

Gloucester Coal Seam Gas Project

Community
information
fact sheet

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Some questions we've been asked about
the Gloucester Coal Seam Gas Project.

Pipeline construction

Standards used to design the pipeline

The pipeline will be designed and built according to the current version of Australian Standard 2885 Part 1 **Pipelines Gas and Liquid Petroleum**. This national standard, which incorporates over 80 Australian, American and European standards, precisely details the design of pipeline and facilities. The design can be broken down into two main activities:

- **Safety management** - including route selection, identifying third party activities, future development, erosion, flooding and land movement; and
- **Pipeline design** - including steel and coating selection, valve spacing, burial depth, corrosion protection, AC interference, remote monitoring, operations and maintenance.

Details of the proposed design

The pipeline will be a buried steel pipe with a maximum operating pressure of between 10.2 and 15.3 MPa. The pipe diameter will depend on market demand. Above-ground pipeline facilities include:

- **Scraper stations** at the inlet and delivery point (Hexham);
- **Metering station** at the delivery point (Hexham);
- **Marker posts** - placed at bends and inter-visible locations at fence lines where possible to indicate the pipeline position; and
- **Cathodic protection posts** - depending on ground resistance, these are typically 3-5 km apart.

Pipeline construction

Pipeline construction involves a sequence of production-line activities. Each is managed to achieve a similar production rate averaging one kilometre per day for this project. This will need a workforce of up to 100 during the peak period. Local skilled labour will be used wherever possible, however some of the activities require specialist skills. These will be sourced from around Australia and will be housed in existing local accommodation.

The sequence of activities and a brief description of each is outlined below:



- **Clearing** - In general, a workspace up to 30 metres wide is needed for all construction activities, including stockpiling of removed vegetation. The photo above shows a typical example of a right of way (ROW).
- Heavy vegetation is cleared, with root stock left in the ground where possible to stabilise the area and reduce erosion. The vegetation will be stockpiled for respreading as part of the restoration process. Breaks will be left in the stockpiles for fences, tracks, stock and drainage areas. Large mature trees, particularly at watercourse crossings, will be preserved wherever possible.

- Temporary gates will be installed at fence crossings during construction. Permanent steel gates may be installed as part of the restoration process.
- **Grading** - The right of way is levelled as needed using graders, excavators and bulldozers. Topsoil will be stripped by grading where required and stockpiled separately for respreading during restoration;



- **Pipe stringing** - Pipe will be delivered to the right of way by trucks, unloaded and laid out on wooden skids;



- **Welding** - Pipe lengths are welded together into continuous strings of up to one kilometre;
- **Non-destructive testing** - Each weld will be inspected using x-ray or ultrasonic equipment to ensure its integrity;
- **Joint coating** - The surface of the joint is cleaned and coated to inhibit corrosion;



- **Trenching** – Depending on ground conditions, either a specialised trencher or an excavator is used to dig the trench. Exposed trench will be minimised in line with land use and prevailing weather. Breaks in the trench will be left to allow stock and wildlife to cross and methods will be implemented to prevent fauna being trapped;



- **Lowering-in and backfill** – Providing the trench is free of rocks or other material that could damage it, the pipe is lowered directly into the trench, otherwise sandbags are used to support the pipe. The trench is initially backfilled around the pipe with screened trench spoil (to remove any rocks), then with the remaining spoil ensuring the topsoil is not included;
- During backfill, the spoil is sequentially compacted to minimise subsidence. Topsoil is finally spread as part of the restoration;



- **Hydrostatic testing** – Before the pipeline is commissioned, it is hydrostatically tested to check for leaks and the pipeline integrity. Sections are filled with water and pressurised to beyond operating pressure. Any leaks identified are

repaired. The source of water for testing will be identified during the environmental assessment;

- **Crossing** – Apart from trenching, a number of different techniques can be used to cross roads, railways, and rivers including boring, microtunneling and horizontal directional drilling. The method chosen depends on geotechnical conditions, environmental constraints and avoiding interruption to other traffic and services;



- **Restoration** – Once the pipeline is complete, the right of way and work areas are restored in consultation with landowners. Restoration includes removing any construction waste, restoring the surface contours, respreading topsoil and vegetation, reseeding/ revegetation with native grasses or as agreed with the landowner.

To enable pipeline construction, the following temporary work areas will be required along the pipeline route:

- **Access tracks** – access to the ROW may be required in certain areas through private property. Permission from landowners will be requested to utilize existing tracks or install a new track in such areas. Depending on landowner requirements, the tracks may be left in place after construction or removed and the ground reinstated.
- **Temporary work areas** – these are needed to store pipe and facilities on relatively flat land outside flood prone areas. Their size and location will be clarified during the environmental assessment and on the completion of construction logistics. These areas will be arranged in consultation with landowners.

The pipeline in operation

As the pipeline is buried, most previous land use can resume, apart from excavation and deep-rooted plantings. Permissible activities will include shallow rooted cropping and pasture.

Before construction, landowners affected by the pipeline will be consulted to ensure land use is considered in the pipeline design.

General operations – The routine operation and maintenance includes ground and aerial patrols, equipment repairs, pipeline pigging and cleaning, corrosion monitoring and remediation, easement, lease and access road erosion maintenance. Ground or aerial inspections monitor activities on or near the easement, erosion, revegetation and weed control.

Cathodic protection – Along with the pipeline coating, a cathodic protection system will help prevent corrosion of the pipeline.

Supervisory control and data acquisition system (SCADA) – This system will continuously monitor pipeline operating conditions such as pressure, temperature, gas flows, valve status, cathodic protection and gas quality. This will be relayed by radio to a control room. The SCADA system will allow the operator to remotely control pipeline parameters such as operating pressure, open and close valves, and gas flow rates.

Pipeline protection – Damage to the pipeline will be minimised by ensuring it has adequate cover, is well marked with signposts and registered with Dial Before You Dig. The easement will be patrolled regularly to check for construction and earthmoving activities and local contractors will be educated about the safety procedures of working near gas pipelines.

A safety management study will be completed as part of the pipeline design to identify potential threats along the pipeline corridor. Mitigation measures will be incorporated into the design to adequately protect the pipe from any potential threats.

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