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# THE SYNTHETIC FUELS CORPORATION AND A NEW INDUSTRY'S EXEMPTION FROM NEPA

*Elaine F. Rappaport\**

## I. INTRODUCTION

The 1980's will be a decade of change and challenge for the energy policies established by Congress. Recent worldwide events have shown that America is vulnerable to sudden changes in foreign energy supplies, and the most immediate and possibly most serious aspect of our vulnerability lies in the area of liquid fuel. Recognizing the importance of energy production, Congress has taken action to promote development of a domestic synthetic fuel (synfuel) industry in an attempt to achieve energy independence from imported sources.<sup>1</sup>

Congress' synfuel policy is embodied in the Energy Security Act,<sup>2</sup> signed into law by President Carter on June 30, 1980. Title I of the

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1. The need for energy independence is exemplified by the continual growth of oil use in the country. Imports as a percentage of total United States oil consumption have grown from 13 percent in 1950 to nearly 50 percent today. S. REP. NO. 387, 96th Cong., 2d Sess. 5, *reprinted in* [1980] U.S. CODE CONG. & AD. NEWS 1751, 1755. *See also* 10 COUNCIL ON ENV'TL QUALITY ANN. REP. 322 (1979) [hereinafter cited as CEQ REPORT]. In 1977, total energy consumption was 36.7 million barrels of oil equivalent each day. Petroleum accounted for 18.4 million of this total with the balance provided by natural gas, coal, nuclear, or hydroelectric power. Of the 18.4 million barrels of oil consumed each day, imports accounted for 8.7 million barrels. S. REP. NO. 387, *supra* note 1, at 5, citing R. STOUBAUGH & D. YERGIN, ENERGY FUTURE: REPORT OF THE ENERGY PROJECT AT THE HARVARD BUSINESS SCHOOL 15 (1979) (table I-i) [hereinafter cited as ENERGY FUTURE]. In 1978, the United States consumed 17.7 million barrels per day (mbd), only 9.8 million of which was domestically produced. Moreover, of the 17.7 mbd consumed, only 3.7 mbd could be substituted in the short run by other nonliquid or gaseous fuels. S. REP. NO. 387, *supra* note 1, at 129, U.S. CODE CONG. & AD. NEWS at 1875-76.

2. The Energy Security Act, Pub. L. No. 96-294, 94 Stat. 611 (1980) (codified in scattered sections of 12, 15, 16, 26, 30, 42, and 50 U.S.C.). The Act does not deal only with the Synthetic Fuels Corporation. It contains titles dealing with Biomass Energy and Alcohol Fuel (Title II),

Act creates an independent, federally-owned corporation called the Synthetic Fuels Corporation (SFC).<sup>3</sup> The national goal for synthetic fuel production is the equivalent of 500,000 barrels of crude oil per day by 1987, and two million barrels per day (mbd) by 1992.<sup>4</sup> The SFC is authorized to provide incentives through various forms of financial assistance in order to meet the synthetic fuel production goal established by Congress.<sup>5</sup>

The projects supported by the SFC will be designed to convert the nation's coal, oil shale, and tar sands resources<sup>6</sup> into synthetic fuels to be used as substitutes for natural gas and petroleum. Congress plans to fund the corporation with \$88 billion during its expected existence from 1980 to 1992,<sup>7</sup> but it has decided to proceed cautiously with this funding. During Phase I (1980-1984), emphasis will be upon commercial demonstration of feasible technologies. Twenty billion dollars has been authorized for this purpose. Before undertaking Phase II, a comprehensive strategy must be submitted for joint congressional approval. After approval, not more than \$68 billion may

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Energy Targets (Title III), Renewable Energy Initiatives (Title IV), Solar Energy and Energy Conservation (Title V), Geothermal Energy (Title VI), Acid Precipitation and Carbon Dioxide Studies (Title VII), and the Strategic Petroleum Reserve (Title VIII). This article will be concerned with aspects of Title I only. To be codified at 42 U.S.C. §§ 8701-8795 (Supp. IV 1980).

3. *Id.* § 115, to be codified at 42 U.S.C. § 8711. Throughout this article the terms "the SFC" and "the corporation" will be used interchangeably.

4. *Id.* § 125, to be codified at 42 U.S.C. § 8721.

5. See text at notes 149-72 *infra*.

6. For purposes of this discussion reference to synthetic fuel is confined to the definition given within the Energy Security Act:

(A) The term "synthetic fuel" means any solid, liquid, gas, or combination thereof, which can be used as a substitute for petroleum or natural gas (or any derivatives thereof, including chemical feedstocks) and which is produced by chemical or physical transformation (other than washing, coking, or desulfurizing) of domestic sources of—

(i) coal, including lignite and peat;

(ii) shale;

(iii) tar sands, including those heavy oil resources where—

(I) the cost and the technological and economic risks make extraction and processing of a heavy oil resource uneconomical under applicable pricing and tax policies; and

(II) the costs and risks are comparable to those associated with shale, coal and tar sand resources (other than heavy oil) qualifying for financial assistance under this part; and

(iv) water, as a source of hydrogen only through electrolysis.

(B) Such term includes mixtures of coal and combustible liquids, including petroleum.

(C) Such term does not include solids, liquids, gases or combinations thereof, derived from biomass, which includes timber, animal and timber waste, municipal and industrial waste, sewage, sludge, oceanic and terrestrial plants, and other organic matter.

Energy Security Act, § 112(17)(A), to be codified at 42 U.S.C. § 8702(17)(A) (Supp. IV 1980).

7. 1992 is the year after which no new plants may receive SFC assistance. See text at notes 181-84 *infra*.

be authorized for the duration of the SFC's existence.<sup>8</sup> These resources are intended merely as incentives. Congress expects to attract billions more in private investments.<sup>9</sup> The SFC is not intended to run the synfuel industry, it is to initiate action by the private sector.<sup>10</sup>

This immense expenditure by government and private industry will spawn projects that will substantially affect the environment. Generally, when a "major Federal action significantly affecting the quality of the human environment"<sup>11</sup> is involved, compliance with the National Environmental Policy Act of 1969 (NEPA) is required.<sup>12</sup> NEPA is the federal environmental law enacted by Congress to ensure that environmental consequences are considered and that proper disclosure is made before an action which will have significant environmental effects is taken by any government agency. NEPA imposes an affirmative obligation on agencies to seek out environmental information and to make this information known and available to public officials and citizens before decisions are made and actions are taken. The most significant provision of NEPA is section 102(2)(C) which requires the compilation of an environmental impact statement (EIS) by government agencies.<sup>13</sup> The SFC, however, is not a federal agency for purposes of NEPA, and is not required to file an EIS.<sup>14</sup>

8. See text at note 132 *infra*.

9. 126 CONG. REC. H5,692 (daily ed. June 26, 1980) (remarks of Rep. Moorhead).

10. For an economist's argument as to why the private sector should be controlling the country's synthetic fuel development without government intervention, see generally Joskow & Pindyck, *Synthetic Fuels: Should the Government Subsidize Nonconventional Energy Supplies?*, AEI J. ON GOV'T AND SOC'Y 18 (1979).

11. National Environmental Policy Act of 1969, § 102(2)(C), 42 U.S.C. § 4332(2)(C) (1976); see text at note 188 *infra*.

12. National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321-4347 (1976).

13. The Congress authorizes and directs that, to the fullest extent possible: . . .

(2) all agencies of the Federal Government shall— . . . (C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on—

- (i) the environmental impact of the proposed action,
- (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,
- (iii) alternatives to the proposed action,
- (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
- (v) any irreversible and ir retrievable commitments of resources which would be involved in the proposed action should it be implemented.

*Id.* § 102(2)(C)(i)-(v), 42 U.S.C. § 4332(2)(C)(i)-(v).

14. Energy Security Act, § 175(b), 42 U.S.C. § 8755(b) (1980). The Energy Security Act specifically states when the corporation is and is not considered an agency for purposes of

This article has several purposes. One purpose is to present the structure and functions of the United States Synthetic Fuels Corporation in order to illustrate how it will operate and how it will have a significant role in the development of the country's emerging synfuel industry. Another purpose of this article is to analyze how environmental information will be handled by the corporation in light of its exemption from the environmental impact statement requirement of NEPA. First, the background and need for synthetic fuels will be presented. An explanation of the technological processes, general obstacles, and major environmental problems involved with coal gasification and liquefaction and oil shale technology will be discussed. Second, the structural aspects of the SFC, both procedural and functional, are presented in order to illustrate how this new government entity will operate. The article will then focus upon what environmental information is required by the SFC and how this information will be used in its financial decision-making process. Finally, the article will consider whether or not the environmental disclosure goals of NEPA can be realized by the SFC despite the EIS exemption by Congress.

## II. SYNTHETIC FUELS

The recent events in Iran and the earlier oil embargo of 1973-1974 demonstrated the consequences of American dependence upon foreign oil and the threat that this dependence poses to our national security and economic health.<sup>15</sup> Statistics show that the United States' consumption of liquid fuel is growing rapidly, more rapidly it seems, than its ability to discover new reserves.<sup>16</sup> It became apparent to the Congress that the country must take action to develop alternatives to foreign oil, and that synthetic fuels should be contained within the overall energy policy.<sup>17</sup>

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various government regulations. For purposes of NEPA, the Act states:

No action of the Corporation except the construction and operation of synthetic fuel projects pursuant to Subtitle E shall be deemed a "major Federal action significantly affecting the quality of the human environment" for purposes of Section 102(2)(C) of the National Environmental Policy Act of 1969, and with respect to Corporation construction projects, the Corporation shall be deemed to be a Federal agency for purposes of such Act.

*Id.*

15. For a thorough and well-documented account of the United States energy outlook, see ENERGY FUTURE, *supra* note 1. For some major oil consequences, see note 34 *infra*.

16. See note 1 *supra*.

17. For a general discussion of the synfuel arguments and the Energy Security Act, see 126 CONG. REC. H5,691-5,741 (daily ed. June 26, 1980).

Synthetic fuel development, although new to American technology on a commercial scale, is not a new idea.<sup>18</sup> Other countries have undertaken its development. South Africa is producing and expanding its production of liquid fuel from coal liquefaction plants,<sup>19</sup> Canada is developing its tar sands, and China has been producing a portion of its oil from shale.<sup>20</sup>

To develop a significant synthetic fuel industry and eliminate dependence upon imported fuel, plants must be constructed that will utilize abundant domestic energy resources such as coal and oil shale.<sup>21</sup> Because of the abundance of these resources, coal gasification and the extraction of liquid fuel from both coal and oil shale are the most viable synthetic fuel programs for providing substitutes for oil and natural gas.

The development of synthetic fuel depends upon the use of different combinations of heat, pressure, air, oxygen, water, and the biological reactions applied to them. Although the technical details of the proposed processes are beyond the scope of this article, a general overview of coal gasification and liquefaction as well as oil shale recovery is necessary to provide some insight as to what development of the synfuel industry will entail.

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18. The synfuel concept has been acknowledged and discussed for the last 40 years. See O'Mahoney-Randolph Synthetic Liquid Fuels Act of 1944, Pub. L. No. 78-290, 58 Stat. 190 (1944); Senate National Fuels and Energy Study Group, S. Res. 105, 87th Cong., 1st Sess., 107 CONG. REC. 13,881 (1961); S. 1846, 92d Cong., 1st. Sess., 117 CONG. REC. 14,628 (1971) to establish a Coal Gasification Development Corporation. The Federal Non-Nuclear Energy Research and Development Act of 1974, 42 U.S.C. §§ 5901-5917 (1976); Energy Independence Authority Act of 1975, H.R. 2650, 94th Cong., 1st Sess. (1975); Department of Energy Act of 1978—Civilian Applications, Pub. L. No. 95-238, 92 Stat. 47 (1978).

