Report of The Committee On Synthetic Fuels

A continuing decline in crude oil prices and a relative abundance of energy supplies in 1983 combined to retard the projected long-term profitability of synthetic fuel ventures and to weaken interest in the massive national synthetic fuel program that was contemplated in 1980 when the Energy Security Act[1] was enacted. Nevertheless, several major synthetic fuels projects were either completed or under construction, and several others may soon receive the financial assistance necessary for project development from the Synthetic Fuels Corporation ("SFC") under the Energy Security Act. The status of some of the more advanced projects, a description of some of the SFC's major actions, and other developments during the past year are summarized below.

1. Progress of Synthetic Fuels Projects

A. *Final Commitment for Assistance*

Only one synthetic fuels project has received a final and binding commitment of financial assistance from the SFC. The *Cool Water Coal Gasification Project,* expected to commence operations in mid-1984, was awarded up to $120 million in price guarantees by the SFC in July of 1983 and remains the only project to have obtained a fianl and binding commitment of financial assistance from the SFC. The SFC price guarantee will last for up to five years or 20 TBtu of gas, whichever comes first. The guaranteed price for the first 9 TBtu of gas is $12.50 per MMBtu, then falls to $9.75 per MMBtu for the last 11 TBtu's.

Located in Daggett, California, Cool Water is a commercial-scale demonstration venture that will use Texaco gasification technology to prodjce syngas and steam to power a General Electric gas turbine combined-cycle electric generating facility to produce 100 megawatts of electricity. The gasification plant will produce 750 MMBtu per hour of medium-Btu gas from low-sulfur Utah coal. Sponsored by Southern California Edison Co., Texaco Inc., Bechtel Power Corp., General Electric Co., the Japan Cool Water Program Partnerhisp, and the Electric Power Research Institute, Cool Water will cost an estimated $300 million.

B. *Letters of Intent*

Several other synthetic fuel projects have received SFC letters of intent to provide financial assistance. Such letters are not binding but indicate that a tentative agreement on financing assistance has been reached.

Calsyn Tar Sands and Heavy Oil Upgrading Project – The SFC issued a letter of intent in May of 1983 to provide up to $49.8 million in loan guarantees to the Calsyn project in West Pittsburg, California, which will produce form 5,000 to 7,000 barrels per day of distillate fuel oil, fuel gas, and naphtha. The project is a joint venture of Tenneco Oil Co., California Synfuels Research Corp., Alberta Oil Sands Technology and Research Authority, and subsidiaries of Dynalectron Corp. and Ralph M. Parsons Co.

Cathedral Bluffs Shale Oil Project – In July of 1983 the SFC issued a letter of its intent to provide up to $1.8 billion in loan guarantees (convertible to price guarantees) and $378 million in price guarantees to Cathedral Bluffs Shale Oil Co., a partnership of Occidental Oil Shale, Inc. and Tenneco Shale Oil Co., to undertake

[1] Pub. L. No. 96-294, 94 Stat. 611 (1980), 42 U.S.C. §§ 8701, *et seq.*

the Cathedral Bluffs project in Rio Blanco County, Colorado. The price would be guaranteed at $60 per barrel in 1983 dollars over ten years. The project is designed to produce 11,700 barrels per day of syncrude from shale, utilizing a combination of room and pillar mining, Union Oil's above-ground retorting and hydrotreating technologies, and Occidental's modified *in situ* retorting technology.

First Colony Peat-to-Methanol Project – The recipient of the SFC's first letter of intent in December of 1982, the First Colony project has not yet obtained the financial assistance that it requested under the SFC's second solicitation. Sponsored by Peat Methanol Associates, a partnership consisting of subsidiaries of Energy Transition Corp., Koppers Company, Inc., Transco Energy Company, and J. B. Sunderland, the project will be located in Creswell, North Carolina and will produce 4,600 barrels per day methanol from peat. The SFC letter of intent indicates that First Colony may receive a $361 million loan guarantee and a $99 million price guarantee.

Parachute Creek Shale Oil Project – In December of 1983 the SFC issued a letter of intent to Union Oil Co. of California to provide up to $2.7 billion in price guarantees over ten years for Phase II of Union's Parachute Creek project in Garfield County, Colorado, which is designed to produce up to the equivalent of 42,000 barrels of crude oil per day. The guaranteed price initially would be $60 per barrel in 1983 dollars. Phase I of the project, which was completed during the year, was constructed with the assistance of $400 million in price guarantees awarded by the Department of Energy in July of 1981 and is now monitored by the SFC. Union plans to ultimately develop a 90,000 barrels per day facility. The facility expansion in Phase II will be constructed in two increments and will involve the expansion of the existing mine, Union's proprietary surface retorts and upgrading plants, and a pipeline.

