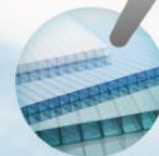


ClubCO₂

CO₂ Utilisation in Australia

Michael Malavazos

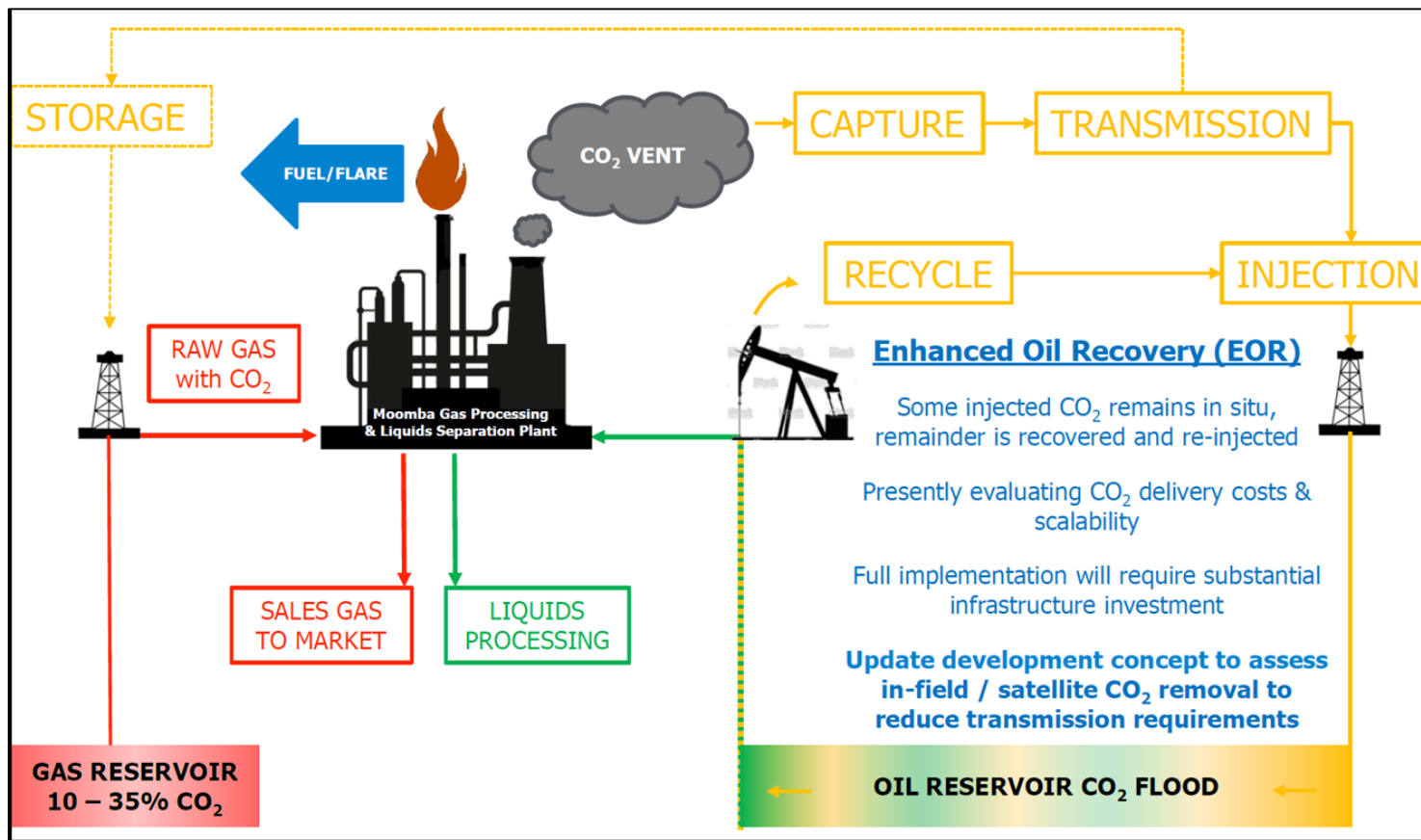
International overview
of CO₂ Utilisation Symposium



CO2 Use in Australia: EOR Potential



CO2 Use in Australia: EOR Potential



CO2 Use in Australia: Mineral Carbonation Potential



CO₂ Use in Australia: Mineral Carbonation Potential

- Mineral Carbonation International Pty Ltd (MCI), a joint venture between the Greenmag Group, Newcastle University and Orica, received grant funding of up to \$3.04 million from the Fund to develop and optimise a promising method of utilising CO₂.
- The Mineral Carbonation process mimics and accelerates the Earth's own carbon sink mechanism process, whereby CO₂ is captured in mineral deposits and then stored in rocks. These solid products can be used in various applications including building materials.
- The project is being conducted by a multi-disciplinary team of researchers, and chemical and industrial engineers and is being co-funded by Orica and the Commonwealth Government. This cutting-edge project could position NSW as a world leader in the building and operation of mineral carbonation plants.
- Currently the research team has built and commissioned a batch plant and a semi continuous plant at the University of Newcastle. All milestones have been met and the research is on track to be completed successfully.



CO2 Use in Australia: Mineral Carbonation Potential

The aims of the project are to:

- 1) decrease the cost for storing CO₂ by mineral carbonation by 40%;
- 2) decrease the energy intensity by 40%;
- 3) develop new, and improve the existing, unit operations to optimise the process and test these unit operations in the demonstration plant;
- 4) identify and optimise the production of offsets, such as pavers and bricks or metal ores; and
- 5) identify suitable locations in New South Wales for sourcing feedstock for the demonstration plant



Australia: National Policy background

- Commonwealth (federal) and state legislation in existence since early 2000's to permit and regulate CCS and CCSU projects
- Renewable Energy Target (RET)– dominating factor in Australian Emission Reduction Policy scheme over the last decade
- Moving to an Emissions Reduction Target (ERT) type Scheme through recent National Energy Guarantee (NEG) Initiative



Australian CCS Projects

- NSW CO2 Storage Assessment Program looking at the geo-sequestration potential of the Darling Basin
 - outcomes from this Project may lead to a future acreage release program by developing pre-competitive data
- Western Australia South West Hub project:
 - government and industry partnership researching the geotechnical feasibility of CO2 geo-sequestration in the southern Perth Basin
 - Modelling of CO2 storage using acquired geotechnical data expected to be completed July 2018
 - FID for further drilling expected mid-2019



Australia CCS Projects

- CO2CRC Otway Basin CO2 Storage Demonstration Project:
 - Demonstrated safe injection and storage of CO2 into a depleted gas reservoir - **completed**;
 - Demonstrate safe injection and monitoring into a saline formation – **expected completion in 2019**;
 - Demonstrate safe, reliable and cost-effective subsurface monitoring of CO2 – **expected completion in 2028**
- Chevron Gorgon Project:
 - CO2 Injection expected to commence end of 1st Quarter 2019