19. The Republic of South Africa is a leader in synthetic fuel production by coal liquefaction. The country has an existing coal liquefaction plant known as SASOL I, it is in the process of constructing SASOL II, and a SASOL III plant should be in operation before 1985. It is estimated that South Africa, now 90 percent dependent on foreign oil, will be able to produce 50 percent of its liquid fuel needs from these three plants. S. REP. NO. 387, *supra* note 1, at 138, U.S. CODE CONG. & AD. NEWS at 1884.

20. *Id.* at 129, U.S. CODE CONG. & AD. NEWS at 1875.

21. The oil shales located in Colorado, Utah, and Wyoming contain the equivalent of more than 731 billion barrels of oil. This amount is approximately equal to the known world reserves of conventional oil. P. ROTHBERG & M. SEGAL, SYNTHETIC FUELS CORPORATION AND TECHNOLOGY 2 (1980) (Congressional Research Service Mini Brief No. MB79245); see also *An Act to Extend the Defense Production Act of 1950: Hearings on S. 932 Before the Committee on Energy and Natural Resources of the Senate*, 96th Cong., 1st Sess. 205 (1979) (report of the Committee for Economic Development). Although projections of the country's coal supplies widely differ, it is estimated that the United States possesses 27 percent of the earth's supply. At a reasonable level of production, this is enough coal for the next one hundred years. ENERGY FUTURE, *supra* note 1, at 80-81. Other estimates project that probable reserves may

### A. Synthetic Fuel Technology

Coal gasification is a chemical technology where pulverized coal is converted into high-, medium-, or low-Btu gas.<sup>22</sup> In its simplest form, coal gasification requires first, the heating of the coal and second, the reaction of its carbon and hydrogen content with steam to produce carbon monoxide, carbon dioxide, hydrogen, and methane.<sup>23</sup> Increasing the hydrogen content of the coal during the gasification process increases the energy content of the end product. This accounts for the differentiation of high-, medium-, and low-Btu gas. For example, if medium-Btu gas is combined with pure hydrogen it yields methane, a high-Btu gas very similar to natural gas that can be used in existing pipeline systems.<sup>24</sup>

Coal liquefaction converts pulverized coal into synthetic liquid fuels also known as syncrude.<sup>25</sup> The conversion of coal into liquid products is based upon increasing the hydrogen/carbon ratio in the coal.<sup>26</sup> There are two methods of accomplishing this result, indirect and direct liquefaction.<sup>27</sup> In indirect liquefaction, coal is gasified to produce a medium-Btu synthesis gas which is then catalytically converted into liquid fuels.<sup>28</sup> In the direct liquefaction process, pulverized coal is mixed with recycled oil or dissolved in a solvent to which hydrogen, high heat, and pressure are added.<sup>29</sup>

Shale oil recovery involves the processing of oil shale, a fine-grained sedimentary rock containing substantial amounts of solid organic material called kerogen.<sup>30</sup> When heat above 900 degrees

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last 200 years. SIVARD, *WORLD ENERGY SURVEY* 24 (1981) (sponsored by the Rockefeller Foundation).

22. A Btu, or British thermal unit, is the amount of heat required to raise the temperature of one pound of water one degree Fahrenheit. P. ROTHBERG, J. JUSTUS, L. CRANE, R. TRUMBULE, M. SIMMONS, A. KAUFMAN & S. BODILLY, *SYNTHETIC FUELS FROM COAL: STATUS AND OUTLOOK OF COAL GASIFICATION AND LIQUEFACTION* 1 (1979) (Congressional Research Service) [hereinafter cited as *COAL OUTLOOK*].

23. *Id.*

24. Allain, *Environmental Implications of a Synthetic Fuel Industry*, 4 HARV. ENV'T L. REV. 391, 393 (1980) citing *RESOURCES FOR THE FUTURE, INC., ENERGY IN AMERICA'S FUTURE* 257 (1979). See *COAL OUTLOOK*, *supra* note 22, at 4.

25. *COAL OUTLOOK*, *supra* note 22, at 31.

26. *Id.*

27. *Id.* Indirect liquefaction may also be referred to as synthesis. Direct hydrogenation is called degradation.

28. U.S. DEP'T OF ENERGY, *ENVIRONMENTAL ANALYSES OF SYNTHETIC LIQUID FUELS* 44 (1979); see also *COAL OUTLOOK*, *supra* note 22, at 33.

29. *COAL OUTLOOK*, *supra* note 22, at 34.

30. Jackson, *Comparative Industrial Hygiene Aspects for Coal Gasification and Liquefaction, Oil Shale and Tar Sands Processing* in *SYNTHETIC FOSSIL FUEL TECHNOLOGY* 266, 269 (K.E. Cowser & C.R. Richmond eds. 1980).

Fahrenheit is applied, the kerogen decomposes into hydrocarbons and carbonaceous residue. When cooled, the hydrocarbons condense into a liquid called shale oil. This crude shale oil can then be refined to produce petroleum products of useable quality.<sup>31</sup> Shale oil production involves the mining and crushing of oil shale rock either above ground or underground. There are three general methods of oil shale recovery: 1) open pit mining followed by above ground retorting (heating the shale rock); 2) *in situ* mining where the rock fracturing and heating is done underground; and 3) *modified in situ* recovery where a portion of the shale is mined conventionally, followed by creation of a system for *in situ* retorting.<sup>32</sup>

### B. Obstacles to Synfuel Development

Synthetic fuels would provide practical alternatives to many of America's energy related problems. Synfuel commercialization could contribute substantially to the availability of energy for transportation systems<sup>33</sup> and alleviation of significant domestic and foreign problems.<sup>34</sup> Coal gasification and liquefaction products are much more versatile than solid coal, and are targeted for various industrial and residential uses as substitutes for oil and natural gas.<sup>35</sup>

Although a competitive synthetic fuel industry could alleviate many energy problems, it is not the single or immediate answer. Any synthetic fuel project will involve time as well as very large capital

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31. *An Act to Extend the Defense Production Act of 1950: Hearings on S. 932 Before the Committee on Energy and Natural Resources of the Senate*, 96th Cong., 1st Sess. 204 (1979) (report of the Committee on Economic Development).

32. Skogerboe, Berg & McWhorter, *Field Level Characterization of Solid Residues from Shale Retorting* in SYNTHETIC FOSSIL FUEL TECHNOLOGY 193, 193 (K.E. Cowser & C.R. Richmond eds. 1980). See also U.S. DEP'T OF ENERGY, SYNTHETIC FUELS AND THE ENVIRONMENT: AN ENVIRONMENTAL AND REGULATORY IMPACTS ANALYSIS 3-1 (1980) [hereinafter cited as DOE ANALYSIS].

33. One goal of synfuel production in the near term is to provide liquified fuels for transportation uses. Transportation accounts for half of the country's petroleum consumption. S. REP. NO. 387, *supra* note 1, at 133, U.S. CODE CONG. & AD. NEWS at 1879.

34. Problems related to imported fuel dependence include: trade deficits resulting from oil import payments; vulnerability to sudden price increases; domestic inflation; harm to western security and trading systems resulting from bitter competition for fuel and strain on foreign relations with oil producing nations. See 126 CONG. REC. H5,692-93 (daily ed. June 26, 1980) (remarks of Rep. McKinney); S. REP. NO. 387, *supra* note 1, at 6, U.S. CODE CONG. & AD. NEWS at 1756; ENERGY FUTURE, *supra* note 1, at 5.

35. Coal liquefaction products can be used as boiler fuels suitable for electric-power generation and steam generation for industrial use, and also as high-grade fuels such as gasoline or heating oil. COAL OUTLOOK, *supra* note 22, at 46. Among the coal gasification products, low- and medium-Btu products will be used in industry and utility markets and high-Btu systems will be employed in the residential as well as industrial market. *Id.* at 14.



investment. It is generally agreed that synthetic fuel production cannot provide short-term relief from oil importation,<sup>36</sup> and regardless of expenditures, significant synfuel progress cannot be achieved before 1990.<sup>37</sup> The time restrictions in the industry's development result from the "lead" time necessary to operate a project. The lead time includes the time necessary for designing and constructing the new plants. Extra time is also needed because of the many uncertainties involved with synfuel development.<sup>38</sup>

Money and the high risks involved with uncertainty of synthetic fuel development<sup>39</sup> may make many potential investors hesitant to invest in the new industry. Despite the good intentions behind the program, potential investor-developers will still proceed cautiously.<sup>40</sup> Not a single commercial scale coal or oil shale conversion facility is

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36. S. REP. NO. 387, *supra* note 1, at 7, U.S. CODE CONG. & AD. NEWS at 1757.

37. *Id. Accord, Hearings on Energy Financing Legislation before the Senate Comm. on Banking, Housing, and Urban Affairs*, 96th Cong., 1st Sess. 114 (1979) (statement of Gov. Richard D. Lamm of Colorado) [hereinafter cited as *Lamm Testimony*]. High-Btu commercial gasification is not expected before 1990, and the first plant is not expected until 1985. COAL OUTLOOK, *supra* note 22, at 22. Innovating coal liquefaction must be a slow and gradual process. To construct a commercial size plant takes five years assuming a concerted effort to complete the job and no interruptions as a result of legal actions. *Id.* at 49. In comparison, construction of the nuclear industry required approximately 15 to 20 years. The commercialization of synfuels to a level capable of reaching the Energy Security Act's goals may require this same "lag" time or longer. *Id.* at xiii.

It should be noted that the nation's first large scale synthetic fuels plant, the Great Plains Gasification Project, is being constructed in Beulah, North Dakota. The project was conceived before the 1973 Arab Oil Embargo, work began in 1980, and operation will not begin until 1984. The project does not expect to produce on a commercial scale until the late 1980's. N.Y. Times, Nov. 17, 1980, § 1, at 1, col. 4, and D9, col. 1.

38. The uncertainties of developing the new industry can be seen from these obstacles identified by a DOE task force for coal gasification plants. They could be applied to the synfuels industry as a whole.

- 1.) Lack of comprehensive and specific federal environmental standards for the plant and the fear that once standards are established, they will be changed.
- 2.) Current availability of cheaper fuels, and without a new fuel pricing policy, expectations that fuels such as natural gas and oil will be available and remain cheaper in the future.
- 3.) Lack of operating experience for potential users to evaluate since there are no existing plants in the United States.
- 4.) Cost to design, build, and operate a plant as well as the cost of the end product are not known with any degree of certainty.
- 5.) Reluctance to be the first to commercialize a technology because of the uncertainties of cost, lack of experience, lack of and changeable environmental regulations. DOE experts have argued that commercial demonstration of this technology is needed to convince industry of its acceptability and promise.

COAL OUTLOOK, *supra* note 22, at 26-27.

39. S. REP. NO. 387, *supra* note 1, at 130, U.S. CODE CONG. & AD. NEWS at 1876.

40. In reference to the Great Plains Project, see note 37 *supra*, a spokesman for American Natural Resources Co., the chief sponsor of the project said: "A lot of other companies are

currently operating in this country,<sup>41</sup> and experts cannot even speculate as to the number of problems involved in synfuel development. It is difficult to assess what a commercial size plant will produce or cost when processing has only been done on a small scale. Until commercial plants are built and solid investment and operating cost data is accumulated, the industry is merely working with projections.

In addition, the required capital investment in a synfuel plant is very high. Each facility is estimated to cost over one billion dollars, although estimates vary and inflation will significantly affect costs.<sup>42</sup> The cost estimates vary according to the selected process, and it can be postulated that actual costs may be double that of the estimates.<sup>43</sup> A further obstacle to synfuel development is that synthetic fuels, when produced, are expected to cost more than the world price of oil at the time.<sup>44</sup>

Other energy sources may be cheaper, but the purpose of synfuel development is to establish a long-term energy supply. The country needs to eliminate its reliance upon foreign energy supplies. Those who see national security jeopardized and the economy threatened urge a strong attempt at synfuel development. Synthetic fuels are not a "quick fix"<sup>45</sup> to the nation's energy problems, but investments must be made now in order to make a significant impact in the

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watching us. . . . If this plant doesn't make it, then this industry is really going to be hurt." N.Y. Times, Nov. 17, 1980, at D9, col. 1.

