



FEASIBILITY & CONCEPT STUDIES

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Our people have worked on numerous studies over the years including the following:

- ✓ Study to develop capital costs for OSBL items at 4 sites for a new grassroots 400,000 BPSD export refinery and associated petrochemical complex.
- ✓ Study for Proposed New Grassroots Refinery, Southern African Region
- ✓ Market analysis of product supply and demand in the region, to determine refinery throughput and configuration to satisfy market including:
 - Definition of all processing, auxiliary, & utility units to the level of sized equipment lists,
 - Tankage / product movement facilities,
 - Infrastructure requirements,
 - Developing capital cost estimate to +/-30% accuracy,
 - Financial analysis to assess viability of venture.
- ✓ Gas Project Expansion Project which included:
 - Concept study for the expansion of the existing operation through the addition of 14 new well sites,
 - 26kmHDPE has gathering system and spine line,
 - Infield 32TJ/day Booster Station compression station and new pipeline to the existing gas plant
 - Basis of design and Concept Selection reports,
 - Preliminary pipeline, piping, valve and major equipment MTO's,
 - TIC estimate for HDPE gathering system and pipelines.
- ✓ Gas Injection Storage Project which included:
 - Concept Design of a 32TJ/day coal seam gas underground plant.

- ✓ Gas Storage
 - Concept design for the upgrade of the compression facilities at a gas plant,
 - development of dynamic models of pipeline feeding the gas plant and liquids handling section of the plant to assess liquids handling capacity,
 - evaluation of the gas plant capacity to accommodate unprocessed feed gas while maintaining sales gas to specification.
- ✓ Gas Development Project Concept Engineering
 - Selection and assessment of suitable gas treatment technology to upgrade the existing gas plant to accept fluid from the gas field,
 - process capacity checks of existing equipment,
 - development of HYSYS (dynamics) process models,
 - assessing environmental regulations and requirements for the disposal of gas containing H₂S,
 - wastewater treatment,
 - review of existing flare / blowdown system and introduction of a staggered blowdown system
- ✓ Ethane Disposition Study
 - Assess alternative short and long term dispositions for ethane produced at the gas plant.
 - Analysis of plant operating data to determine ethane, propane and butane recovery into LPG under different operating modes from maximum recovery to rejection,
 - Process simulation of a Gas Plant and assessment of their operation with new deethaniser Preparation of sized equipment lists for deethaniser trains and associated refrigeration equipment,
 - Developing capital cost estimate to +/-30% accuracy.