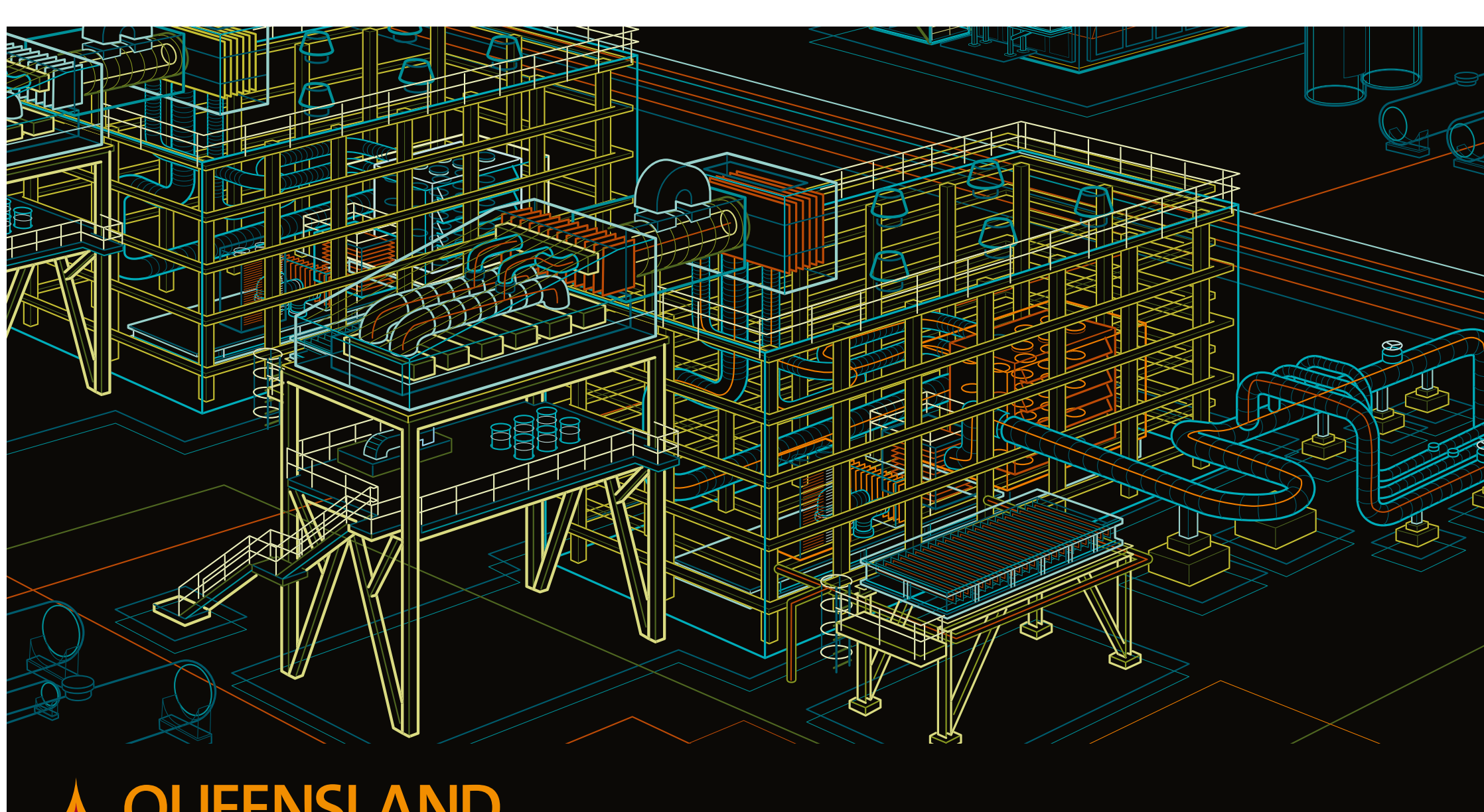
