is working closely with EPA Victoria, Hume City Council and WorkSafe to ensure the appropriate level of information is provided in the Development Licence and Planning Permit Applications.



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Key findings

To produce hydrogen at the facility, requires hydrogen, syngas and oxygen to be on-site and notify WorkSafe Victoria of the quantities on site. Dangerous goods storage, handling and transport requirements will be managed appropriately at all times, in accordance with the relevant regulatory requirements.

The safety of our employees and the surrounding community will always be our first priority. In line with our commitment to safety, our proposed facility will include world's best practice for all operations. We will implement controls to reduce the risk of harm to the the community, our employees and the environment. These include:

- Volume of ASR to be stored on site is enough for approximately four days of production. Typically, 700 - 1,000 tonnes will be on site at any one time.
- ASR will be stored in steel silos to limit the availability of oxygen, thereby reducing the risk of fire.
- Implement separation distances between dangerous goods and potential ignition sources.
- Enclose liquid materials storage areas within a segregated area by bunding as required in the legislation, regulations and guidelines in Victoria.
- Regular maintenance for all plant and equipment.
- Transport of dangerous goods to and from the site by appropriately licenced drivers and vehicles.
- Prepare, implement and comply with the Emergency Plan.
- Comply with all relevant Australian Standards, legislation, policies and guidelines.
- Fire protection systems will be installed in accordance with Building Code of Australia requirements, including to:
 - Minimise severity of any potential fire.
 - Conduct effective firefighting operations without exposure to extreme danger.
 - Mitigation of fire damage to plant and equipment.
 - Mitigation of fire spreading to surrounding buildings.

Next steps

Formal written advice will be sought from Fire Rescue Victoria, to ensure fire protection systems are installed in accordance with Building Code of Australia. In addition, a register of dangerous goods will be maintained in accordance with regulatory requirements. Further planning will be undertaken during project design including preparation of an emergency management plan that will address EPA Victoria and other regulatory requirements relating to emergency/non-routine events. The emergency management plan will align with our core company values (safety, integrity, respect, transparency, excellence, and social responsibility).

A photograph showing fire safety equipment. In the foreground, there are several pairs of black and yellow fire-resistant boots. To the right, two red fire extinguishers are visible. The background is slightly blurred, showing the lower legs and feet of people in white protective suits.

For more information on this study or to speak to someone from the team please contact Sims Resource Renewal on 1800 570 530 or info.srr@simsmm.com