41. COAL OUTLOOK, *supra* note 22, at 115; *Lamm Testimony*, *supra* note 37, at 115, emphasized that although oil shale technologies are promising they are not thoroughly tested or well-proven, and none has been proven commercially viable.

42. S. REP. NO. 387, *supra* note 1, at 130, U.S. CODE CONG. & AD. NEWS at 1876. *See also id.* at 143, U.S. CODE CONG. & AD. NEWS at 1889; COAL OUTLOOK, *supra* note 22, at 114.

43. COAL OUTLOOK, *supra* note 22, at 115. Major oil firms and utilities who are the most likely participants in commercial synfuel production will have to face economic obstacles. Congress noted that while the capital investment for a synfuel plant is over \$1 billion, in 1975 only 162 industrial corporations had assets greater than \$1 billion and only 30 had assets of \$4 billion. S. REP. NO. 387, *supra* note 1, at 143, U.S. CODE CONG. & AD. NEWS at 1889. In 1975, only 10 regulated natural gas utility companies had net plant and stockholder equities greater than \$1 billion. *Id.* The largest, Columbia Gas, had assets of only \$1.063 billion. *Id.* These statistics illustrate the need for federal incentives to produce synfuels. In the Great Plains Project, delay was extremely costly. The company, which began the project in 1980, claimed that one more year of delay could raise the price of the project by as much as \$300 million. N.Y. Times, Nov. 17, 1980, at D9, col. 1.

44. S. REP. NO. 387, *supra* note 1, at 7, U.S. CODE CONG. & AD. NEWS at 1757. Investors are uncertain about future price levels set by OPEC. *Id.* at 130, U.S. CODE CONG. & AD. NEWS at 3703.

45. *Lamm Testimony*, *supra* note 37, at 114. Governor Lamm stated that the realistic oil shale limit by 1990 is below 400,000 barrels per day. This is only 2 to 3 percent of the nation's total petroleum consumption. *Id.*

future. However, an enormous amount of time, money, and effort must be invested in synfuel research and, while it appears promising, many questions remain unanswered. Investors are not anxious to make investments in uncertainty.

### C. *Environmental Problems*

Commercial scale synfuel production raises questions about the environmental implications of the new industry. How significant the environmental impacts will be depends upon the ultimate size of the industry, the standards yet to be promulgated by regulatory agencies, and the control technologies that will be utilized in each synfuel project. The following discussion highlights some of the frequently cited environmental problems of the emerging synfuels industry including water availability, solid waste disposal, air quality, and occupational hazards. These problems are discussed in order to illustrate that the SFC should be alert to environmental consequences and should take them into consideration when allocating financial assistance to various synfuel project applicants.<sup>46</sup>

#### 1. Water

A major concern is the availability of enough water to supply a synthetic fuel industry. Development of synfuels could require large quantities of water. Coal development requires water for hydrogen cooling, dust suppression, and waste disposal.<sup>47</sup> In oil shale processing, water is needed for the hydrogen reactions with raw shale and, in large quantities, for mining and disposing of the shale.<sup>48</sup>

There is concern about water problems arising in the arid western areas, particularly western Colorado and eastern Utah where shale resources are located, but also in the Northern Great Plains where there are significant coal reserves.<sup>49</sup> The water problems arise where various factions are competing for limited water supplies.<sup>50</sup> For ex-

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46. It should be noted that each technology being discussed has specific processes of its own. This article discusses the technologies in a generic sense as opposed to discussing the details of each specific process.

47. Probst, *Water for a Synthetic Fuel Industry*, TECH. REV. 37, 38 (Aug./Sept. 1979). See also COAL OUTLOOK, *supra* note 22, at 105; and CEQ REPORT, *supra* note 1, at 357.

48. CEQ REPORT, *supra* note 1, at 357.

49. S. REP. NO. 387, *supra* note 1, at 21, U.S. CODE CONG. & AD. NEWS at 1771. See generally Probst, *supra* note 47.

50. Probst, *supra* note 47, at 37. There are economic incentives to locate synfuel facilities next to a mine mouth. Thus, water will either be scarce and competed for by farmers, municipalities, and recreationists (particular states with this problem are Colorado, Wyoming, Montana, North Dakota, and New Mexico), or water resources will be abundant but in con-

ample, adjustments in the present water situation to accommodate synfuel production would apparently cause bitter opposition from the western states utilizing water from the Colorado River.<sup>51</sup> Not only are state governments concerned, but ranchers and farmers are concerned that synfuel sponsors may deplete water currently allocated for their agricultural uses.<sup>52</sup>

Testimony before the Committee on Banking, Housing, and Urban Affairs about Colorado's oil shale resources, estimated to be 80 percent of the country's supply,<sup>53</sup> revealed that a 500,000 barrel per day goal could be accommodated by the state's water supply, but there is skepticism about amounts above that level.<sup>54</sup> Whether or not water consumption proves to be a serious problem with regard to coal synfuel production depends upon the synfuel process used, and the amount of water recycled.<sup>55</sup> Presently, except for the most arid regions and areas where water is already allocated,<sup>56</sup> a significant level of synfuel production from coal can occur in the principal areas of the United States.<sup>57</sup>

## 2. Solid Waste

Solid waste disposal is one of the most serious environmental hazards associated with the development of synthetic fuels.<sup>58</sup> The

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tinual use by other industrial facilities (the particular states in this situation are Kentucky, West Virginia, and Illinois). Klein, *National Progress in Control of Wastewater From Coal Conversion Processes* in SYNTHETIC FOSSIL FUEL TECHNOLOGY 15, 15 (K.E. Cowser & C.R. Richmond eds. 1980).

51. S. REP. NO. 387, *supra* note 1, at 23, U.S. CODE CONG. & AD. NEWS at 1773. The report noted that the western states have historically controlled their water allocations and that attempts by the government to preempt this role would be strongly opposed. This emphasis upon water allocation stems from what is known as the appropriation doctrine. That doctrine is premised on the principle that earlier acquired water rights have priority over subsequent claims. COAL OUTLOOK, *supra* note 22, at 108. For other problems related to water consumption in the synfuels industry, see COAL OUTLOOK, *id.* at 105-13.

52. S. REP. NO. 387, *supra* note 1, at 23, U.S. CODE CONG. & AD. NEWS at 1773. Instead of seeking new water resources, ranchers and farmers fear that synfuel developers may use their financial backing to "buy out" agricultural water allocations. *Id.*

53. *Lamm Testimony*, *supra* note 37, at 114.

54. S. REP. NO. 387, *supra* note 1, at 22, U.S. CODE CONG. & AD. NEWS at 1772. It is possible that oil shale production in the west could require 3.7 barrels of water to produce one barrel of upgraded shale oil. Allain, *supra* note 24, at 405. "At that rate, a million barrel per day shale oil industry would require 30-45 billion gallons of water per year which is about 10% of the present annual U.S. consumption from the Colorado River." *Id.* (footnote omitted).

55. COAL OUTLOOK, *supra* note 22, at 106.

56. See Probst, *supra* note 47, at 42-43.

57. *Id.*

58. 10 ENVIR. REP. (BNA)(Curr. Dev.) 1052 (1979).

emerging synfuel industry will cause solid waste problems that do not have to be faced by conventional oil and gas industries. In addition, the environmental safeguards associated with solid waste are expensive, and if specific federal agencies decide to regulate waste disposal strictly, these additional costs may determine whether projects are environmentally modified or not built at all.<sup>59</sup>

Volume, hazardous content, and lack of proper disposal sites are the problems of solid waste disposal that must be handled in the production of synfuels by coal gasification or liquefaction. A plant processing 5,000 tons per day of coal would dispose of 500 tons per day of residues.<sup>60</sup> Studies show that an industry producing oil in the equivalent of one million barrels of oil per day would yield thirty-five million tons of waste per year requiring disposal.<sup>61</sup> This is enough to cover over 800 acres, twenty feet deep.<sup>62</sup> Furthermore, the solid wastes generated by coal gasification and liquefaction are found to have toxic, mutagenic, and carcinogenic contents.<sup>63</sup> Proper disposal sites are essential for avoidance of serious environmental hazards from the discarded waste. Wastes dumped into landfills, even with proper precautions,<sup>64</sup> may still leach<sup>65</sup> into groundwater systems.<sup>66</sup> If not contained properly, this leaching could lead to groundwater contamination. The quantity and chemical composition of the waste stream is determined by the type of coal used, the process, and the plant design.<sup>67</sup>

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59. For example, the Resource Conservation and Recovery Act of 1976 (RCRA), 42 U.S.C. §§ 6901-6987 (1976 and Supp. II 1978), gives the EPA authority to designate certain types of solid wastes as hazardous. Depending upon the classification, costs of disposal vary significantly. DOE ANALYSIS, *supra* note 32, at 5-69 to 5-77.

60. Boegly, *Solid Waste Management* in SYNTHETIC FOSSIL FUEL TECHNOLOGY 23, 23 (K.E. Cowser & C.R. Richmond eds. 1980).

61. Allain, *supra* note 24, at 396 *citing* Morris, Moskowitz, Sevan, Silberstein, & Hamilton, *Coal Conversion Technologies: Some Health and Environmental Effects*, 206 SCI. 656-57 (Tables 2 & 3) (1979).

62. *Id.* See also DOE ANALYSIS, *supra* note 32, at 3-9.

63. CEQ REPORT, *supra* note 1, at 347.

64. See Bostwick, *Potential Emission, Effluent Processes and Waste Problems in Coal Conversion* in SYNTHETIC FOSSIL FUEL TECHNOLOGY 5, 11 (K.E. Cowser & C.R. Richmond eds. 1980); DOE ANALYSIS, *supra* note 32, at 5-78, 5-79.

65. "Leaching" denotes the soluble constituents of synfuel substances that enter into groundwater systems.

66. S. REP. NO. 387, *supra* note 1, at 20, U.S. CODE CONG. & AD. NEWS at 1770 (report of Gus Speth, Acting Chairman of the Council of Environmental Quality). See also Allain, *supra* note 24, at 396; Bostwick, *supra* note 64, at 11; Hanrahan, *Hazardous Wastes: Current Problems and Near-Term Solutions*, TECH. REV. 24, 25 (Nov. 1979).

67. DOE ANALYSIS, *supra* note 32, at 5-79.

Recovery of oil shale also presents serious waste disposal problems.<sup>68</sup> A 400,000 barrel per day industry would generate about 200 million tons per year of spent shale.<sup>69</sup> Because of expansion during processing, the spent shale will exceed the available storage space of the mine.<sup>70</sup> Thus, there is a need for surface repositories. Natural canyons have been proposed for the waste storage,<sup>71</sup> but this would have serious environmental ramifications. Not only would there be loss of valuable canyon land and natural wildlife habitats,<sup>72</sup> but the volume of waste produced that would require storage is enormous.<sup>73</sup> Also, as with coal conversion, there is a fear that these solid wastes, which are known or suspected carcinogens, will cause water pollution by leaching.<sup>74</sup> It is difficult to keep the waste from coming into contact with ground and surface water. How strictly the Environmental Protection Agency (EPA)<sup>75</sup> will enforce environmental controls on the synfuel plants will have an important impact on the economic structure of the project because the more environmental safeguards needed by a plant, the more overall cost will be borne by the developer.<sup>76</sup>

### 3. Air Quality

Coal gasification and liquefaction as well as oil shale production present air quality problems. Reports from the Department of Energy (DOE) indicate that the problems are serious, but they appear to be solvable.<sup>77</sup> Oil shale air quality concerns relate to the pro-

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68. It has been suggested that waste from surface recovery of oil shale may eventually be dealt with by the underground, *in situ* process, see text at note 32 *supra*, but *in situ* retorting technology is still limited and its environmental impacts are not yet understood. S. REP. NO. 387, *supra* note 1, at 20, U.S. CODE CONG. & AD. NEWS at 1770.