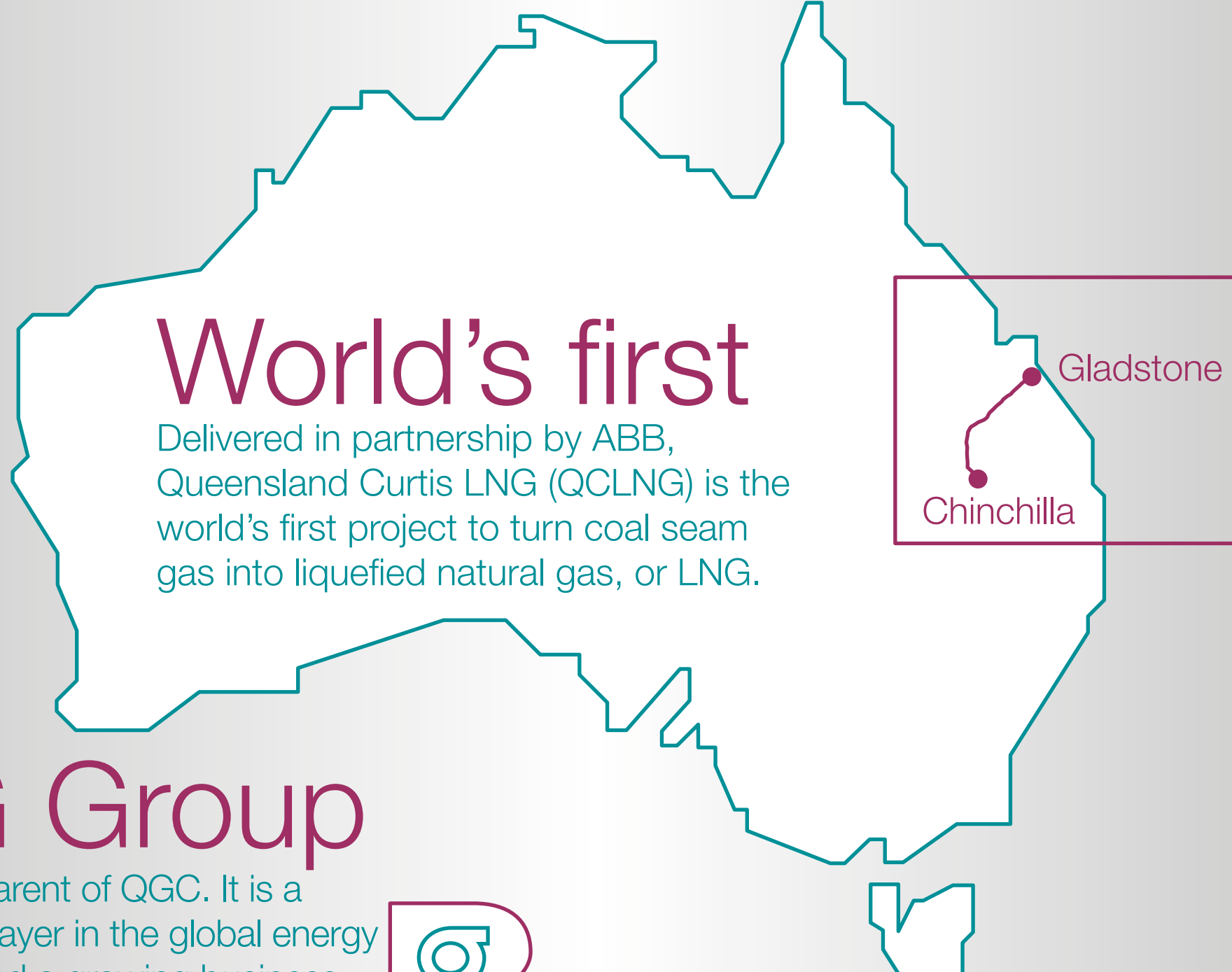




