

QCLNG PIPELINE CASE STUDY

QGC Pty Ltd , the Australian subsidiary of BG Group, created a 540 kilometre steel gas pipeline to connect the gas fields of the Western Downs to a liquefied natural gas (LNG) plant on Curtis island in 2013.

The details were provided online to the public and it has given us a perfect case study to compare a traditional approach to the more advanced and innovative WNR Systems method.

QCLNG Pipeline Specifications

Pipeline: more than 540 kilometres

Diameter: 42 inches or 1.07 metres

Pipe length: 12 metres

Number of pipes: 46,200

Weight: each pipe is 4 tonnes

Burial depth: up to 1.5m

Operating life: 40 years

Work force: more than 1,575 at peak construction for a total of 12 million working hours

Travel: Project vehicles travelled more than 44 million kilometres

Extra fusion bonded epoxy coating and cathodic protection added to prevent corrosion



Approximate cost comparison in AUD

	Traditional Steel Pipes	WNR Systems	% Saving
Cost of 12 metre, 1.07 metre diameter, 4 tonne pipes and flanges.	\$733,358,472 (\$15,873.56 per pipe) (figure based on costs from Van Leeuwen Pipe and Tube)	\$313,346,880 (\$6,782.40 per 12 metre lengths, weight 980kg)	57%
Cost of 12 million working hours at \$60 per hour average	\$720,000,000	\$2,880,000 (based on 25 employees per shift x 2 x 8hr shifts x \$60/hr wage x 120 days)	100%
Project Vehicles - depreciation - fuel	\$66,000,000 (@ \$1.50 / km) \$17,600,000 (@ \$0.40 / km) (44 million kms travelled)	\$18,000,000 (@ \$1.50 / km) \$4,800,000 (@ \$0.40 / km) (12 million kms travelled)	73% 73%
Epoxy Coating	\$36,498,000 (\$790 per pipe x 46,200) (40 years lifespan)	N/A with fibreglass (100 years lifespan)	100%
TOTAL	\$1,573,456,472	\$339,026,880	78%

Notes: Only working this WNR SYSTEMS machine at 60% of capacity for the above figures. Eg. Laying 4.6 kms of pipeline per 16 hour day with 50 personal employed on site – 25 employees per 8 hour shift. 554 kms of pipeline divided by 4.6 kms per day = 120 working days to complete this pipeline using only one WNR SYSTEMS machine. If working to full capacity, 16 hours per day the 554 kms of pipeline would be completed in 74 working days with the same machine. Fewer employees are needed since less clearing, trenching, handling and backfilling is required. Therefore less fuel to operate the project vehicles would be required. Please see brochure for more information.