Syngas POWER

CHEAPER CLEANER AND SAFER ENERGY FROM COAL

QUESTIONS AND ANSWERS (Q & A)

Why SYNGAS will be part of Australia's and The World's energy supply mix in the near future.

What is "Syngas"?

Syngas is a mixture of hydrogen H_2, carbon monoxide CO, methane CH_4, carbon di-oxide CO_2 and nitrogen N_2. For a description of how syngas is produced, please refer to page 4.

What is the Value to Australian and World-Wide Industry?

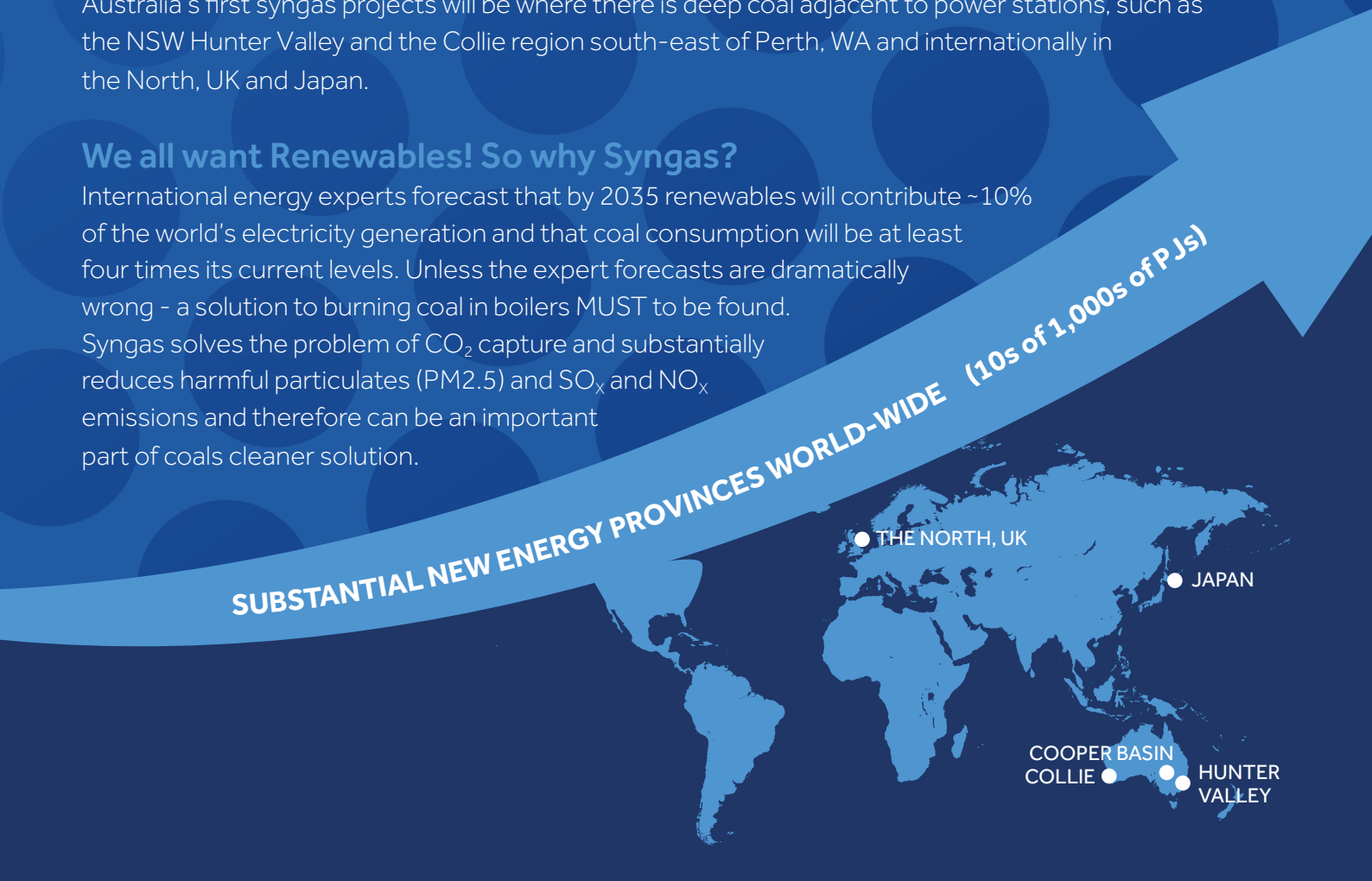
Syngas is a long-term, secure, price-competitive local source of energy NOT exposed to export market pressures. Its consumers will be local Australian and local World-Wide industries, including power stations, alumina plants, cement works, brickworks, methanol, DME, fertilizer and gas-to-liquids plants.