A BG Group business

Integrated automation, electrical and telecommunications



World's first

Delivered in partnership by ABB, Queensland Curtis LNG (QCLNG) is the world's first project to turn coal seam gas into liquefied natural gas, or LNG.

BG Group

...is the parent of QGC. It is a leading player in the global energy market and a growing business with operations in more than 25 countries over five continents.

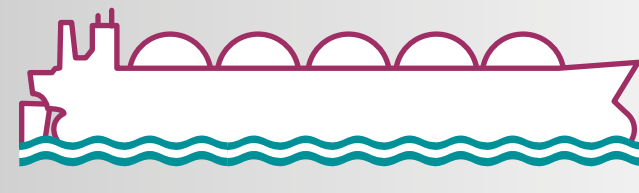


Gladstone

There are two train liquefaction plants, producing up to 8.5 million tonnes of liquefied natural gas per year.

Transport

Gas is transported to the liquefaction facility in Curtis island, near Gladstone. Here it is chilled to minus 162 degrees, until it becomes a liquid and condenses to about 1/600th of its original gaseous volume. This makes it easier to store and ship with more than 70 cargos being distributed globally in the first year (2015).



540 km

... is the length of the underground pipeline network linking the gas fields to Gladstone - the same distance as London to Glasgow.



250 trillion

...cubic feet of gas reserves are estimated to lie beneath Queensland and New South Wales - enough to power a city of 1 million people for 5,000 years.

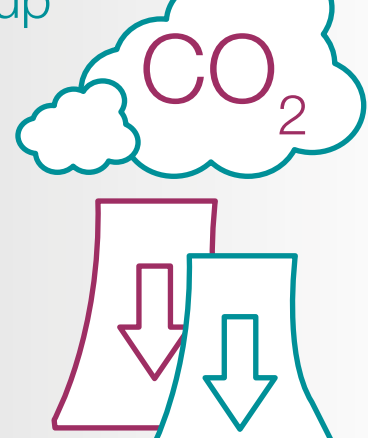
Working Safely

ABB has worked over 750,000 hours on the project without any lost time incidents- this is equivalent to 400 man years.



Emissions

Coal seam gas produces up to 70% fewer greenhouse gas emissions than coal and about 20% fewer carbon dioxide emissions than oil when burned to create the same amount of electricity.



Integrated Operations

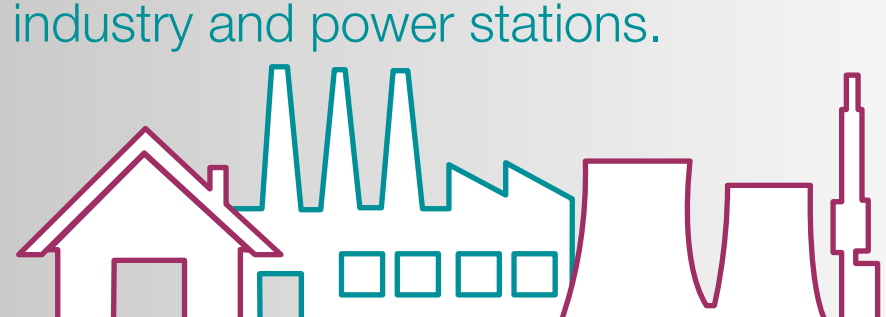
Multi-discipline collaboration brings a streamlined and efficient approach to plant operation. Equipment is operated and maintained effectively. Real time analytics allow data to be viewed from anywhere.

Cyber Security

...protection against deliberate or accidental incidents is increased through a secure system architecture, advanced user control, host based firewalls, continuous security patches and a secure by-design philosophy.

Natural gas

Natural gas from coal seams is the same methane used in homes, industry and power stations.

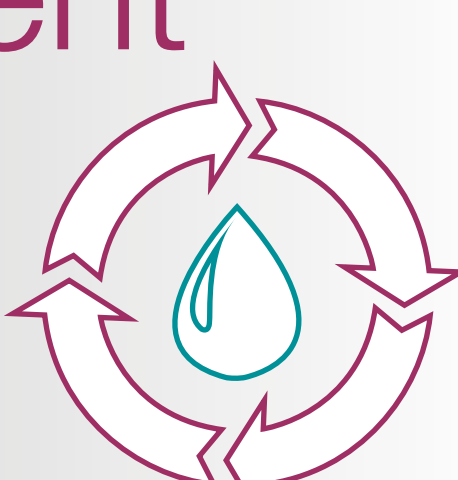


Construction

The project, which started construction in 2010, started producing LNG in 2013 and continues development today.