Seep Ridge Project – The SFC also issued a letter of intent in December to provide $24 million in price guarantees and $21 million in loan guarantees (convertible to price guarantees) over ten years for the Seep Ridge project near Vernal, Utah. The guaranteed price would be $42.50 per barrel in 1983 dollars. Sponsored by Geokinetics, Inc., Seep Ridge would produce 1,000 barrels per day of shale oil. Construciton is scheduled to begin in 1984, utilizing Geokinetics "LOFRECO" in situ extraction technique. The crude shale oil will be upgraded to diesel fuel and other refinery products.

C. *Progress of Other Projects*

Developments regarding the progress of certain other synthetic fuels projects in 1983 are also worthy of mention.

Arkansas Power & Light Lignite Conversion Project – The only proposal filed in response to the Gulf Lignite solicitation that was issued by the SFC in 1983 was submitted by Arkansas Power & Light Co., which requested loan and price guarantees to construct a plant in Hampton, Arkansas that would be capable of producing 68.1 billion Btu per day of medium-Btu gas, using the Dow coal gasification process. The SFC ultimately rejected the proposal but nevertheless approved direct negotiations with the project sponsor under Seciton 131(b)(4) of the Energy Security Act, which permits such negotiations if the SFC determines that a project is essential to the achievement of the Act's objectives and that the solicitation process has not produced acceptable proposals.

Great Plains Coal Gasification Project – Scheduled to begin operations in 1984, the Great Plains project in Mercer County, North Dakota is being constructed by a partnerhsip comprised of subsidiaries of Tenneco Inc., American Natural Resources Company, Transco Energy Company, MidCon Corp., and Pacific Lighting Corporation. The project will utilize the Lurgi coal gasification process to produce a daily volume of up to 137,500 Mcf of high-Btu gas — the equivalent of about 23,000 barrels of crude oil. The project received a loan guarantee of up to $2.02 billion from the Department of Energy in 1982 under the Federal Nonnuclear Energy Research and Development Act and is now seeking price guarantees from the SFC. After submitting an unsolicited proposal to the SFC in September of 1983, Great Plains submitted another proposal in January of 1984 in response to the SFC's coal gasification solicitation.

Santa Rosa Oil Sands Project – In January of 1983 the SFC issued a letter of intent to provide $41 million in price guarantees to Solv-Ex Corp. to develop the Santa Rosa oil sands project in Santa Rosa, New Mexico. Foster-Wheeler Energy Corp. subsequently entered into a partnership with Solv-Ex to implement the project. In the fall of 1983, however, the partnerhsip was dissolved and the letter of intent was withdrawn by the SFC, based upon evidence that there was an insufficient concentration of bitumen to allow the project to operate economically.

Tennessee Eastman Coal Gasification Project – Apart from Phase I of Union's Parachute Creek Project, the only other new synthetic fuels project to commence operations in 1983 was privately financed and developed without any government funding. The Tennessee Eastman project, the first commercial coal-to-chemicals project in the United States, began marketing methanol to alcohol blenders in the fall of 1983. The complex in Kingsport, Tennessee includes a Texaco coal gasification plant for synthesis gas manufacture, raw gas clean-up and separation facilities, a sulfur recovery unit, a coal-fired steam plant with electric power cogeneration, and chemical plants to produce methanol, methyl acetate, and acetic anhydride.

II. Formal SFC Solicitations

SFC awarded financial assistance to one synthetic fuels project and issued letters of intent to several others in 1983, as noted above. Proposals of financial assistance have been submitted in response to a number of SFC solicitations, which are described below:

First General Solicitation – Issued in November 1980 and closed in March 1981, the SFC's first solicitation elicited 68 proposals but did not result in an award of financial assistance.

Second General Solicitation – Of 38 synthetic fuels projects considered under this solicitation (issued in December of 1981 and closed in June of 1982), Cool Water has been the only project awarded financial assistance. Letters of intent were issued to Calsyn and First Colony, while a few others remain under consideration.

Third General Solicitation – A total of 48 projects were proposed to the SFC in response to its third general solicitation, which was issued in August of 1982 and closed on January 10, 1983. No awards were issued under the Third Solicitation in 1983, but three projects — Phase II of the Parachute Creek Project, Cathedral Bluffs, and Seep Ridge — did receive SFC letters of intent, and other projects remain under consideration.

Western Oil Shale Solicitation – Issued in January of 1983 by the SFC, this solicitation was the first so-called "targeted" or "competitive" solicitation. Projects producing at least 10,000 barrels per day of shale oil from the Green River Formation in Colorado and Utah were solicited. Proposals were received from six ventures, all of which had applied under one or more of the three previous general solicitations, but all of the proposals were ultimately rejected.