69. *Id.* Spent shale is the solid that remains after retorting. Jackson, *Comparative Industrial Hygiene Aspects For Coal Gasification and Liquefaction, Oil Shale and Tar Sands Processing* in SYNTHETIC FOSSIL FUEL TECHNOLOGY 266, 269 (K.E. Cowser & C.R. Richmond eds. 1980).

70. DOE ANALYSIS, *supra* note 32, at 5-77.

71. S. REP. NO. 387, *supra* note 1, at 20, U.S. CODE CONG. & AD. NEWS at 1770.

72. *Id.*

73. For every 50,000 barrels of surface retorted shale oil produced, there will be enough spent shale to occupy a volume of almost 2 million cubic feet, or about a 2-foot depth over a square mile for every month of operation. DOE ANALYSIS, *supra* note 32, at 3-4.

74. Skogerboe, Berg & McWhorter, *Field Level Characterization of Solid Residues From Oil Shale Retorting* in SYNTHETIC FOSSIL FUEL TECHNOLOGY 193, 193 (K.E. Cowser & C.R. Richmond eds. 1980); see also DOE ANALYSIS, *supra* note 32, at 5-77.

75. See note 59 *supra*.

76. Designation as hazardous or nonhazardous could mean the economic difference to a developer of \$10 per ton for nonhazardous waste compared to about \$50 per ton for hazardous waste. DOE ANALYSIS, *supra* note 32, at Table 5-18, at 5-75.

77. DOE ANALYSIS, *supra* note 32, at 3-2, 3-12.

duction of pollutants produced from surface and *in situ* mining and particulate matter from the dusts associated with the mining and crushing of raw shale.<sup>78</sup> Problems with coal conversion include emissions that may affect the general air quality of the region surrounding the synfuel plant<sup>79</sup> and fugitive emissions<sup>80</sup> that may affect the direct plant areas.

The burning of fossil fuels for the new synfuel industry also raises long-term questions about the buildup of carbon dioxide in the atmosphere.<sup>81</sup> There is concern that increasing levels of carbon dioxide will cause global warming having an adverse effect on agriculture.<sup>82</sup> Although some warming will occur, continued study is necessary and the DOE contends that the amount of carbon dioxide emitted from synfuel development is not enough to be a constraint to the development of a United States synfuel program.<sup>83</sup>

#### 4. Occupational Hazards

Since it is difficult to characterize the working environment of a commercial scale synfuel plant, the number and extent of occupational hazards associated with synfuel projects is unknown. However, several potential problems are known to exist. Both coal and oil shale development pose serious occupational health problems at each stage of the respective processes.<sup>84</sup> The most significant problem is carcinogenicity. Crude shale oil and coal derived liquids both contain known or suspected carcinogens.<sup>85</sup> In addition, from the time of

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78. These pollutants are categorized as "criteria pollutants" and "non-criteria pollutants" under the Clean Air Act, 42 U.S.C. §§ 7401-7428 (Supp. III 1979). See 40 C.F.R. Part 50 (1980). Criteria pollutants include such gases as carbon monoxide, nitrogen oxides, sulfur oxides, and hydrocarbons. Non-criteria pollutants refer to trace metals such as mercury, arsenic, and boron that are produced from oil shale surface and *in situ* retorting. DOE ANALYSIS, *supra* note 32, at 3-2.

79. DOE identifies these emissions as sulfur oxides, particulate matter, nitrogen oxides, hydrocarbons, hydrogen sulfide, ammonia, cyanide, and trace elements. *Id.* at 3-12.

80. Fugitive emissions are emissions that escape from a controlled stack emission or process stream such as valve or pipe leaks. *Id.*

81. CEQ REPORT, *supra* note 1, at 357.

82. DOE ANALYSIS, *supra* note 32, at 5-31. See generally *id.* at 5-31 to 5-33.

83. *Id.* See COAL OUTLOOK, *supra* note 22, at 76-80.

84. See generally Jackson, *Comparative Industrial Hygiene Aspects for Coal Gasification and Liquefaction, Oil Shale and Tar Sands Processing* in SYNTHETIC FOSSIL FUEL TECHNOLOGY 266, 266-76 (K.E. Cowser & C.R. Richmond eds. 1980).

85. CEQ REPORT, *supra* note 1, at 347; Jackson, *supra* note 86, at 206, 269; Coffin, Guerin & Griest, *The Interagency Program in Health Effects of Synthetic Fossil Fuels Technologies: Operation of a Materials Repository* in SYNTHETIC FOSSIL FUEL TECHNOLOGY 153, 153 (K.E. Cowser & C.R. Richmond eds. 1980).

blasting to the final product stage, oil shale technology exposes its workers to high levels of noise<sup>86</sup> and possible dust, carbon monoxide, and nitrogen dioxide overexposure.<sup>87</sup> In the retorting stage, when the oil shale is heated, the potential for skin contact with carcinogens is very high.<sup>88</sup>

Potential problems of both coal gasification and liquefaction include noise from heavy equipment, dust, fumes, and heat.<sup>89</sup> As the processes progress, workers are exposed to hazardous gases, high pressure steam, and intense heat.<sup>90</sup> Toxicity of these processes has yet to be determined, but coal, for example, contains a large number of elements in trace amounts that under conditions of gasification and liquefaction will form potentially toxic compounds.<sup>91</sup>

Synthetic fuels development on a large commercial scale will involve a wide range of environmental problems. There must be careful plant siting and continual research and testing to determine proper environmental standards. The corporation and the developers should proceed cautiously without disregarding future environmental impacts.

### III. THE STRUCTURE OF THE SYNTHETIC FUELS CORPORATION

The purpose of the Energy Security Act is to provide encouragement to private companies to develop innovative synfuel technologies to help alleviate the nation's dependence upon foreign oil. The SFC was created as the financial institution responsible for administering the federal financial assistance needed to encourage synfuel projects on a large scale.<sup>92</sup> This section discusses the structural aspects of the SFC, both procedural and functional, to illustrate how it will operate and how it will have a significant role in the emerging synfuel industry.

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86. Jackson, *supra* note 84, at 269.

87. *Id.*

88. *Id.* at 270.

89. *Id.* at 271-72.

90. *Id.* at 272.

91. Trace elements released in coal gasification that may form these compounds include: antimony; arsenic; beryllium; cadmium; chromium; lead; mercury; and nickel. COAL OUTLOOK, *supra* note 22, Table 3.3 at 73; CEQ REPORT, *supra* note 1, at 348-54. See also Filby & Khalil, *Trace Elements in the Solvent Refined Coal Processes, SRC I and SRC II* in SYNTHETIC FOSSIL FUEL TECHNOLOGY 102 (K.E. Cowser & C.R. Richmond eds. 1980).

92. S. REP. NO. 387, *supra* note 1, at 131, U.S. CODE CONG. & AD. NEWS at 1877. See also H. CONF. REP. NO. 1104, 96th Cong., 2d Sess. 203, reprinted in [1980] U.S. CODE CONG. & AD. NEWS 2077, 2100.



The SFC is a private corporation formed by Congress with the specific intention that it not be treated or considered as a government agency.<sup>93</sup> It is important to note that the SFC is designed as a bank that will make banking decisions<sup>94</sup> and not as an entity that will undertake research and development responsibilities. It is to award financial incentives to applicants with promising synthetic fuel technology plans. Financial assistance awarded by the SFC is intended to “encourage and supplement,” rather than to “compete with or supplant,” private investment capital which otherwise would be available to a proposed synthetic fuel project.<sup>95</sup> The awards are to be given to the projects requiring the least federal financial involvement.<sup>96</sup>

The advantage to the corporation of not being an agency is its ability to arrange independently and follow through with its financial negotiations. Past attempts by industries to negotiate with government agencies such as the DOE were hindered by annual “budgetary competition” or policy changes within the executive hierarchy.<sup>97</sup> The SFC structure attempts to eliminate bureaucratic entanglements and the politics of agency negotiations. It is anticipated that this will be an incentive for private companies who want to be assured that the institute they deal with has the interest and financial capacity to assist them.<sup>98</sup> The SFC’s financial authority which is backed by the Treasury<sup>99</sup> will also be appealing to industries who would not have been able to receive assistance elsewhere to develop new energy sources.

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93. H. CONF. REP. NO. 1104, *supra* note 92, at 203, U.S. CODE CONG. & AD. NEWS at 2100.

94. S. REP. NO. 387, *supra* note 1, at 131, U.S. CODE CONG. & AD. NEWS at 1877.

95. 45 Fed. Reg. 79,966 (1980).

96. A major portion of the risk is to be borne by the project participants. S. REP. NO. 387, *supra* note 1, at 131, U.S. CODE CONG. & AD. NEWS at 1877.

97. *Id.*, U.S. CODE CONG. & AD. NEWS at 1878.

98. *Id.*, U.S. CODE CONG. & AD. NEWS at 1877-78.

99. Energy Security Act, § 131(c), to be codified at 42 U.S.C. § 8731(c) (Supp. IV 1980). The idea of developing a corporation to undertake the responsibility for important national programs is not new. Prior to the country’s entry into World War I, the United States Shipping Board Emergency Fleet Corporation was appropriated over \$2.5 billion to construct and operate a fleet of ships to meet serious shipping shortages. In 1918, the War Finance Corporation was enacted to furnish credit to industries. Credit and finance problems of the 1930 Depression caused Congress to create the Reconstruction Finance Corporation. Recently, Congress has established Amtrak as a corporation to expand the railroad system, and Comsat to promote the commercial use of earth satellites. S. REP. NO. 387, *supra* note 1, at 132, U.S. CODE CONG. & AD. NEWS at 1878.

The powers of the corporation are vested in a seven-member Board of Directors<sup>100</sup> composed of a chairman and six other directors who are appointed by the president and affirmed by the Senate.<sup>101</sup> The directors serve seven-year staggered terms, with the chairman's term being seven years.<sup>102</sup> To assure a bipartisan grouping, not more than four directors may be members of any one political party.<sup>103</sup> The chairman, who is responsible for the SFC's management, is appointed for a seven-year term on a full-time basis and can hold no other salaried position.<sup>104</sup> The six directors serve full or part-time, as specified in their presidential appointments.<sup>105</sup> Initially, compensation is determined by the president, but it may be modified by a board recommendation and presidential approval.<sup>106</sup> The president may remove directors only for neglect of duty or malfeasance in office.<sup>107</sup>

The board may hold private meetings at the call of the chairman and as provided by corporation bylaws.<sup>108</sup> However, the board must meet no less than quarterly.<sup>109</sup> All meetings of the board conducting official business must be preceded by reasonable public notice and are open to public observation.<sup>110</sup> The board has the right to close a meeting after notice is given at a prior open session if the contents of the meeting might jeopardize any aspects of the synfuels pro-

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100. Energy Security Act, § 116(a), to be codified at 42 U.S.C. § 8712(a) (Supp. IV 1980).

101. *Id.* § 116(a)(2), to be codified at 42 U.S.C. § 8712(a)(2) (Supp. IV 1980). On Sept. 10, 1980, President Carter named John C. Sawhill as head of the SFC. *N.Y. Times*, Sept. 11, 1980, at D1. On September 12, 1980, the President named the six directors. They are Lane Kirkland, head of the American Federation of Labor and Congress of Industrial Organizations (AFL-CIO); Cecil D. Andrus, former Secretary of the Interior; Frank T. Cary, Chairman of International Business Machines Corporation (IBM); Frank Savage, Vice President for Investment Management of Equitable Life Assurance; Catherine B. Cleary, retired chairman of the First Wisconsin Trust Co.; and John D. DeButts, retired chairman of the American Telephone and Telegraph Co. *See Wall St. J.*, Sept. 15, 1980, at 3. *See also N.Y. Times*, Sept. 13, 1980, at 30, col. 1; *Wash. Post*, Sept. 14, 1980, at A9, col. 4.