Where are the Prime Syngas Production Targets?

Australia's first syngas projects will be where there is deep coal adjacent to power stations, such as the NSW Hunter Valley and the Collie region south-east of Perth, WA and internationally in the North, UK and Japan.

We all want Renewables! So why Syngas?

International energy experts forecast that by 2035 renewables will contribute ~10% of the world's electricity generation and that coal consumption will be at least four times its current levels. Unless the expert forecasts are dramatically wrong - a solution to burning coal in boilers MUST to be found. Syngas solves the problem of CO_2 capture and substantially reduces harmful particulates (PM2.5) and SO_x and NO_x emissions and therefore can be an important part of coals cleaner solution.



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What are the Cost Implications?

Syngas $ per GJ is site and coal resource specific. Syngas will be price-competitive with pulverized export-coal delivered to a boiler anywhere in the world. The price of synthetic natural gas (SNG) processed from syngas is projected to be competitive with Australian (NSW, QLD, VIC & WA) and International gas prices in any number of jurisdictions including UK, Japan, China, South Korea, India & Europe.

Return on Investment?

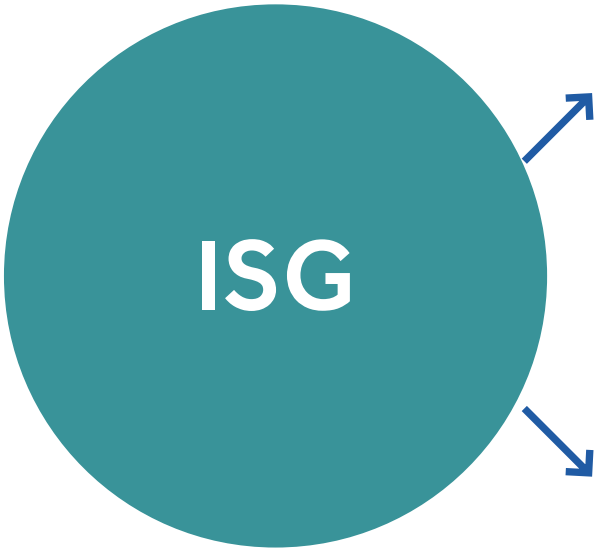
ROI depends on the syngas sale price and the specific project OPEX and CAPEX. ROI projections will be gained from planned scoping and feasibility studies.

What are the first Syngas Delivery Projects?

Co-fuelling coal-fuelled power station boilers with syngas produced from deep coal in the vicinity of the coal-fuelled boilers.

What is the Syngas Delivery Starting Point?

Approximately $2.0 million is required to perform a site specific scoping study in collaboration with suitable clients. SPPL has signed a collaboration agreement with an eminently suitable NSW Hunter Valley client and a coal access agreement for approximately half the WA Collie Basin's deep coal.



NOW

- co-fuelling coal-fuelled power stations boilers
- alumina smelters, cement works & brickworks (around Australia and the world)
- processing syngas to synthetic natural gas (SNG) to natural gas pipeline specifications

FUTURE

- DME (around the world and especially China)
- Methanol, Urea, other chemical and gas-to-liquids plants, and
- the coming hydrogen economy

