

Analyzing Coal to Liquids

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Abstracts

Coal is a fossil fuel formed in ecosystems where plant remains were saved by water and mud from oxidization and biodegradation. Coal is a readily combustible black or brownish-black rock. It is a sedimentary rock, but the harder forms, such as anthracite coal, can be regarded as metamorphic rocks because of later exposure to elevated temperature and pressure. It is composed primarily of carbon along with assorted other elements, including sulfur. It is the largest single source of fuel for the generation of electricity world-wide, as well as the largest world-wide source of carbon dioxide emissions, slightly ahead of petroleum and about double that of natural gas. Coal is extracted from the ground by coal mining, either underground mining or open pit mining.

Coals can also be converted into liquid fuels like gasoline or diesel by several different processes. The Fischer-Tropsch process of indirect synthesis of liquid hydrocarbons was used in Nazi Germany for many years and is today used by Sasol in South Africa. Coal would be gasified to make syngas (a balanced purified mixture of CO and H₂ gas) and the syngas condensed using Fischer-Tropsch catalysts to make light hydrocarbons which are further processed into gasoline and diesel. Syngas can also be converted to methanol, which can be used as a fuel, fuel additive, or further processed into gasoline via the Mobil M-gas process.

Coal liquefaction is one of the backstop technologies that could potentially limit escalation of oil prices and mitigate the effects of transportation energy shortage that some authors have suggested could occur under peak oil. This is contingent on liquefaction production capacity becoming large enough to satiate the very large and growing demand for petroleum. Estimates of the cost of producing liquid fuels from coal suggest that domestic U.S. production of fuel from coal becomes cost-competitive with oil priced at around 35 USD per barrel, (break-even cost). This price, while above historical averages, is well below current oil prices. This makes coal a viable financial alternative to oil for the time being, although current production is small.

Aruvian's R'search brings you an in-depth focus on the emerging technology of Coal to Liquids. The report focuses on all aspects of the various processes involved in the CTL process, conversion processes utilized on natural gas, the major companies which are investing in this technology, the reasons for investing in CTL and the investment scenario in the technology, and the financial difficulties faced during financing of projects.

The report looks at the growth factors, challenges and barriers, the concept of using CTL fuel for transportation, the economic feasibility of CTL technologies and CTL projects, the effect of CTL on the energy market, and of course, the basics of Coal to Liquid technologies. A lot more awaits you inside this comprehensive intelligent analysis of CTL technology and market.

Contents

A. EXECUTIVE SUMMARY

B. UNDERSTANDING COAL

B.1 Coal Basics

B.2 Coal as a Fuel – Historical Perspective

B.3 Composition of Coal

B.4 Types of Coal

B.4.1 Anthracite

B.4.2 Lignite

B.4.3 Bituminous

B.4.4 Sub-Bituminous

B.5 Coal Fuel - The Environmental Fallout

B.6 Coal Burn Residue Management

C. CONSOLIDATION IN THE GLOBAL COAL INDUSTRY

D. RISING GLOBAL DEMAND FOR OIL

E. BACKGROUND ANALYSIS

E.1 Background

E.2 Technical Background

F. OVERVIEW OF COAL TO LIQUIDS

F.1 Introduction

F.2 Direct Liquefaction

F.3 Indirect Liquefaction

F.4. Defining Higher Heating Value & Lower Heating Value

F.5 Analyzing the Gasification Process

F.6 Products Produced from Syngas

F.7 Role of Substitute Natural Gas

F.8 Role of Methanol

F.9 Role of Dimethyl-Ether

F.10 Role of Liquids Hydrocarbons

G. HISTORY OF COAL TO LIQUIDS

- G.1 Historical Background
- G.2 History of Direct Liquefaction
- G.3 History of Indirect Liquefaction

