

COAL LIQUEFACTION

- A RESEARCH & DEVELOPMENT NEEDS ASSESSMENT

by the

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Coal Liquefaction

- A Research & Development Needs Assessment

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ABSTRACT

The DOE Coal Liquefaction Research Needs (COLIRN) Panel reviewed, developed, and assessed R&D needs for the development of coal liquefaction for the production of transportation fuels. Technical, economics, and environmental considerations were important components of the panel's deliberations. The panel examined in some depth each of the following technologies: direct liquefaction of coal, indirect liquefaction via conversion of coal-derived synthesis gas, pyrolysis, coprocessing of combined coal/oil feedstocks, and bioconversion of coal and coal-derived materials. In this assessment particular attention was given to highlighting the fundamental and applied research which has revealed new and improved liquefaction mechanisms, the potentially promising innovative processes currently emerging, and the technological and engineering improvements necessary for significant cost reductions. as the result of this assessment, the COLIRN panel developed a list of prioritized research recommendations needed to bring coal liquefaction to technical and economic readiness in the next 5-20 years. The findings and the research recommendations generated by the COLIRN panel are summarized in this publication.

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