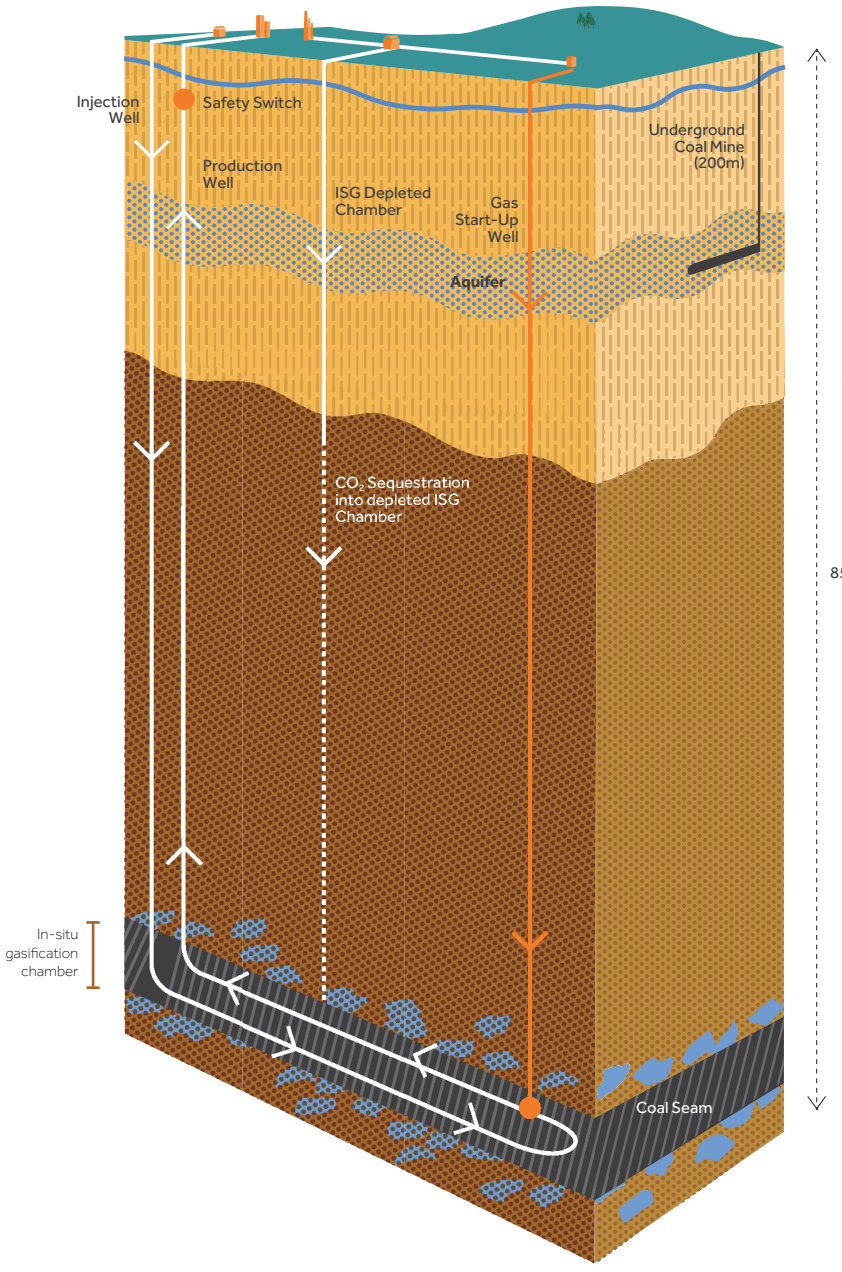
Why SYNGAS will be part of Australia's and The World's energy supply mix in the near future.

Is Syngas Production Environmentally Friendly?

No coal, overburden or ash is moved and a minimal amount of water is used. It has the lowest surface foot print of any energy source. Gasification is at pressures (~15%) below the natural hydrostatic pressure ensuring the retention of contaminants in the chamber. Fracking is NOT needed. Established oil and gas industry processes are used to clean the raw syngas, safely treat pollutants and separate out CO_2.

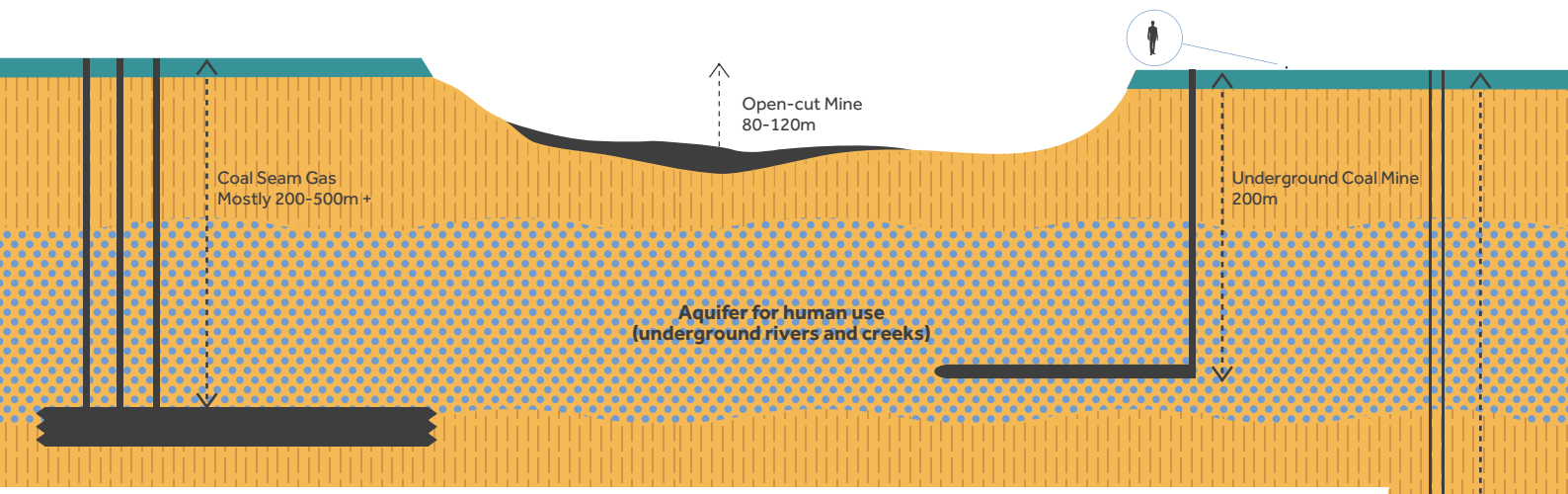
Can Syngas Production Obtain a Social License to Operate?

