

Program Overview

Victoria is a major producer and user of natural gas from waters off its coastline. The Victorian Gas Program is conducting scientific studies to determine the potential for further discoveries of natural gas.

Victoria's gas demand of approximately 200 petajoules (PJ) per annum is met from gas reserves located in the Gippsland, Bass and Otway basins. In addition, up to 200 PJ can be piped interstate to help meet increased demand for gas in eastern Australia since the commencement of LNG exports in early 2015.

Gas is a key energy source for Victoria's economy. It is used to heat homes, fuel gas-fired power plants and is a key input for various manufacturing processes. Victoria has the highest rate of access to gas in Australia, with natural gas available in many cities and regional towns.

Natural gas is a vital part of Victoria's energy resources, however it is finite.

In 2017, the State Government directed the Geological Survey of Victoria (GSV) to undertake a scientific analysis of the prospective resource volumes¹ of undiscovered onshore conventional gas and offshore gas available to the state.

Looking for onshore unconventional gas (fracking and coal seam gas) is not included because it was banned in Victoria in 2017.

GSV developed the Victorian Gas Program (VGP), a suite of scientific studies, which will run until mid-2020 and provide a resource estimate to inform future decisions by the Government.

The program is focussing on Victoria's two most prospective regions for undiscovered accumulations of gas: the Otway Basin (currently considered as having the highest potential for new discoveries) and the Gippsland Basin.



The VGP has three scientific components:

Onshore conventional gas: Currently there are no proven or probable (ready for imminent development) onshore gas reserves in Victoria. A suite of scientific, technical and environmental studies has been designed to provide an evidence-based estimate of prospective gas resources and assess the risks, benefits and impacts of any exploration or production. These studies are being overseen by Victoria's Lead Scientist and a Stakeholder Advisory Panel made up of farmers, industry, local government and environmental and community groups.

Offshore gas: Work to support commercial exploration for further discoveries of gas in the offshore Otway Basin will be undertaken.

Underground gas storage: Opportunities for further underground gas storage in depleted fields in the onshore Otway Basin are being investigated.

This scientific work is supported by regular engagement with farmers, industry, local government and regional communities. There is also provision for land resource planning and potential regulatory reform in response to the findings of the scientific studies.

The GSV has established a team of scientists, technical and engagement specialists at Warrnambool for the duration of the program.

All study results will be made publicly available.

An overview of the various program activities is provided overleaf.

¹ Accumulations of gas are classified as either resources or reserves, depending on the level of certainty with which the quantity of gas has been determined. The level of certainty is dependent on the amount of exploration and testing that has occurred. If the accumulation is highly uncertain, it is termed a 'resource'. If the quantity of a gas accumulation can be quoted with confidence and it is economical to extract, it is classified as a 'reserve'.



1. Onshore conventional gas

The scientific studies include:

Rock characterisation studies to analyse geoscientific data and rock samples to understand the properties of rock layers (e.g. porosity, permeability, organic content).

Three-dimensional geological models to provide insight into where gas may be present, as well as the nature and location of groundwater. This will inform the assessment of the risks, benefits and impacts of onshore conventional gas.

Gas prospectivity and resource estimates based on these studies will then be developed for the Otway Basin and the onshore Gippsland Basin.

Environmental studies will investigate and benchmark groundwater, soil and atmospheric conditions in the Otway and Gippsland Basins; and obtain information on risks and impacts to the environment. Studies in south west Victoria will also determine the environmental condition around each existing petroleum exploration well and assess the potential groundwater impact if conventional gas development occurred.

Targeted stratigraphic drilling may be carried out in the onshore Otway Basin to fill gaps in geological knowledge of the area and increase certainty of the gas prospectivity and resource estimates.

2. Offshore gas

The Victorian Government has released new offshore acreage in state-controlled waters in the Otway Basin in 2018 to encourage commercial gas exploration.

An airborne gravity survey is to be conducted in 2018 over approximately 16,000 square kilometres of the Otway Basin (onshore and offshore). The survey will measure minute differences in gravity. These gravity variations can be interpreted to glean information about the density and shape of geological structures. The data will feed into the new 3D geological model of the region.

3. Underground gas storage

The potential for further underground gas storage in depleted fields in the onshore Otway Basin may help secure more reliable gas supplies and to mitigate short term price peaks, particularly during interruptions in the gas supply system. Work will include:

Ranking of known existing depleted fields to prioritise their potential development for gas storage.

Analysis of geoscientific information and modelling of subsurface geological structures to assess the suitability for underground gas storage.

Assessment of the economic potential of using these geological formations for gas storage.

Supporting program components

Community engagement

An extensive and proactive community and stakeholder engagement program will ensure that communities around the VGP areas are informed and involved as the studies progress. Landholders and local residents will have access to the scientific findings and be provided with opportunities to ask questions and get answers along the way.

Frequent briefings and information sessions in the areas most prospective for gas will provide updates to local councils and communities on the geoscientific and environmental studies as well as other topics of interest, such as gas production methods and regulatory controls.

Resource planning

A detailed landscape inventory will be prepared to identify key natural resource, cultural, environmental, agricultural and other land use values in areas identified as having a higher potential for onshore conventional gas for onshore conventional gas.

These resource planning activities will ensure that future decisions about gas exploration and development include a clear understanding of community views and are appropriate to the local land uses and features.

Regulatory improvements

Later in the program, a comprehensive regulatory review will also be undertaken in response to the findings of the scientific studies. A key focus will be to identify national and international best practice in gas regulation, with the aim to inform future government decisions.

Stay in Touch

Information about the Victorian Gas Program can be found at: earthresources.vic.gov.au/gasprogram

Regular technical and progress reports about the scientific studies can also be found on the website.

To be added to the Victorian Gas Program emailing list, please send a request to vgp@ecodev.vic.gov.au