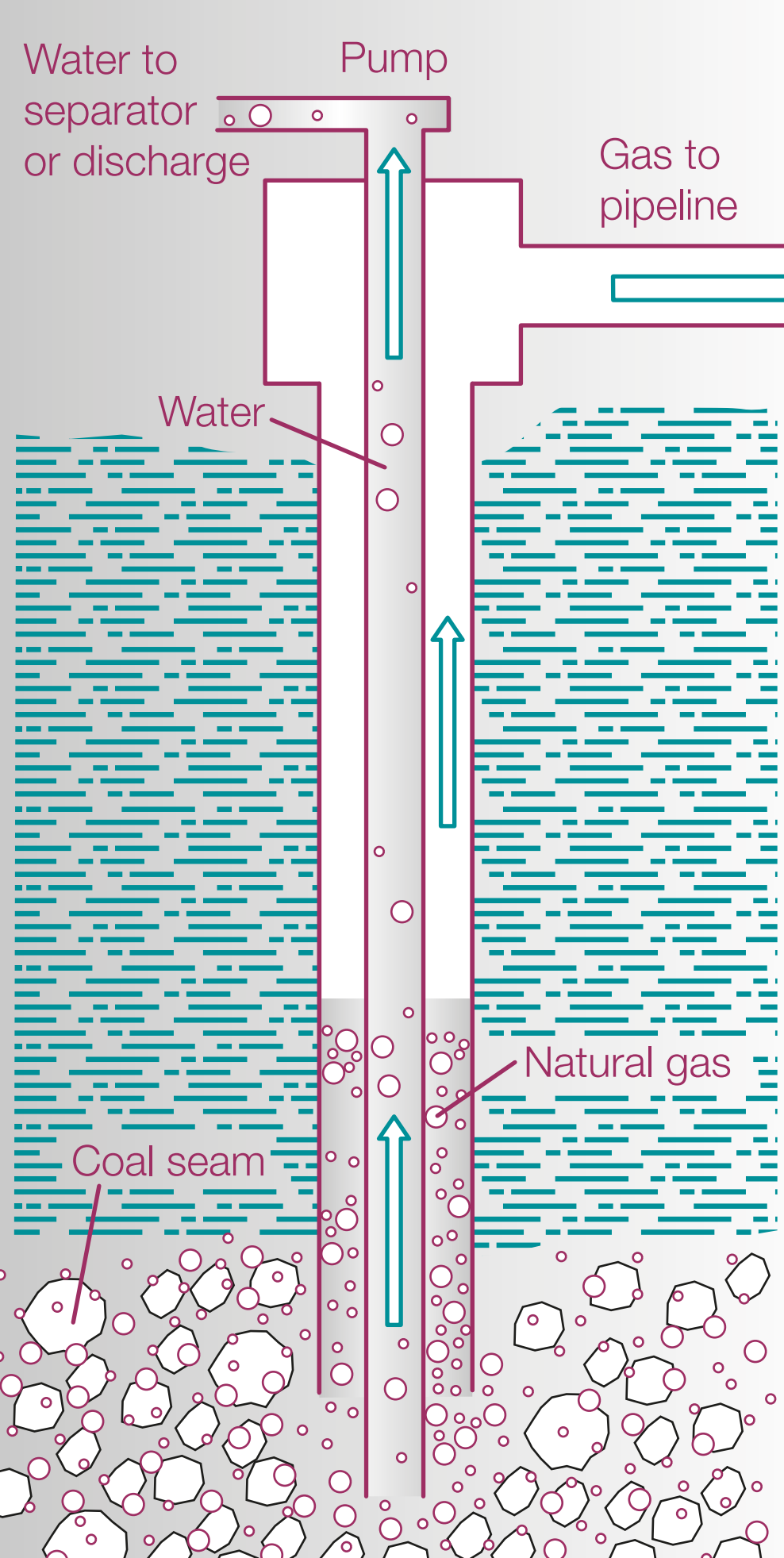
Water treatment

Water separated from the gas is processed through a water treatment plant where it is utilized by local industry, communities and farming.