102. Energy Security Act, § 116(b)(1), to be codified at 42 U.S.C. § 8712(b)(1) (Supp. IV 1980).

103. *Id.* § 116(a)(2), to be codified at 42 U.S.C. § 8712(a)(2).

104. *Id.*

105. *Id.* § 116(c), to be codified at 42 U.S.C. § 8712(c). Any directors serving in part-time capacities may not hold any full-time salaried position in any federal, state, or local government. Directors in full-time capacities can hold no other salaried positions. *Id.*

106. *Id.* § 116(g), to be codified at 42 U.S.C. § 8712(g).

107. *Id.* § 116(b)(3), to be codified at 42 U.S.C. § 8712(b)(3).

108. *Id.* § 116(e), to be codified at 42 U.S.C. § 8712(e).

109. *Id.*

110. *Id.* § 116(f)(1), to be codified at 42 U.S.C. § 8712(f)(1).

grams.<sup>111</sup> If a meeting is closed, minutes will promptly be made available to the public, but with certain sections withheld.<sup>112</sup>

Officers for the corporation, including a general counsel and treasurer, are appointed by the board.<sup>113</sup> The board also defines the officers' duties and fixes their salaries.<sup>114</sup> The chairman may appoint and discharge employees necessary for transacting the corporation's business, but no more than 300 individuals in full-time professional positions may work for the corporation at one time.<sup>115</sup>

The inspector general and deputy inspector general are appointed by the president, with the consent of the Senate, for seven years.<sup>116</sup> They are responsible for audits, investigations, and inspections of the SFC.<sup>117</sup> The inspector general reports directly to the board as he is not under the supervision of any specific officer.<sup>118</sup> Each year, the inspector general must submit a report that is circulated to the board, the president, the Committee on Energy and Natural Resources of the Senate, and the Speaker of the House.<sup>119</sup>

Flexibility and a wide range of freedom characterize the inspector general's job. He has access to all records, reports, audits, or other information relating to his wide range of responsibilities.<sup>120</sup> He may request any necessary information from any federal, state, or local agency;<sup>121</sup> require production of information by subpoena;<sup>122</sup> have

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111. [T]he Board may close a meeting if the meeting is likely to disclose—
- (A) information which is likely to adversely affect financial or securities markets or institutions;
  - (B) information the premature disclosure of which would be likely to—
    - (i) lead to speculation in securities, commodities, minerals or land; or
    - (ii) impede—
      - (I) the ability of the Corporation to establish procurement or synthetic fuel project selection criteria; or
      - (II) its ability to negotiate a contract for financial assistance; . . . .

*Id.*

112. *Id.* § 116(f)(2), to be codified at 42 U.S.C. § 8712(f)(2).

113. *Id.* § 117(b)(1), to be codified at 42 U.S.C. § 8713(b)(1).

114. *Id.*

115. *Id.* § 117(d), to be codified at 42 U.S.C. § 8713(d). Individuals employed for corporation construction projects under Subtitle E are not counted in reaching the 300 person employment limit. *Id.*, see text at note 173 *infra*.

116. *Id.* § 122(a), to be codified at 42 U.S.C. § 8718(a).

117. *Id.* § 122(b)(1)(A), to be codified at 42 U.S.C. § 8718(b)(1)(A).

118. *Id.* § 122(a)(1), to be codified at 42 U.S.C. § 8718(a)(1).

119. *Id.* § 122(d), to be codified at 42 U.S.C. § 8718(d). This report must include an identification and description of significant problems or abuses in the administration and operation of the SFC's programs and operations. The inspector general is to include suggestions as to correction of these problems. *Id.* § 122(c), to be codified at 42 U.S.C. § 8718(c).

120. *Id.* § 122(e)(1), to be codified at 42 U.S.C. § 8718(e)(1).

121. *Id.* § 122(e)(2), to be codified at 42 U.S.C. § 8718(e)(2).

122. *Id.* § 122(e)(3), to be codified at 42 U.S.C. § 8718(e)(3).

direct and prompt access to the board;<sup>123</sup> hire employees to carry out the necessary inspector general functions;<sup>124</sup> obtain services of consultants;<sup>125</sup> and "make such additional investigations and reports relating to the operation of the corporation as are . . . necessary or desirable."<sup>126</sup>

The Energy Security Act establishes an advisory committee to the board for the purpose of reviewing financial assistance solicitation proposals and to advise the corporation on matters within their expertise.<sup>127</sup> The committee must meet no less than semiannually<sup>128</sup> and is composed of the Secretaries of Defense, Interior, and Energy, the Administrator of the Environmental Protection Agency, and the Chairman of the Energy Mobilization Board.<sup>129</sup>

With the corporation's structure in mind, the article will now turn to a discussion of the corporation's functions. This section will focus upon the national synfuel production goal, the required comprehensive strategy, and the type of financial assistance the corporation is allowed to award.

In developing an outlook for an overall synthetic fuel program, Congress has set a national goal for synthetic fuel production from domestic resources. The goal is to produce the equivalent of at least 500,000 barrels of crude oil per day by 1987, increasing to at least two million barrels per day by 1992.<sup>130</sup> In order to monitor the achievement of this goal, the corporation must develop and submit to Congress a comprehensive strategy by June 30, 1984.<sup>131</sup>

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123. *Id.* § 122(e)(4), to be codified at 42 U.S.C. § 8718(e)(4).

124. *Id.* § 122(e)(5), to be codified at 42 U.S.C. § 8718(e)(5).

125. *Id.* § 122(e)(6), to be codified at 42 U.S.C. § 8718(e)(6).

126. *Id.* § 122(h)(1), to be codified at 42 U.S.C. § 8718(h)(1).

127. *Id.* § 123(a), to be codified at 42 U.S.C. § 8719(a).

128. *Id.* § 123(c), to be codified at 42 U.S.C. § 8719(c).

129. *Id.* § 123(b), to be codified at 42 U.S.C. § 8719(b). An Energy Mobilization Board (EMB) has been proposed to expedite the regulatory process involved with the commercialization of new energy programs. It has not yet been enacted. If the Board is accepted by Congress, it may signify an intent by Congress to relax the strong requirements for environmental information and disclosure. *See, e.g.*, S. 1308, 96th Cong., 1st Sess. (1979); H.R. 3801, 97th Cong., 1st Sess. (1981).

130. Energy Security Act, § 125, to be codified at 42 U.S.C. § 8721 (Supp. IV 1980). The 1987 short-term goal is based upon Department of Defense (DOD) needs. Although the DOD's share of total United States energy usage is relatively small, the DOD is the single largest user in the country, and it accounts for 81 percent of all energy used by the federal government. By 1985, the department expects that half of its consumption will be of synthetic fuels if available. Thus, if synfuels at this level are consumed by DOD, the displaced conventional energy supplies can be used in the public sector. R. Grundy, *Synthetic Fuels: A View of the Energy Security Act from the Inside 8-9* (paper presented at the Seventh International Conference on Coal Gasification, Liquefaction, and Conversion to Energy. Univ. of Pittsburgh, Aug. 5, 1980).

131. Energy Security Act, § 126(b)(2), to be codified at 42 U.S.C. § 8722(b)(2) (Supp. IV 1980).

The time period from 1980 to 1984 represents Phase I of the two-stage synfuel program. The comprehensive strategy, if approved, will begin Phase II. The strategy is a condition precedent to further appropriations by Congress. Because Congress was not willing to authorize \$88 billion at one time, \$20 billion was authorized, subject to appropriation, for Phase I. Congress will wait to consider the strategy before authorizing any further funds.<sup>132</sup>

The strategy must contain a comprehensive report of the goals of the SFC and a schedule for goal achievement.<sup>133</sup> Most important, the strategy must include comprehensive reports on facilities funded during Phase I.<sup>134</sup> These project reports must include the "economic and technological feasibility" of each project "including information on product quality, quantity, and cost per unit of production."<sup>135</sup> The strategy must also include the present and projected environmental effects and water requirements<sup>136</sup> of the "mix" of technologies and resources being supported.<sup>137</sup> The strategy will not be approved unless it passes by a joint resolution during the same Congress in which it was submitted.<sup>138</sup>

In order to achieve its production goal, the SFC solicits proposals on a competitive basis<sup>139</sup> for synfuel projects and awards financial assistance to concerns meeting board approval.<sup>140</sup> If, after soliciting and reviewing the proposals, they are not acceptable to the board, the board may negotiate contracts for private projects on its own.<sup>141</sup> Only in the event that these prior steps have been taken, and if there are still insufficient proposals to achieve the synfuel goals, the SFC may contract for corporation construction projects.<sup>142</sup>

The Act limits the board's seemingly broad discretion by specifying standards by which a program's desirability must be measured.<sup>143</sup> Preference must be given to concerns requiring the least

132. *Id.* § 195, to be codified at 42 U.S.C. § 8795.

133. *Id.* § 126(b)(3), to be codified at 42 U.S.C. § 8722(b)(3).

134. *Id.* § 126(b)(3)(E), to be codified at 42 U.S.C. § 8722(b)(3)(E).

135. *Id.* § 126(b)(3)(E)(i), to be codified at 42 U.S.C. § 8722(b)(3)(E)(i).

136. *Id.* § 126(b)(3)(E)(ii), to be codified at 42 U.S.C. § 8722(b)(3)(E)(ii).

137. *Id.* § 126(b)(3)(F), to be codified at 42 U.S.C. § 8722(b)(3)(F).

138. *Id.* § 126(c), to be codified at 42 U.S.C. § 8722(c).

139. *Id.* § 127(a)(1), to be codified at 42 U.S.C. § 8723(a)(1). Notice of such solicitations are published in the Federal Register. The first notice was published at 45 Fed. Reg. 79,965 (1980).

140. Energy Security Act, § 126(a)(1)(B), to be codified at 42 U.S.C. § 8722(a)(1)(B) (Supp. IV 1980).

141. *Id.* § 126(a)(1)(C), to be codified at 42 U.S.C. § 8722(a)(1)(C).

142. See text at note 178 *infra*.

143. Energy Security Act, § 131(b)(2), to be codified at 42 U.S.C. § 8731(b)(2) (Supp. IV 1980).

corporation financial commitment and “the lowest unit production cost within a given technological process taking into account the amount and value of the anticipated synthetic fuel products.”<sup>144</sup> The other factors considered are the “diversity of the technologies,”<sup>145</sup> the potential unit production cost of the synfuel product,<sup>146</sup> the overall “production potential” of the technology,<sup>147</sup> and the “potential of the technology for complying with applicable regulatory requirements.”<sup>148</sup>

Financial assistance from the SFC is required to be given in the following order of decreasing priority reflecting Congress’ desire to fund concerns requiring the least financial commitments first:

- 1) price guarantees, purchase agreements, and loan guarantees;
- 2) loans; and
- 3) joint ventures.<sup>149</sup>

Purchase agreements are contracts entered into by the SFC for any designated amount of the production from a synthetic fuel project.<sup>150</sup> Any price specified in the purchase agreement is not allowed to exceed the estimated prevailing market price at the time of delivery, as determined by the Secretary of Energy, unless the corporation determines that a higher price is necessary to achieve the synfuel goals intended by Congress.<sup>151</sup> After taking delivery of the synfuels, the corporation has the right subject to other provisions of the statute, to sell to any other individual.<sup>152</sup> However, the Department of Defense has a first right of refusal.<sup>153</sup> If the Department of Defense or another federal agency chooses to purchase the fuel, the federal agency must pay the prevailing market price of the fuel they are presently replacing and the SFC would pay the difference.<sup>154</sup>

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144. *Id.* § 131(b)(2)(A), to be codified at 42 U.S.C. § 8731(b)(2)(A).

145. *Id.* § 131(b)(3)(A), to be codified at 42 U.S.C. § 8731(b)(3)(A).