Syngas production will NOT disrupt or disturb farming, grazing, stud animal breeding or vineyard country. The proposed sites for syngas production are hundreds of metres below mined-out coal mines or currently operating open-cut or underground coal mines.



Will Coal-Fuelled Power Stations Consider Co-Fuelling Syngas?

Operationally syngas delivers to a power station a number of advantages over pulverized coal. After the coal fuel bill the three biggest coal-fuelled boiler operational and maintenance costs are: 1. grinding to produce pulverized coal, 2. capturing and removing ash from the boilers, and 3. the abrasion and erosion of thin boiler walls caused by coal ash. Syngas does not contribute one cent to these operational and maintenance costs.



How is Syngas Produced?

Syngas is produced from chemical reactions by the application of heat, water and air or oxygen to coal in a closed space. Syngas produced in above-ground chambers is a major industry world-wide.

What is In-Situ Syngas?

In-situ syngas is sourced from the in-situ gasification of local deep (>850 meters) coal seams hundreds of meters below aquifers used for human consumption, agriculture or industry. In-situ gasification is essentially the same as above-ground gasification, but without the cost and environmental impact associated with mining the coal and bringing it to the surface. In this document 'syngas' refers to 'in-situ syngas'. Please refer to the diagram on this page.

Is Syngas Production Safe?

Hundreds of meters of rock strata create an impermeable barrier between the gasification chamber and aquifers used for human activities. Production wells are constructed to oil & gas industry standards. Turning off the air/oxygen-supply tap immediately stops gasification.

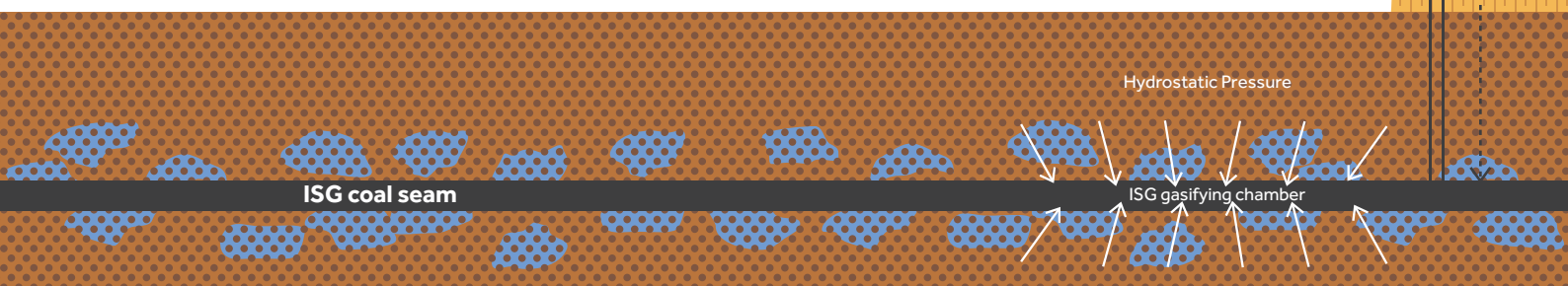
What is the Access to Infrastructure and Pipelines?

Infrastructure on mined-out or currently mined brown-fields sites will be used. Syngas will be delivered to clients by dedicated local short (<50 kms) pipelines.

Has Syngas a Strategic Future in the Power Industry?

Over 60% of the coal-fuelled boilers in the western-world will reach their used-by-date by 2020. Due to ever more stringent western world Government emission regulations, coal-fuelled boilers at the end-of-life will not be replaced. Low-CAPEX, high efficiency (~60% compared with ~45% for coal-fuelled boilers) low-emission combined cycle gas turbines (CCGT) fuelled by syngas - NOT natural gas – are the likely replacement plant. Syngas is forecast to be significantly cheaper than natural gas in most jurisdictions in the world. The exceptions currently are: North America, the Middle-East and Russia. Syngas can be the fuel of choice for future CCGT plants.

Note: One of four 500 MW Macquarie Generation's Liddell NSW coal fuelled-boilers is slated to come off-line in 2017-19.



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