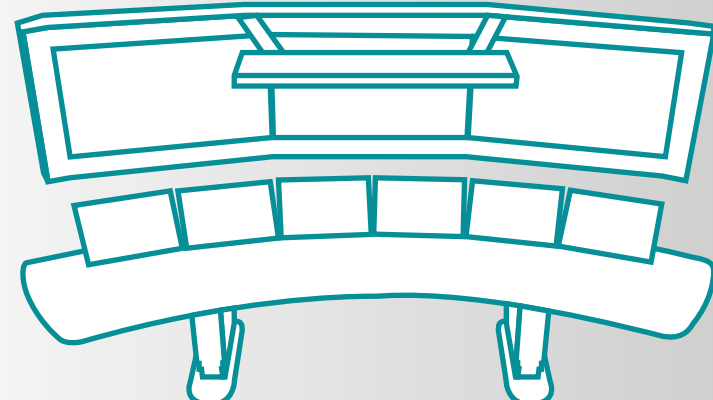


>8000 wells

...expected during the project lifetime. Currently 2500+ (2015)



System 800xA



Enables integration of the entire plant, providing a versatile system that goes beyond the control of the process - optimizing efficiency, asset utilization, safety and energy savings.

CCTV



Telecom solutions include CCTV, perimeter intruder detection and hotline services that support safety and security of the people and sites.

Electrical Integration

Use of the IEC 61850 communication protocol allows integration of the electrical devices with the integrated control and safety system (ICSS). This means that substation equipment and process instrumentation can be monitored and controlled by the System 800xA platform. This minimizes operational costs including travel and allows real-time decisions to be made to optimize production.

Power management system

Fully integrated with the ICSS and provides control, supervision and management functions for power generation. Ensures a reliable and stable energy supply to the plant through load shedding, load sharing, generator control and synchronization.



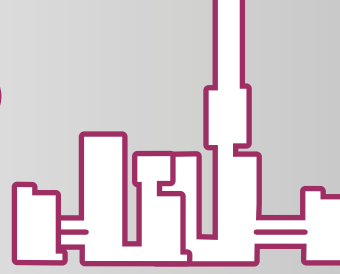
Alarm management

A key aspect to support plant safety; helping operators to take effective action to avoid disastrous situations and allow trend analysis to enable KPI improvement.



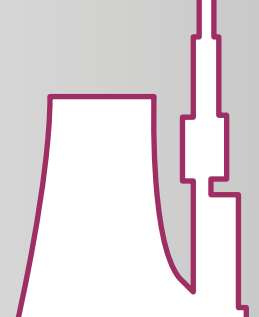
23 FCS

Each field compression station (FCS) includes one automation instrument local equipment room (ILER) and a panel mount human-machine interface (HMI) at each station to display electrical signals.



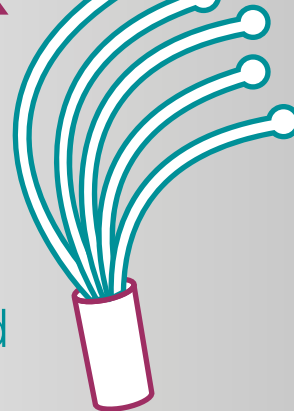
6 CPPs

Central processing plants (CPP) raise the gas pressure from 1,300 kPag to pipeline export pressure, dehydrates the gas to export quality using triethylene glycol (TEG) and routes the gas into the collection header for onward transport to the LNG plant.



Fiber optic network

The telecoms fiber optic infrastructure provides a highly resilient and fault tolerant connectivity for segregated enterprise and process control networks.



Integrated Team

Working as a unified team with QGC enables increased co operation and team work which results in early delivery of ICSS, production gains, improved efficiency and cost savings.



Chinchilla

A 24 hour control room in Chinchilla lets QGC operators monitor and regulate the operations of wells, processing facilities and the pipeline. The information is shared with the monitoring center in Brisbane which also oversees the operations in Gladstone.



Brisbane