146. *Id.* § 131(b)(3)(B)(i), to be codified at 42 U.S.C. § 8731(b)(3)(B)(i).

147. *Id.* § 131(b)(3)(B)(ii), to be codified at 42 U.S.C. § 8731(b)(3)(B)(ii). “Overall production potential” includes potential for “replication, the extent of the resource and its geographic distribution, and the potential end use.” *Id.*

148. *Id.* § 131(b)(3)(B)(iii), to be codified at 42 U.S.C. § 8731(b)(3)(B)(iii).

149. *Id.* § 131(b)(2)(B), to be codified at 42 U.S.C. § 8731(b)(2)(B).

150. *Id.* § 135(a), to be codified at 42 U.S.C. § 8735(a).

151. *Id.*

152. *Id.* § 135(d), to be codified at 42 U.S.C. § 8735(d).

153. *Id.* § 172(d)(2), to be codified at 42 U.S.C. § 8722(d)(2) gives the Department of Defense the first right of refusal for synfuels acquired by the corporation through purchase agreements, joint ventures, or corporation construction projects.

154. *Id.* § 135(d), to be codified at 42 U.S.C. § 8735(d). H. CONF. REP. NO. 1104, *supra* note 92, at 222, U.S. CODE CONG. & AD. NEWS at 2120.

Because developers are hesitant to invest large amounts of capital in a product that may not sell, both purchase agreements and price guarantees serve as appropriate incentives. If the synfuels prices are significantly higher than the world price of oil, the developers are assured of a market. With the price guarantee provision, the corporation can enter into contracts to purchase the synthetic fuel at a future date for a specific price.<sup>155</sup> The price determined must be the minimum subsidy needed to provide an adequate incentive to the project developers.<sup>156</sup>

With the loan guarantee provision, the corporation can guarantee principal and interest on loans for synfuel projects.<sup>157</sup> This makes it easier for projects to receive funds from outside financial institutions who are hesitant to fund an industry with such high risks. The SFC is limited to a guarantee of no more than 75 percent of the total project cost,<sup>158</sup> but the statute permits guarantees to be made available if the project exceeds the cost that was originally estimated.<sup>159</sup>

Under the loan agreement provision, the SFC may actually provide loans for a given project.<sup>160</sup> The corporation may provide up to 49 percent of the project's estimated cost unless this limit would inhibit the financial capability of the project.<sup>161</sup> If the board finds this to be the case, up to 75 percent of the costs may be authorized.<sup>162</sup>

The joint venture option differs from any of the forms of financial assistance previously mentioned. Although Congress' preference is to limit the SFC's financial participation to price guarantees, purchase agreements, loan guarantees, and loans, it also wanted the SFC to be flexible enough to experiment with innovative synfuel projects.<sup>163</sup> For this reason, the provision allows for the SFC to own a 60 percent equity interest<sup>164</sup> in a synfuel "module" where it is determined that this is the only way to prove a given technology with a given feedstock.<sup>165</sup> A synthetic fuel module differs from other com-

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155. Energy Security Act, § 134, to be codified at 42 U.S.C. § 8734 (Supp. IV 1980).

156. *Id.*

157. *Id.* § 133, to be codified at 42 U.S.C. § 8733.

158. *Id.* § 133(a)(2), to be codified at 42 U.S.C. § 8733(a)(2).

159. *Id.* § 133(3), to be codified at 42 U.S.C. § 8733(3).

160. *Id.* § 132(a)(1), to be codified at 42 U.S.C. § 8732(a)(1).

161. *Id.* § 132(a)(2)(B), to be codified at 42 U.S.C. § 8732(a)(2)(B).

162. *Id.* § 132(a)(2)(A), to be codified at 42 U.S.C. § 8732(a)(2)(A).

163. H. CONF. REP. NO. 1104, *supra* note 92, at 223, U.S. CODE CONG. & AD. NEWS at 2120-21.

164. Energy Security Act, § 136(a), to be codified at 42 U.S.C. § 8736(a) (Supp. IV 1980).

165. H. CONF. REP. NO. 1104, *supra* note 92, at 223, U.S. CODE CONG. & AD. NEWS at 2121. A feedstock is the resource, *i.e.*, coal or oil shale, from which a synfuel is made.

mercial synfuels projects funded by the SFC in several ways: it is smaller than a synthetic fuel project;<sup>166</sup> its purpose is to prove a given technology;<sup>167</sup> and it must be expandable at its present site to become a commercial size plant if it is successful.<sup>168</sup>

The corporation has no direct participation in the construction and operation of a module.<sup>169</sup> If the module is successful, the SFC will sell its equity ownership to the partnership.<sup>170</sup> If unsuccessful, and the module investors cannot find a substitute acceptable to the corporation board, the board may protect its investment by taking over the project.<sup>171</sup> However, the SFC may not manage the facility for more than five years after the takeover, and it must find a suitable buyer.<sup>172</sup>

The SFC is also permitted to own and contract for synthetic fuel projects.<sup>173</sup> The projects would be government owned, but contractor constructed and operated.<sup>174</sup> The corporation is allowed only three projects of this type prior to the approval of the comprehensive strategy.<sup>175</sup> A corporation construction project may only be undertaken for one of a kind technologies<sup>176</sup> and if no participant could be found who would invest under the previous forms of financial assistance.<sup>177</sup>

Generally, the corporation construction project provision will not be used unless private investors refuse to build under reasonable terms. The provision, which is to be used only as a last resort,<sup>178</sup> allows the SFC to bargain with industry on an equal basis.<sup>179</sup> If industry were to insist upon very high price guarantees or other financial assistance, not only would SFC finances be absorbed quickly, but

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166. Energy Security Act, § 136(d)(1)(A)(i), to be codified at 42 U.S.C. § 8736(d)(1)(A)(i).

167. *Id.* § 136(d)(1)(A)(ii), to be codified at 42 U.S.C. § 8736(d)(1)(A)(ii).

168. *Id.* § 136(d)(1)(A)(iii), to be codified at 42 U.S.C. § 8736(d)(1)(A)(iii).

169. *Id.* § 136(e), to be codified at 42 U.S.C. § 8736(e).

170. H. CONF. REP. NO. 1104, *supra* note 92, at 223, U.S. CODE CONG. & AD. NEWS at 2121.

171. *Id.* at 224, U.S. CODE CONG. & AD. NEWS at 2121.

172. *Id.* Because it serves as a demonstration, the joint venture can only be undertaken prior to the comprehensive strategy. Energy Security Act, § 136(a), to be codified at 42 U.S.C. § 8736(a) (Supp. IV 1980).

173. *Id.* § 141(a), to be codified at 42 U.S.C. § 8741(a). This provision is often referred to as "construction projects under Subtitle E."

174. *Id.* These projects are referred to as "GOCO's"—government owned, but contractor constructed and operated.

175. *Id.* § 142(a), to be codified at 42 U.S.C. § 8742(a).

176. *Id.* § 126(a)(2)(A), to be codified at 42 U.S.C. § 8722(a)(2)(A).

177. *Id.* § 126(a)(1)(D), to be codified at 42 U.S.C. § 8722(a)(1)(D).

178. *Id.*

179. 126 CONG. REC. H5,723 (daily ed. June 26, 1980) (remarks of Rep. Gore).



the goal to encourage synfuels at competitive prices with foreign oil would be frustrated. Because of the corporation construction project provision, if industry refuses to apply a technology to produce synfuels at a price the SFC believes is reasonable, the corporation can build a project to show it can be done.<sup>180</sup>

The SFC has a finite existence and is scheduled to terminate on September 30, 1997.<sup>181</sup> After September 30, 1992, no new awards may be given and the corporation must begin to terminate its business.<sup>182</sup> In 1997, responsibility for completing unfinished corporation business will be transferred to the Secretary of the Treasury.<sup>183</sup> When the secretary settles any outstanding affairs and legal obligations and reports to Congress, the corporation will be officially dissolved.<sup>184</sup>

#### IV. THE SYNTHETIC FUELS CORPORATION AND NEPA

Because of the high priority which has been given to the creation of synthetic fuels, the SFC was established free of many of the constraints placed upon other departments or agencies of the federal government.<sup>185</sup> Generally, any federal agency would be required to compile an EIS if it chose to undertake an action or project that would "significantly affect the quality of the human environment."<sup>186</sup> The previous discussion of the corporation was intended to introduce its structure and functions as background for an analysis of the ramifications that may occur since the SFC is an independent federal entity exempt from the requirements of the National Environmental Policy Act of 1969 (NEPA).<sup>187</sup> Because the EIS is seen as a primary informational source in environmental decision making, this section considers the justification for Congress' decision to exempt the SFC from the EIS requirement when funding private synfuel projects.

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180. *Id.* Furthermore, any corporation construction project built by the SFC is a "major federal action" for purposes of NEPA. The SFC will be considered an agency for this purpose and must write an EIS. Energy Security Act, § 175(b), to be codified at 42 U.S.C. § 8775(b) (Supp. IV 1980).

181. *Id.* § 191(2), to be codified at 42 U.S.C. § 8791(2).

182. *Id.* § 191(1), to be codified at 42 U.S.C. § 8791(1).

183. *Id.* § 193(a), to be codified at 42 U.S.C. § 8793(a).

184. *Id.* § 193(b), to be codified at 42 U.S.C. § 8793(b).

185. H. CONF. REP. NO. 1104, *supra* note 92, at 203, U.S. CODE CONG. & AD. NEWS at 2100.

186. National Environmental Policy Act of 1969, § 102(2)(C), 42 U.S.C. § 4332(2)(C) (1976).

187. See text at note 14 *supra*.

It is the purpose of this discussion, while recognizing that the SFC is not an agency, to focus upon how the SFC will integrate environmental information into its financial decision-making process. First, this section will discuss the purpose of the EIS requirement under NEPA. This is necessary in order to evaluate and later compare how the SFC will handle environmental decision making in light of its EIS exemption and whether or not this decision making will be effective. Second, it will discuss when an EIS will be written in the development of a synfuel plant even though it will not be written by the SFC. Third, the discussion will focus upon the corporation's financial decision-making process and the comprehensive strategy to see how environmental information will be evaluated in synfuel plant funding and in the overall evaluation of the synfuel industry in 1984. Finally, the article will discuss whether or not environmental safeguards exist so that the goals of NEPA can be realized in the SFC despite the EIS exemption.

#### A. *NEPA and the EIS Requirement*

NEPA is a federal environmental law which was enacted by Congress to ensure that environmental consequences are considered and that proper disclosure is made before an action that will significantly affect the quality of the human environment is taken by any government agency.<sup>188</sup> NEPA imposes an affirmative obligation on agen-

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188. National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321-4347 (1976). Section 4331 outlines the broad environmental policy which reads:

The Congress, recognizing the profound impact of man's activity on the interrelations of all components of the natural environment, particularly . . . industrial expansion, resource exploitation, and new and expanding technological advances and recognizing further the critical importance of restoring and maintaining environmental quality . . . declares that it is the continuing policy of the Federal Government . . . to use all practicable means and measures . . . to foster and promote . . . to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.

NEPA is described in a practical manner in the regulations of the Council on Environmental Quality (CEQ). 40 C.F.R. § 1500.1 (1980) reads: "It [NEPA] establishes policy, sets goals (section 101); and provides means (section 102) for carrying out the policy. section [sic] 102(2) contains 'action forcing' provisions to make sure that federal agencies act according to the letter and spirit of the Act."

CEQ's role is described in 42 U.S.C. § 4344 (1976). The council does not administer routine, ongoing programs. However, over the years, CEQ has become the supervising authority for implementation of NEPA by the agencies. 43 Fed. Reg. 55,978 (1978).

Although a small agency, CEQ has established itself as the environmental ombudsman. It influences government officials and the public through reports and studies. Additionally, it has

cies to seek out environmental information and to make this information known and available to public officials and citizens before decisions are made and actions are taken which may significantly affect the quality of the human environment. The most significant provision of NEPA is section 102(2)(C) which requires the compilation of an EIS by government agencies<sup>189</sup> before undertaking significant environmental actions.