Gulf Coast Lignite Solicitation – Issued by the SFC in April of 1983, this second "targeted" solicitation attracted only one proposal — the medium-Btu coal gasification project proposed by Arkansas Power & Light Co. This proposal was ultimately rejected, but direct negotiations in regard to this project may lead to an award of assistance.

Midwestern and Appalachian Bituminous Coal Gasification Solicitation – The SFC's second targeted coal solicitation, issued in June of 1983, attracted nine proposals, of which four remain under consideration.

General Coal Gasification Solicitation – Formally issued on January 5, 1984, this solicitation offers price guarantees for projects producing at least 10,000 barrels per day of crude oil equivalent of medium-Btu gas, high-Btu gas, methanol, gasoline, or liquefied petroleum gas from coal or lignite. This solicitation was the first to require compliance with the SFC's "Environmental Monitoring Plan Guidelines", which were issued in October.[2]

Coal Water Solicitation – A draft solicitation issued by the SFC in December of 1983 and finalized in January of 1984 proposes to make two awards of price guarantees: one for a project producing the equivalent of at least 1,000 barrels of oil per day of coal-water fuel for use in an industrial fuel burning facility, and the other for a project producing the equivalent of at least 3,000 barrels of oil per day for use in an electric utility power plant. A binding agreement for the sale of 50% of the project's output for one year is required, and 60% of the capital must be committed by June of 1984.

Retrofit Solicitation – A solicitation offering price guarantees to sponsors of coal-based projects to retrofit a chemical plant, refinery, electric utility plant, or industrial fuel-using facility was issued in draft form by the SFC in January of 1984.

Fourth General Solicitation – A draft general solicitation offering price and loan guarantees to projects using coal, oil shale, tar sands, or heavy oil was also issued by the SFC in January of 1984.

III. Other Development

A. *Legislation*

Senator William Proxmire and Congressman Vin Weber have introduced bills (S. 250 and H.R. 3380) to abolish the SFC. Congressman Tom Corcoran has submitted legislation (H.R. 1701) to convert the SFC into a $3 billion research and development agency. Congressman Howard Wolpe has sponsored a bill (H.R. 4098) that would prevent the SFC form awarding financial assistance until Congress approves the comprehensive strategy that is to be submitted by the SFC in 1984 and 1985.

In addition, the SFC recommended tax law changes to Congress to enable the SFC to fund five or six more large synfuels plants. The SFC recommended (a) extension of the energy tax credit affirmative action date, (b) a broadening of the energy tax credit to cover ancillary synfuels facilities and tar sands and heavy oil, and (c) restoration of benefits removed by the Tax Equity and Fiscal Responsibility Act in 1982, including current expensing of interest and the 5-year accelerated cost recovery system ("ACRS").

B. *SFC Financial Incentives*

In term sheets and contracts for financial assistance, the SFC has instituted several new concepts:

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[2] 48 Fed. Reg. 46,676 (October 13, 1983).

Convertible Loan-to-Price Guarantees – To provide both loan and price assistance without exceeding the ceiling of $3 billion in assistance to a project, the SFC has adopted the practice of providing loan guarantees for construction which convert to price guarantees to the extent that the loan guarantee is not used or the loan is repaid. Such rollover assistance does not increase the amount of funds obligated by the SFC.

Reliance on Price Supports – In light of the general outlook for energy prices, SFC financial assistance has included price guarantees in almost every case, and the guarantee prices have risen to about $60 per barrel.

New Contractual Provisions – The SFC has experimented with certain new provisions in its contracts, including deferred construction elections, taxpayer recovery clauses, and technology incentive bonuses.

Letters of Intent – The issuance of non-binding letters of intent is designed to encourage project sponsors to proceed with project development during negotiations and to enable incomplete syndicates to attract additional partners.

C. *Gas Research Institute*

GRI has continued to engage in several research and development programs in the synthetic fuels area (*e.g.*, methane from coal seams). The 1984 programs have received the advance approval of the Federal Energy Regulatory Commisison and will thus continue to be funded through rates changed by interstate gas transmission companies.[3]

D. *SFC's Comprehensive Strategy*

Section 126(b)(1)(2) of the Energy Security Act requires the SFC to submit a report to Congress on the $20 billion program previously authorized and to submit a proposed comprehensive synthetic fuel production strategy for the future by June 30, 1984. Congressional approval is a condition precedent to the SFC receiving up to $68 billion in additional funds. The SFC has requested Congress to extend the deadline for one year, as is permitted in the Energy Security Act.

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[3]*Gas Research Institute,* FERC Opinion No. 195, 25 FERC ¶ 61,147 (October 28, 1983).