MAY 2026

EES Technical Studies
Environment and Water

Victorian Renewable Energy Terminal
PORT OF HASTINGS

This fact sheet provides an overview of the Environment and Water based studies that will be assessed through our Environment Effects Statement (EES)

Port of Hastings Corporation (PoHC) is required to prepare an Environment Effects Statement (EES) for the Victorian Renewable Energy Terminal (the Terminal).

An EES is the most rigorous environmental impact assessment process in Victoria. There are 20 technical studies that are being prepared to investigate the potential impacts of the Terminal.

There are five EES studies that assess these potential Environment and Water impacts:

- Coastal Processes, Coastal Geomorphology and Dredge Plume.
- Surface Water.
- Groundwater.
- Contaminated Land, Soils and Waste.
- Climate Change (inc. Greenhouse Gas).

Why is assessing environment and water important?

Western Port is an environmentally unique area, listed under the Ramsar Convention on Wetlands of International Importance. Western Port is strongly influenced by changes to tidal flows and marine processes; therefore it is important that we fully understand ground and marine conditions so that we can ensure the proper mitigation measures are in place to manage any potential impacts of the Terminal Project.

Coastal Processes, Coastal Geomorphology and Dredge Plume

What is being investigated?

Our Coastal Processes, Coastal Geomorphology and Dredge Plume Impact Assessment considers changes to water movement and coastal conditions, including tides, currents, seabed shape, wave patterns, and sediment release from dredging, as a result of the construction and operation of the Terminal.

Image: Shoreline at the Old Tyabb Reclamation Area site.

What is coastal geomorphology?

Coastal geomorphology is the study of morphological development of the coast under the influence of coastal processes. This is influenced by processes such as erosion and accretion, and continually reshapes the coastline.

How are we assessing impacts?

To understand the project's potential impacts on coastal processes, our specialists are:

- Combining environmental monitoring with advanced computer modelling to understand how tides, waves, currents and sediment naturally behave in Western Port.
- Looking at what currently happens in Western Port and then simulation to show how development of the Terminal might change conditions associated with coastal processes such as waves, currents and tides.
- Creating numerical and conceptual models to simulate how sediment movement might lead to morphological change.
- Creating a model to simulate how sediment plumes might behave as a result of construction activities that disturb the seabed.

The assessment adopts a conservative, risk-based approach.

Surface Water

What is being investigated?

Our Surface Water Assessment considers existing water conditions in and around the project site, including nearby drains and wetlands, and how the construction and operation of the Terminal could impact surface water environmental values.

The assessment considers floodplain function including flood-related risk, water quality, waterway health and flows, and physical form – including for example stability, erosion, drainage capacity and water-dependent ecosystems.

How are we assessing impacts?

As part of the surface water assessments, specialists use a step-based methodology:

- Desktop studies, site inspections and baseline modelling are undertaken to understand how water currently moves around the site and from broader catchment.
- Industry-standard flood, hydrology, and water-quality models are used to predict how storms, run-off, and drainage would change once the Terminal is built, including under relevant future climate scenarios.

By comparing these “before and after” conditions and applying a risk-based method, we can identify the key impacts and the measures needed to avoid or minimise them.

Image: Aerial of the Old Tyabb Reclamation site.

Groundwater

What is being investigated?

Groundwater is water that infiltrates the soil and percolates downward to fill pores and fractures within rocks and deeper sediments.

Our Groundwater technical assessment considers how the construction and operation of the Terminal could change groundwater levels and flows, and impact nearby groundwater receptors such as wetlands and vegetation.

Image: Groundwater monitoring at the Old Tyabb Reclamation Area in 2024.

How are we assessing impacts?

To assess groundwater impacts, our specialists are:

- Building an understanding of existing groundwater behaviour through desktop reviews, site monitoring, and development of a conceptual hydrogeological model.
- Constructing and calibrating a numerical groundwater flow model to predict how construction activities, such as dewatering during reclamation, and the final Terminal layout could alter groundwater levels and flows.
- Comparing predicted “before and after” groundwater conditions to assess how changes in groundwater availability might affect vegetation.
- Working with ecologists to interpret changes and identify potential impacts on Groundwater Dependent Ecosystems (GDEs).
- Identifying management and monitoring measures needed to avoid or minimise identified impacts.

What is a Groundwater Dependent Ecosystem (GDE)

Groundwater Dependent Ecosystems (GDEs) are ecosystems which require access to groundwater on a permanent or intermittent basis to meet all or some of their water requirements so as to maintain their communities of plants and animals, ecological processes and ecosystem services.

Contaminated Land, Soils and Waste

What is being investigated?

The Contaminated Land, Soils, and Waste Assessment involves analysing the soil and sediment quality at the Terminal site and the adjacent marine sediments, as well as analysing the presence of any acid sulphate soils and the potential for any groundwater contamination risks associated with construction, dredging and operations.

Image: Aerial of the Old Tyabb Reclamation Area and surrounding industrial precinct.

How are we assessing impacts?

