



Low Carbon Solutions

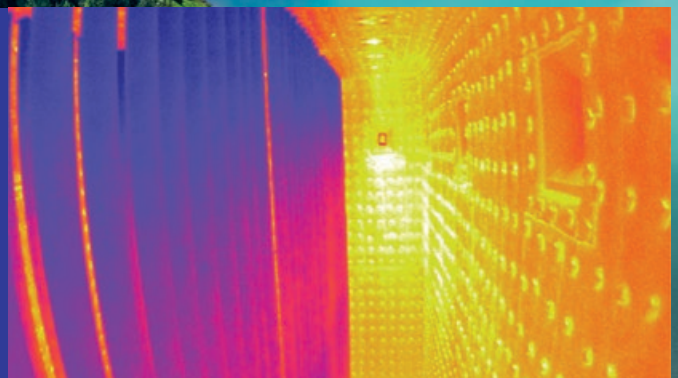
Syngas producers are searching for areas that they can address near term to decarbonise at their sites. In response to this need Johnson Matthey (JM), building upon years of reforming and syngas technology leadership, has set out to create a Low Carbon Solutions (LCS) business to help customers navigate decarbonisation.



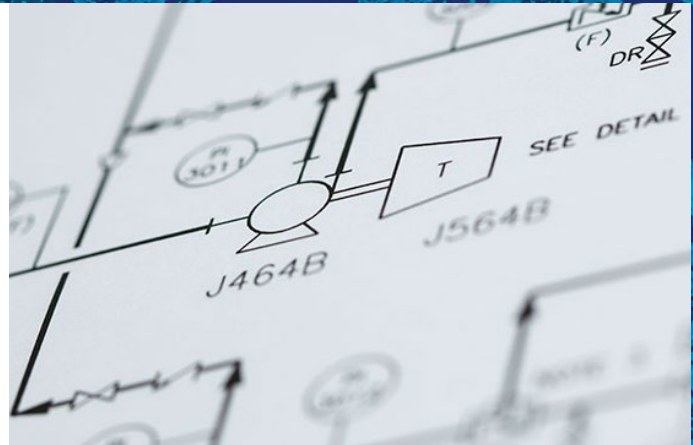
JM's advanced reforming technologies, such as gas heated reforming (GHR) and autothermal reforming (ATR) can be used to help shift the lower quality post combustion CO₂ of the steam methane reformer (SMR) that can be difficult to capture, to more consistent precombustion CO₂ which is at pressure and easier to capture within the process. These advanced reforming technologies as well as JM water gas shift technologies (LTS, ITS, and MTS) improve the efficiency of syngas production reducing the overall CO₂ emissions.

SMR firing reduction

- Address low quality post combustion CO₂ emissions
- Shift heat load from SMR with advanced reforming JM adiabatic pre reformer / JM GHR / JM ATR
- Increase efficiency - lower S/C operation
Add JM LTS, ITS, or MTS



And as operators look to utilize CO₂ laden streams within their site, JM's world leading methanol process technology and catalysts offer a low carbon route to produce methanol, an important chemical intermediate integral to today's petrochemical markets and poised to become an important part of future energy. As the CO₂ streams are captured, JM's range of purification catalysts and absorbents are available to remove traces of contaminants from hydrocarbon gases and liquid streams.



We understand the difficulties of navigating government targets and regulations. As JM operates around the globe, we have a good understanding of the regional carbon legislation, taxation and incentives and use this understanding through our advisory services to guide our customer's decarbonisation approach. JM can assist in shaping your plant specific decarbonisation strategy and can conduct techno economic studies on carbon intensity reduction options.

CO₂ integration

- Use CO₂ laden streams
- Producing chemical intermediate with JM Methanol technology
- Purifying streams for capture / integration with JM Purification

Advisory services

- Regional carbon legislation taxation incentives understanding
- Assist in shaping plant specific decarbonization strategy
- Techno – economic studies on carbon intensity reduction options