The purpose of the EIS is to inform officials and the public, to identify reasonable alternatives and adverse effects, and to provide evidence that agencies have made the necessary environmental analyses to allow a reasonable decision.<sup>190</sup> If no EIS is ever written, or if it is written too late in the project's plans, the utility of the statement may be lost. Although the proper time to begin EIS preparation has never been clearly established, the Council on Environmental Quality (CEQ)<sup>191</sup> and the courts have emphasized that the EIS should be prepared as early in an agency's decision-making process as possible.<sup>192</sup>

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issued what have become the authoritative rules with regard to what agencies must do to comply with NEPA. The latest CEQ rules became effective as of July 30, 1979, 40 C.F.R. § 1506.12 (1980), changed the previous rules referred to as "guidelines" to the new "regulations," and they attempt to clarify the EIS requirements. The CEQ regulations are highly regarded by the courts. See *Andrus v. Sierra Club*, 442 U.S. 347, 358 (1979), where the CEQ regulations received "substantial deference."

189. National Environmental Policy Act of 1969, § 102(2)(C), 42 U.S.C. § 4332(2)(C) (1976).

190. The court in *Silva v. Lynn*, succinctly described the purposes of an EIS as follows:

The detailed statement requirement serves at least three purposes. First, it permits the court to ascertain whether the agency has made a good faith effort to take into account the values NEPA seeks to safeguard . . . . Second, it serves as an environmental full disclosure law, providing information which Congress thought the public should have concerning the particular environmental costs involved in a project . . . . Finally . . . the requirement of a detailed statement helps insure the integrity of the process of decision by precluding stubborn problems or serious criticism from being swept under the rug . . . .

*Silva v. Lynn*, 482 F.2d 1282, 1284-85 (1st Cir. 1973).

191. See text at note 188 *supra*.

192. 40 C.F.R. § 1501.2 (1980). "Agencies shall integrate the NEPA process with other planning at the earliest possible time . . . ." The regulations later state:

An agency shall commence preparation of an environmental impact statement as close as possible to the time the agency is developing or presented with a proposal . . . so that preparation can be completed in time for the final statement to be included in any recommendation or report on the proposal. The statement shall be prepared early enough so that it can serve *practically* as an *important contribution to the decisionmaking process and will not be used to rationalize or justify* decisions already made.

*Id.* § 1502.5 (1980) (emphasis added). See *Scientists' Institute for Public Information, Inc. v. Atomic Energy Comm'n.*, 481 F.2d 1079 (D.C. Cir. 1973) where the court stated: "Statements must be written late enough in the development process to contain meaningful information,

In light of the corporation's characteristics, goals, and overall potential impact upon the environment, it is important to consider what role environmental information will play in its decision-making process. With the exception of the SFC's own construction projects (to be distinguished from private sector projects), the SFC's activities are not "major Federal actions significantly affecting the quality of the human environment" and no EIS must be written.<sup>193</sup> However, it can be argued that the \$20 billion committed by the SFC to the promotion of synthetic fuels is a major federal action. Cases have found major federal actions where financial assistance has been given to projects with far less national significance than the development of synthetic fuels.<sup>194</sup> Absent the EIS exemption in the Energy Security Act, an EIS would more than likely be required when large amounts of financial aid are awarded by the SFC.<sup>195</sup>

### *B. When an EIS Will Be Written*

To determine whether or not EIS's will be written for private synfuel projects involves an inquiry into what constitutes a "major Federal action significantly affecting the quality of the human environment."<sup>196</sup> The EIS requirement will not be circumvented merely because the federal synfuel funding mechanism is exempt from NEPA. The mandate that "all agencies" must comply with NEPA has not changed,<sup>197</sup> and the CEQ regulations for NEPA compliance are applicable and binding.<sup>198</sup> The EIS requirement may be invoked

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but they must be written early enough so that whatever information is contained can practically serve as an input into the decision making process." *Id.* at 1094. *See also* Calvert Cliffs Coordinating Comm. v. Atomic Energy Comm'n, 449 F.2d 1109 (D.C. Cir. 1971).

193. *See* text at note 14 *supra*.

194. Courts have construed the concept of federal action so broadly that even a low level of federal involvement invokes the EIS requirement. *See* Ely v. Velde, 451 F.2d 1130 (4th Cir. 1970) (LEAA block grant situation); National Organization for Reform of Marijuana Laws v. United States, 452 F. Supp. 1226 (D.D.C. 1978) (financial aid assistance to a program of aerial spraying of marijuana fields with pesticides constitutes "major Federal action").

195. *See* Scientists' Institute for Public Information, Inc. v. Atomic Energy Comm'n, 481 F.2d 1079 (D.C. Cir. 1973) (the federal financial commitment of over \$100 million per year was found to be an "irretrievable commitment of resources," and the AEC was required to prepare an EIS on the impacts of new nuclear technology). This case also raises an interesting question as to whether or not the SFC should have been required to write an EIS for the entire synfuel industry.

196. National Environmental Policy Act of 1969, § 102(2)(C), 42 U.S.C. § 4332(2)(C) (1976). *See generally* W.H. RODGERS, ENVIRONMENTAL LAW 762 (1977).

197. National Environmental Policy Act of 1969, § 102(2), 42 U.S.C. § 4332(2) (1976). *See* note 13 *supra*.

198. 40 C.F.R. § 1500.3 (1980).

when the private projects apply for permits, licensing, or authorization from federal, state, or local agencies.<sup>199</sup>

Since synfuel projects require a multitude of permits, licenses, and authorizations from government agencies in the preconstruction period as well as during construction and operation, it would be difficult for a commercial size project to be built without an EIS on the project or, at least, on the impact of the specific permit being written. For an oil shale facility, more than 100 permits are required for its construction and operation.<sup>200</sup> On the federal level, for example, permits or approvals will be required, among others, from the United States Army Corps of Engineers for discharge of dredged or fill materials into United States' waters<sup>201</sup> and the EPA for the discharge of pollutants in the nation's waters.<sup>202</sup> The remainder of this subsection will discuss how an EIS will be invoked on the federal level.

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199. Granting of licenses to a private industry is a familiar and established example of major federal action. See *Sierra Club v. Morton*, 514 F.2d 856, 875 (D.D.C. 1975), *rev'd on other grounds sub nom.*, *Kleppe v. Sierra Club*, 427 U.S. 390 (1976); *Davis v. Morton*, 469 F.2d 593, 596-97 (10th Cir. 1972); *Natural Resources Defense Council v. Morton*, 388 F. Supp. 829, 834 (D.D.C. 1974), *cert. denied*, 427 U.S. 913 (1976). See generally *Calvert Cliffs' Coordinating Comm. v. Atomic Energy Comm'n*, 449 F.2d 1109 (D.D.C. 1971). In addition to NEPA, many states have enacted State Environmental Policy Acts (SEPAS). For a list of these states see CEQ REPORT, *supra* note 1, at 595. Some states require an EIS to be written whenever local government agencies, including counties, consider major actions significantly affecting the quality of the environment. Sometimes both federal and state EIS's are required, or sometimes one or the other is required on its own. See National Environmental Policy Act of 1969, § 102(D), 42 U.S.C. § 4332(D) (1976); DOE ANALYSIS, *supra* note 32, at 4-26. A thorough discussion of state environmental regulations is not possible within the scope of this article, but anyone seeking state authorization for a synfuel facility should become familiar with state policies because some states are taking an active role in synfuel regulation.

200. 11 ENVIR. REP. (BNA) (Curr. Dev.) 330 (1980). Coal gasification companies also may require permits and approvals before beginning construction and operation. The American Natural Resources Coal Gasification Company had to receive at least five authorizations that were federal, and at least eleven state entities had a say in preconstruction regulations. On the state level, permits or approvals were necessary for numerous reasons, among them were siting, air pollution control, solid waste disposal, hazardous waste control, sewage treatment, and underground water appropriation. On the county level, permits were needed for access to county roads, zoning, conditional use, and erosion and sediment control planning. COAL OUTLOOK, *supra* note 22, at 99-101.

201. 33 C.F.R. § 323.3 (1979). See generally DOE ANALYSIS, *supra* note 32, at Figs. F-1, F-2.

202. 33 U.S.C. § 1342(a) (1976). Although the Environmental Protection Agency (EPA) is exempt from NEPA requirements for most aspects of the Federal Clean Water Act, 33 U.S.C. § 1371(c)(1) (1976), compliance with NEPA is required for the issuance of a permit for the discharge of any pollutant by a new source. *Id.* By issuing permits under its National Pollutant Discharge Elimination System (NPDES), the agency regulates the amount of discharge into surface water. See 40 C.F.R. § 6.6000(a) (1980).

When a permit is required from a federal agency, the responsible official<sup>203</sup> must at the earliest possible time determine whether or not the activity involving the permit or approval would significantly affect the quality of the human environment.<sup>204</sup> If he determines it will not, he will prepare a public document verifying that sufficient analysis has been done to determine that an EIS is not required. This document is an environmental assessment.<sup>205</sup> However, if it is determined that there would be a significant effect on the environment, further information must be supplied for EIS preparation.<sup>206</sup> Preparation of the EIS must follow the procedure as set forth in the CEQ regulations.<sup>207</sup> The regulations allow for a draft EIS and time for public comment upon it.<sup>208</sup> In many situations, a lead agency<sup>209</sup> will be appointed to coordinate EIS preparation for a specific project involving the input of several agencies. In such a situation, each agency involved would cooperate with the lead agency by submitting information discussing the impact of the activity for which it has permit-granting authority. This would be incorporated into an EIS

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203. Each agency designates its "responsible official" for EIS preparation. For the EPA it is the Regional Administrator, 40 C.F.R. § 6.103 (1980), and for the Army Corps it is the District Engineer, 33 C.F.R. § 325.4(b)(1) (1979).

204. See 40 C.F.R. § 1501.2 (1980).

205. *Id.* § 1508.9 (1980).

206. 33 C.F.R. § 325.4(b)(3) (1980).

207. 40 C.F.R. Part 1501 (1980).

208. This concept is important because it relates to the environmental disclosure that must be made by agencies in compiling EIS's, but this disclosure will not be done by the SFC because of its exemption. The agencies within the NEPA process are kept in an open position of accountability from the beginning of the process until after the final EIS is written and open for public comment. The agencies must provide public notice of NEPA related hearings and must make environmental documents available to any interested persons or agencies. 40 C.F.R. § 1506.6 (1980). Actions must be published in the Federal Register, and notice must be mailed to national organizations reasonably expected to be interested in the matter. *Id.* § 1506.6(b)(2) (1980). Concerning local effects, the agency may go so far as to put notices in local papers, *id.* § 1506.6(b)(3)(iv) (1980), or send them to interested community organizations. *Id.* § 1506.6(b)(3)(vi) (1980). Before the final EIS is completed, agencies must invite comments from any other federal agency with jurisdiction over the project or with special expertise on the environmental impact of a project, state and local agencies, the applicant, or other interested parties or organizations. *Id.* § 1503.1 (1980). Once the EIS is completed, either in draft or final form, it is put on file at the EPA, *id.* § 1506.9, which in turn puts notice of weekly EIS filings in the Federal Register. No decision may be made on the proposed action until the required time period for EIS comment lapses. *Id.* § 1506.10(b). This well-structured compilation program is what the SFC would have to comply with if it were an agency for purposes of private projects under § 102(2)(C) of NEPA.

209. A lead agency supervises the preparation of an EIS if more than one agency is involved. The CEQ regulations describe how a lead agency is selected. 40 C.F.R. § 1501.5 (1980).

on the whole project.<sup>210</sup> In fact, DOE, because of its expertise, has been selected as the lead agency for some existing synfuel projects.<sup>211</sup> Presumably, it will retain this role in the future.