As part of the contaminated land assessments, specialists used a step-based methodology and:

- Undertook a desktop study to characterise existing conditions, including potential sources of contamination and associated contaminants of potential concern (CoPCs).
- Undertook a site inspection, and targeted terrestrial and marine investigations, including soil, groundwater, and sediment sampling and analysis.
- Developed a conceptual site model (CSM) describing potential contamination sources, associated CoPCs, receptors and possible exposure pathways.
- Used a risk based methodology, consistent with industry standards, to identify where project activities can interact with contamination or acid sulphate soils.
- Compared analytical results against relevant human health, ecological, groundwater, sediment, and waste criteria, including the Environment Reference Standard and key guidelines and publications, such as the National Water Quality Management Strategy.
- Identified and assessed the potential impacts associated with encountering contamination during dredging of marine sediments, land reclamation, spoil excavation and stockpiling, mobilisation of contaminants, and spills of oils, chemicals and waste during construction and operation of the Terminal Project.
- Are establishing appropriate Environmental Management Measures (EMMs) to minimise the risk to the environment from contaminated land, soils and waste.

Climate Change and Greenhouse Gas

What is being investigated?

The Climate Change Assessment examines climate change risk and adaptation measures in relation to the construction and operation of the Terminal, in particular considering sea level rise and extreme weather events.

Image: Aerial of the Old Tyabb Reclamation Area

How are we assessing impacts?

To assess climate change risk, we are:

- Defining and grouping project work areas and operational components to systematically evaluate specific climate risks, exposure pathways, and vulnerabilities.
- Reviewing applicable Commonwealth and Victorian legislation, alongside local, state, and national standards and policy guidelines.
- Conducting a comprehensive review of historical data and future projections to establish baseline conditions and climate trends.
- Assessing the potential implications of weather extremes and projected changes on the Terminal Project, specifically evaluating:
  - **Land and Atmosphere:** Bushfire, drought, extreme heat, and wind.
  - **Hydrology:** Extreme rainfall and flooding.
  - **Coastal & Marine:** Sea level rise, storm surge, coastal erosion, ocean warming, and acidification.
  - **Compound Risks:** Multi-hazard scenarios where climate threats occur simultaneously or sequentially.

The assessment identifies how extreme weather and long-term climate trends may influence the Terminal Project. While construction will occur under conditions similar to the present day, the project's design and operational lifespan must account for more significant shifts projected toward 2050 and beyond.

This includes consideration to:

- Heat and UV intensity.
- Rainfall and flooding hazards.
- Sea level rise and storms.
- Bushfires.

Learn more about our other EES study areas

Scan the QR code to view the other Environment Effects Studies fact sheets.

Flora and Fauna

These studies explore the potential impacts to the flora (plants, trees, and seagrasses) and fauna (birds, mammals, skinks, fish, and marine invertebrates) in and around the project area.

Western Port is home to many plant and animal species, including threatened and migratory species. As these species can be affected by new infrastructure projects, we are required under the Environment Effects Act and Environment Protection and Biodiversity Conservation Act to assess our potential impacts.

People and Places

These studies explore potential impacts to local communities (commercial, recreational, residential), Historic and Aboriginal Cultural Heritage, and Land Use Planning.

Major projects, such as the Victorian Renewable Energy Terminal, can have an influence on the way we live, work and play in the local community. We need to assess how construction and operational activities affect areas like recreation, business, residences, and economic growth in the region.

Liveability and Amenity

These studies explore the potential impacts of noise, vibration, visual amenity, and air quality as a result of the project.

Constructing new infrastructure can cause noise, visual and other impacts, so we need to assess how these will affect the area surrounding the Project both during construction and ongoing.

Traffic, Transport and Aviation

These studies explore the impacts of additional traffic volumes on local road networks, as well as the potential impacts of the project on local aviation.

Trucks will be needed to bring materials to site, and construction worker vehicles will need to access site via local roads. It's important to assess any potential impacts this could have on the local road network, and ensure roads are safe and traffic is managed appropriately during this time.

From an aviation perspective, offshore wind towers will be up to 200m tall when assembled at the Terminal.

What we've heard so far

Community and stakeholder input continues to play an important role in shaping the EES before it is finalised for exhibition.

We have received and heard community concerns around sea level rise, sedimentation, hydrodynamics and broader consideration of the local marine environment. These topics are being carefully assessed through the EES's technical studies.

Image: Site tour of the Old Tyabb Reclamation Area site.

Upcoming Exhibition of the EES (2027)

The project EES will be available for public review and comment for at least 30 business days.

The EES will include supporting technical documentation, including a detailed consultation report outlining how the project engaged with stakeholders and the community, and considered feedback as part of preparing the EES.

During this time, there will be an opportunity to review the full suite of technical studies and EES reports and make a submission to the Planning Minister in response to the project.

Details about the exhibition, how to access documents and how to make a submission will be published closer to the time. At this stage, EES public exhibition is expected to occur in 2027.

Stay informed and up to date about the EES exhibition process

Subscribe to our e-newsletter by scanning the QR code or visiting:
renewableenergyterminal.com.au/subscribe

For languages other than English, please call 03 9209 0147.

Please contact us if you would like this information in an accessible format. If you need assistance due to a hearing or speech impairment, please visit **relayservice.gov.au**

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