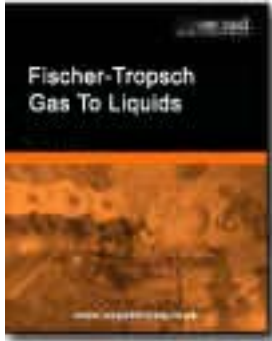


Fischer-Tropsch Gas to Liquids Report



By converting natural gas into liquid fuels, the technology greatly reduces high transport costs which in the past has prevented its access to distant markets. This technology is destined to provide an important element in the future landscape of the energy industry. Every major oil and gas company is now energetically participating in further research and development of the technology. The Report outlines the principal versions of the F-T GTL technology, describes the contributions of the main players, and evaluates and discusses the economic, commercial and financial factors affecting GTL. On the basis of this analysis, the Fischer-Tropsch Gas-to-Liquids report assesses the potential impacts of the new technology, not only on the oil industry itself — both upstream and downstream, but also on the issue of climate change and on worldwide geopolitical relationships.

Published in September 2000

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Fischer-Tropsch Gas to Liquids Report

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Executive Summary : Introduction

- Overview
- Outline description of the Fischer-Tropsch Gas-to-Liquids (F-T GTL) process and the present status of its development

Chapter 1 : Why the development is important

- to substitute the low costs of liquids transport for the high costs of gas transport
- to commercialise otherwise unmarketable natural gas
- to increase future supplies of liquid hydrocarbons in face of long-term rising crude oil costs: thus to provide an alternative to OPEC dominance of future energy supplies
- to supply environmentally friendly automotive fuels to meet governments' post-Kyoto targets
- Which are the principal companies and governments participating in the development
- oil & gas companies
- contractors & consultants
- governments & international organisations
- How soon will the development become commercially significant in the international energy business

Chapter 2 : Brief History

- Research in the 1920's in Germany by Drs. Fischer & Tropsch. Use of the process to produce liquid fuels from coal in Germany during World War 2 and by SASOL in South Africa during the embargo years.
- Mobil's GTG (gas-to-gasoline) process used commercially in New Zealand in a plant which went on stream in 1985
- Shell's SMDS plant based a on natural gas which went on stream at Bintulu in Malaysia in 1993
- SASOL's development and implementation of its processes based on natural gas
- Moss gas plant in South Africa on stream in 1992
- urrent international projects and alliances
- Exxon builds process development units at Baton Rouge La. in 1989/90 leading to ExxonMobil's present highly patented AGC-21 technology
- BPAmoco/Arco
- after BP's intermittent research on F-T GTL over many years, in 2000 following the acquisition of very large gas reserves and additional technology by its takeover of Amoco and hopefully of Arco, BP could become the front-runner for future F-T GTL developments focussing on Alaska and the Far East

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- Technology companies : Syntroleum, Rentech, Haldor Topsoe, Syncrude Technology, Energy International, Syntex, Air Products
- Contractors : Foster Wheeler, Kvaerner, Jacobs, Bechtel, Others
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- revenues from otherwise unmarketable natural gas
- enhancement of the value of major natural gas reserves offering revenues from natural gas in distant petroleum products markets which are more broadly-based than markets for LNG

Chapter 6 : Environmental incentives

- elimination of gas flaring
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Chapter 7 : The financing of projects

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- Table A1 Some potential natural gas sources for F-T GTL projects
- Table A2 F-T GTL commercial and pilot plants and projects: July 2000-05-02
- REFERENCE SOURCE



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