

Cool plant start-up prospects warm

By Haydn Black

AN INDEPENDENT, CLEAN and green gas processing plant operating within the South Australian part of the Cooper Basin appears increasingly likely to crystallise over the next 12 months.

Using Cool Energy's CryoCell technology, the proposed Middleton plant will strip the carbon dioxide from a range of recent new gas and condensate field discoveries drilled in and around the Great Artesian Oil and Gas-operated PEL 106.

If it goes ahead, the plant will open the door for commercialisation of smaller, high CO₂ fields that dot the Patchawarra Trough and the extraction of associated gas and condensate.

Tested

Developed and tested in Western Australia, CryoCell cryogenically captures CO₂ gas in liquid form, ready for geosequestration, or potential sale for use in enhanced oil recovery programs.

Cool managing director Jessie Inman declared the unlisted company, which is partially backed by Woodside Petroleum and Shell Technology Ventures, was making the transition from a purely research and development company to a commercial entity.

"Our goal is to have five to seven CryoCell gas plants, each producing between 50-200 million cubic feet per day within the next seven years, however this Cooper Basin project will be the most important, because it will be one of our first commercial plants," she said.

"Our business model will see us licence the technology, and there will be a royalty fee for processing CO₂, but beyond that we would like to take a small equity position in the early plants so we can have a seat at the table.

"It is essential for us that this (first) plant is built and operated correctly, and that we are there to ensure the plans are implemented in accordance with the design."

FEED

The Cooper Basin plant, which is undergoing initial front end engineering and design (FEED), will almost certainly have a development cost of more than \$100 million.

It is slated to take gas from the



Jessie Inman at the CryoCell trial plant located on the Xyris field in WA.

Middleton, Roscco, Cadenza, Paprika and Udacha discoveries, all part of Great Artesian's assets.

"One of the unique features of our plant is the high recoveries of LPG, which is part of the CryoCell process," Inman said.

The plant design has already trebled from processing 20 million cubic feet of raw gas per day to 60 mmcfpd, indicating the level of confidence the partners have in the project.

Cool and Great Artesian are in discussions with other non-Santos gas resource owners. Inman declined to elaborate on any discussions.

"We are contracted with Great Artesian, but there are other companies in the Cooper Basin who are interested in putting their gas through our plant and into the market, so I think at this stage we can't know the final shape of this project or the joint venture," she said.

Size

One company that had expressed an interest in joining in a potential gas pooling was the former operator of the PEL 182 JV, Eagle Bay Resources.

The company expressed an interest in processing its 15 billion cubic feet Vanessa gas discovery through the plant, telling the Australian Stock Exchange that third party gas processors needed to amalgamate some 75 bcf.

However, Inman told *Oil&Gas Gazette* the minimum commercial threshold was much lower.

"We believe there are large quantities of gas through PEL 106, 104 and 182, so the potential total for future gas resources is very high," she said.

"The plant will have a significant

turn-down capability to cope with future fluctuations in the gas stream as fields decline and new fields are tied in."

A key stage of the gas plant will be linking to markets, which will probably be achieved via an independent gas pipeline, rather than negotiating access agreements with the existing pipelines.

The CO₂ will probably be re-injected into a depleted reservoir.

"We've identified some areas for geosequestration, but we'll need more detailed study on which one we will use," Inman said.

The CO₂ sequestration will require its own trial phase.

"It will almost be an R&D project on its own, and the South Australian Government is very keen on ensuring it happens.

"We believe we'll learn a lot through that part of the project that we are willing to share with the State and Federal Governments."

Global plants

Cool is already looking seriously at exporting its CO₂ capture technology to the world to facilitate the exploitation of high-CO₂ stranded gas fields.

The company has signed a memorandum of understanding with Pertamina to assess potential gas fields with CO₂ levels.

Inman believes that a second CryoCell plant will be built somewhere in Indonesia, which is struggling to maintain a domestic gas market and has recently scaled back its liquefied natural gas exports to channel gas into feeding its domestic needs.

"We're aiming to take our project sizes up from the smaller to medium range over the next five years, probably between 50-200 mmcfpd."

Projects in North America, Europe, Malaysia and Thailand could also follow as Cool grows, and as markets become comfortable with the CryoCell technology.

With CryoCell on the path to commercialisation, Inman said the company was now considering a field trial for a new flue gas technology.

The Xyris trials will continue, to help refine the CryoCell process, geosequestration trials, and to trial flue-gas technology over the next two years.