H. OVERVIEW OF THE CTL PROCESS

- H.1 Introduction
- H.2 Carbonization & Pyrolysis
- H.3 Looking at Direct Liquefaction
 - H.3.1 Coal Liquefaction
 - H.3.2 Production of Hydrogen
 - H.3.3 Product Improvement
 - H.3.4 Offsite Plants
- H.4 Looking at Indirect Liquefaction
 - H.4.1 Production of Syngas
 - H.4.2 Conversion of Synthesis Gas
 - H.4.3 Product Improvement
 - H.4.4 Offsite Plants
- H.5 A Look at Coal to Gasoline
- H.6 Comparing CTL and CTG

I. ANALYZING PRODUCTS OF THE CTL PROCESS & YIELDS

J. ANALYZING THE CAPITAL COST INVOLVED IN CTL

K. INVESTMENT IN GLOBAL COAL TO LIQUIDS

L. ANALYZING CARBON EMISSIONS FROM CTL PLANTS

- L.1 Overview
- L.2 Transport Emissions
- L.3 Process Emissions

M. LIQUID COAL & GLOBAL WARMING

N. MANAGING GHG EMISSIONS FROM CTL

- N.1 Overview
- N.2 Carbon Capture & Sequestration
- N.3 Enhanced Oil Recovery & Carbon Capture
- N.4 Combined Gasification of Coal & Biomass

O. BENEFITS OF COAL TO LIQUIDS PRODUCTION

P. BARRIERS TO CTL

- P.1 Permitting Issues
- P.2 Agreements with Vendors Issues

Q. RISING FUEL PRICES & CTL

R. ANALYZING THE MARKET POTENTIAL OF CTL

- R.1 Global Overview
- R.2 Looking at Australia
- R.3 Looking at China
- R.4 Looking at Germany
- R.5 Looking at Indonesia
- R.6 Looking at India
- R.7 Looking at the US
- R.8 A Look at Market Incentives

S. ANALYZING PROCESSES RELATED TO CTL

T. COAL TO LIQUIDS IN THE UNITED STATES

- T.1 Requirement of CTL in US
- T.2 US' Abundant Supply of Coal
- T.3 Why is CTL Not a Reality in the US
 - T.3.1 Dangers of Coal Mining
 - T.3.2 Global Warming & CO2 Emissions
 - T.3.3 Pollution from Liquid Coal
- T.4 Existing Technologies in the US
- T.5 Advantages of CTL to the US
- T.6 Commercializing the CTL Industry
- T.7 CTL & US Energy Security

- T.8 The US Environment & CTL
- T.9 US Economy & CTL
- T.10 Role of the Federal Government
- T.11 Requirements for the Future

U. FUTURE PERSPECTIVE OF CTL

- U.1 Future Outlook
- U.2 Oil Prices Outlook & CTL
- U.3 Future Outlook on CTL Capital Costs
- U.4 Future Outlook on Feedstock Costs
 - U.4.1 Coal Consumption
 - U.4.2 Coal Cost
 - U.4.3 Coal Quality
 - U.4.4 Barriers to Coal Production
- U.5 Outlook for Availability of Equipment for CTL Plant Construction
- U.6 Regulatory Outlook
- U.7 Future Requirements for Transportation
- U.8 Forecast on Carbon Dioxide Emissions
- U.9 China's Economic Growth
- U.10 Technological Advancements
- U.11 Global Forecast for CTL Market

V. CASE STUDIES

- V.1 Alaska West Cook Inlet CTL Project
- V.2 Healy Coal-to-Liquids Plant
- V.3 CTL Project Carbon County, Wyoming
- V.4 Medicine Bow CTL Project
- V.5 Sasol's CTL Project in the Shaanxi Province
- V.6 Refinery-Based CTL Pathways for Jet Fuel & Other Products
- V.7 Emergence of Plug-in Hybrids
- V.8 Coal to Liquids in South Africa
- V.9 Coal to Liquids in China

W. LEADING INDUSTRY CONTRIBUTORS

- W.1 Conoco
- W.2 DKRW Advanced Fuels

W.3 NEDO

W.4 Sasol

W.5 Shell China

W.6 Synthesis Energy Systems

W.7 Syntroleum Corporation

W.8 Rentech

X. APPENDIX

Y. GLOSSARY OF TERMS

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