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Our process



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Our technology combines the two stages of the GTL process into one highly efficient, closely integrated system, designed to give high levels of volumetric efficiency, safety and reliability.

At the heart of the process are two banks of modular reactor blocks. Using an advanced derivative of plate and fin heat exchanger technology, these reactors allow the precise control of heat and gas flow over the proprietary metal supported structured catalysts, located in a regular array of thousands of closely spaced channels. The first reactor uses Steam Methane Reforming (SMR) to convert natural gas into syngas, a mixture of carbon monoxide and hydrogen. The syngas is then fed into the second reactor where it is converted via the Fischer-Tropsch process into synthetic crude oil, water and a 'tail gas' composed of hydrogen, carbon monoxide and light hydrocarbon gases.

At a glance

- **Natural gas conversion to syngas by Steam Methane Reforming**
- **Syngas conversion to syncrude by Fischer-Tropsch synthesis**
- **Tail gas recycled as fuel to heat the SMR reactor**
- **Waste water recycled to feed the SMR process**

The close relationship between the two reactors in the CompactGTL process is a vital element in the efficient management of the overall system. The two reactions are tuned to work together so that the tail gas is recycled back to provide fuel for catalytic combustion in the SMR reaction and for on-site power generation. The water produced in the Fischer-Tropsch reaction is treated to remove impurities and recycled back into the steam reforming process. The use of steam reforming and the recycle of both by-product streams enables the design of a highly self-contained plant operating a stable process that does not require an oxygen supply. It also means that there are only small volumes of fluids in the process, which makes the system insensitive to wave motion in the offshore environment.