Thus, despite the fact that an EIS will not be written in the financial assistance stage by the SFC, it seems certain that an EIS will be required at a fairly early stage in the development of a synfuel plant. Major federal actions will likely be found by a variety of agencies in the development of the synfuel industry. These agencies will prepare their own statements or will cooperate with the appropriate lead agency for EIS preparation. With this in mind, the discussion will now focus upon the actual analysis of the SFC decision-making process. The analysis will consider the extent to which environmental factors are taken into consideration by the SFC when funding many of the projects that will constitute the nation's synfuel industry.

### *C. The Corporation's Decision-making Process*

The corporation is not required to write an EIS when it contemplates private project funding.<sup>212</sup> Thus, the SFC makes financial decisions about future synfuel projects without the benefit of the EIS required under NEPA. Financial assistance would probably not be authorized if a project is so environmentally unsound as to make it likely that it would later be abandoned, but nevertheless, the importance of the EIS process is that it focuses upon the environmental implications of an anticipated project. Therefore, the fact that an EIS is not required, means that the corporation is not legally bound under NEPA or held directly accountable if it does not thoroughly consider environmental information in its funding decisions.

Although the SFC is exempt from the EIS requirement, it could have the benefit of information similar to that normally contained in an EIS. Environmental impact statements are frequently prepared

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210. If it is determined that the subject being considered for a project permit or authorization is a "major federal action," the question becomes whether the EIS must be written for the whole project or merely for the subject of the permit or the authorization. If the responsible official's decision is challenged, the challengers may argue that an EIS should be written for an entire project, using the permit as the basis for invoking discussion of all environmental questions. When more than one agency is involved, the problem is solved when a comprehensive EIS is written with input from each of the agencies. *See Save the Bay, Inc. v. U.S. Corps of Engineers*, 610 F.2d 322, 327 (5th Cir. 1980) (plaintiffs argued that granting of a pipeline permit merits consideration of whether an EIS should be written on an entire project, not just the pipeline, but the court did not consider the issue).

211. 11 ENVIR. REP. (BNA) (Curr. Dev.) 1870 (1981); *see also* 11 ENVIR. REP. (BNA) (Curr. Dev.) 738-39 (1980).

212. *See* note 14 *supra*.

by private parties as part of their application procedure to an agency, not by the agency itself.<sup>213</sup> If the SFC would require detailed environmental information from its applicants as a prerequisite to funding, environmental factors would be presented in the initial stages of the project, and the type of reasoned decision making NEPA contemplates could, to some extent, take place.

Presently, when a project applies for financial assistance, there are stated criteria that the corporation must use as its basis for decision making.<sup>214</sup> First, the board must consider the diversity of technology and the production costs of a project.<sup>215</sup> Next, there are some environmental factors that the board is required to take into account. It must consider the long-term potential of the technology in light of the extent of the natural resources required and their geographic distribution;<sup>216</sup> water availability and water quality impact;<sup>217</sup> and the compliance of the technology with applicable regulatory requirements.<sup>218</sup> If the SFC were to require projects to submit thorough environmental reports with adequate detail discussing environmental consequences and alternatives, the SFC would have a basis for reasoned environmental as well as financial decision making. However, it appears from the initial solicitation proposal already published by the SFC, that it is not requiring detailed environmental information from its applicants before March 31, 1981.<sup>219</sup> The only detailed information required is for "technical, business, and financial" data.<sup>220</sup> What detail will be required for environmental purposes after that date is yet to be seen.

Thus, there is ample opportunity for the SFC to require detailed environmental information when making its financial decisions, but, at this early stage in the development of the synfuel industry, the SFC does not seem to be doing so. It wants to encourage proposals

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213. See, e.g., 40 C.F.R. § 6.507(h) (1980) discussing different means of EIS preparation utilized by the EPA.

214. See generally Energy Security Act, § 131(b)(3), to be codified at 42 U.S.C. § 8731(b)(3) (Supp. IV 1980).

215. *Id.* § 131(b)(3)(A), (B)(i), to be codified at 42 U.S.C. § 8731(b)(3)(A), (B)(i).

216. *Id.* § 131(b)(3)(B)(ii), to be codified at 42 U.S.C. § 8731(b)(3)(B)(ii).

217. 45 Fed. Reg. 79,965-66 (1980).

218. Energy Security Act, § 131(b)(3)(B)(iii), to be codified at 42 U.S.C. § 8731(b)(3)(B)(iii).

219. 45 Fed. Reg. 79,966 (1980). The initial proposal is divided into two phases. Phase I opened Nov. 21, 1980, and closed March 31, 1981. The instruction in this early stage, in order to encourage applicants is merely to "adequately describe" proposed project plans. However, in Phase II, "promising proposals" from Phase I will need to submit *detailed supplemental* information. *Id.*

220. *Id.*



without burdening the developers with environmental information requirements.<sup>221</sup> Also, even though there are some environmental factors the corporation is statutorily required to take into account, it is not legally bound as an agency would be under NEPA. While this subsection deals with how the SFC is presently making its independent decisions, the next subsection will discuss how the SFC will be held accountable in the comprehensive strategy to be presented to Congress in 1984.

#### *D. The Comprehensive Strategy*

In order to allow time for project development, the corporation's public analysis of environmental factors will be written in 1984 in the form of a comprehensive strategy. This will be the time when the SFC will be accountable for its decisions. The comprehensive strategy will be an overall assessment of the board's effectiveness in decision making. If there are major problems, this will be the environmentalists' chance to voice their concerns to Congress before any further funds are allocated to the corporation. In addition to reporting the economic and technical feasibility of the projects, the strategy is required to discuss the present and projected environmental effects and water requirements of the projects.<sup>222</sup> Once the projects are underway, all of the parties involved, particularly the corporation, will be in a stronger position to judge environmental problems.

However, there is no indication of how thorough the comprehensive strategy will be. It does not appear from the legislation that it will be as environmentally oriented as an EIS would be.<sup>223</sup> In fact, the strategy will include reports on each project assisted, with more emphasis on production schedules, economics, and private sector responsibility<sup>224</sup> than on environmental concerns, although the strategy is to report the environmental effects of each facility.<sup>225</sup> In addition, preparation of this report in 1984 may be an after the fact assessment that is too late to affect decision making. One of the purposes of an EIS is to avoid "irreversible and irretrievable"<sup>226</sup> commitments, but this may have already occurred by 1984.

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221. *Id.*

222. Energy Security Act, § 126(b)(3)(E)(ii), to be codified at 42 U.S.C. § 8722(b)(3)(E)(ii) (Supp. IV 1980).

223. *Id.* § 126(b)(3), to be codified at 42 U.S.C. § 8722(b)(3). The contents required in the comprehensive strategy are not primarily environmental.

224. *Id.* § 126(b)(3), to be codified at 42 U.S.C. § 8722(b)(3).

225. *Id.* § 126(b)(3)(E)(ii), to be codified at 42 U.S.C. § 8722(b)(3)(E)(ii).

226. National Environmental Policy Act of 1969, § 102(2)(C)(v), 42 U.S.C. § 4332(2)(C)(v)(1976). See note 13 *supra*.

*E. Can NEPA's Goals Be Recognized in the SFC?*

Generally, NEPA seeks a good faith effort to take environmental effects into account, serves as a full disclosure law, and keeps serious environmental problems from being ignored in decision-making processes. From what is known about the corporation at this early date, it appears that these goals can, to some extent, be realized by the corporation if it makes the effort to solicit the proper environmental information from the projects that it funds. If the SFC does not use its initiative to solicit detailed environmental information, there may be serious effects. Not only is there the possibility of committing large sums of money to an environmentally unsound project, but, if proper decision making is done at an early stage, it will alleviate problems for the agencies in later getting synfuel projects underway.

On one hand, it appears that Congress did not intend environmental information to play a significant role in SFC decision making. This is evidenced by the fact that Congress has exempted the SFC from writing an EIS,<sup>227</sup> has designated a spot on the Advisory Committee for the chairman of the Energy Mobilization Board should it be enacted,<sup>228</sup> and has mandated that the SFC give priority to any concern proposing a synfuel project in any state that intends to expedite all regulatory, licensing, and similar government activities related to such project.<sup>229</sup> On the other hand, Congress does require that the SFC take environmental factors into account in its decision making.<sup>230</sup> The corporation must consider that the projects are subject to all existing federal, state, and local environmental laws and it must fund them accordingly.<sup>231</sup>

Some of the goals of NEPA can be realized in the corporation while others cannot. For example, the NEPA process generally seeks to have a discussion of alternative means of achieving an end. This type of evaluation will not be made by the SFC. The creation of the corporation by Congress is the commitment to develop synfuels

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227. Energy Security Act, § 175(b), to be codified at 42 U.S.C. § 8775(b) (Supp. IV 1980).

228. *Id.* § 123(b), to be codified at 42 U.S.C. § 8719(b).

229. *Id.* § 127(f), to be codified at 42 U.S.C. § 8723(f).

230. See text at notes 216-18 *supra*. While Congress accounted for environmental planning, it is to be done by the federal agencies after funding. Once financial assistance is given, the recipient must consult with the Administrator of the EPA, the Secretary of Energy, and appropriate state agencies to develop a plan, acceptable to the board, for monitoring environmental and health related emissions from the construction and operation of the plant. Energy Security Act, § 131(e), to be codified at 42 U.S.C. § 8731(e) (Supp. IV 1980).

231. Energy Security Act, § 143(a), to be codified at 42 U.S.C. § 8743(a) (Supp. IV 1980).

as opposed to other energy sources or conservation measures. It constitutes a congressional determination that the economic and social benefits outweigh the environmental harms involved in synfuels.

However, even with the EIS exemption, the corporation and government agencies, although not required, could enter into an interagency plan similar to a cooperating agency idea<sup>232</sup> to share information and prepare joint EIS's. This way, if a large company wants a loan or other financial assistance, submits a proposal, and gets accepted, it would avoid delay and duplication when later going to the federal agencies for permits or authorizations. This appears to be a rational way to share the information. Another suggestion is that the corporation may contract with individual projects to meet certain environmental specifications as one of its terms of funding. This could alleviate many environmental problems.

NEPA's goals can be recognized in the SFC. Regardless of whether any formal plan is fashioned to share information, the SFC can have access to information from other agencies, and from the projects, and, if used accordingly, input for better decisions will exist. Most important, there is every indication that the SFC can make sound financial as well as environmental decisions by having access to detailed environmental information if it chooses to do so. If this is done, the type of decision making contemplated under NEPA, although not equivalent to an EIS, will be accomplished. Whether or not the SFC chooses to do so is within its discretion.

## V. CONCLUSION

There is clearly a need to alleviate the nation's dependence upon foreign oil. In response to this need, the Congress has established the United States Synthetic Fuels Corporation which will have a significant role in the development of the country's emerging synfuel industry. Structured as an independent federal entity, the SFC offers financial assistance incentives to qualified applicants with promising technologies for synthetic fuel projects. Because there are no presently existing commercial size coal gasification and liquefaction or oil shale plants, many economic, technical, and environmental questions remain unanswered in the industry's development. The need for alternative energy supplies, however, outweighs the potential risks of these uncertainties.

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232. See 40 C.F.R. § 1508.5 (1980). A cooperating agency is any federal agency other than a lead agency. A cooperating agency utilizes its expertise in assisting to compile an EIS. See also 40 C.F.R. § 1501.6 (1980).

Because of the high priority given to the creation of synfuels, the SFC is established free of many of the constraints placed upon other agencies of the federal government. Primarily, it is exempt from the environmental impact statement requirement of the National Environmental Policy Act. NEPA seeks to insure that serious environmental problems will not be ignored in decision-making processes involving major federal actions significantly affecting the quality of the human environment. In light of the exemption, it is important to consider how the SFC will integrate environmental information into its financial decision-making process.

This article has attempted to show that the SFC is not intended to focus extensively upon environmental information when awarding financial assistance. However, because the projects that it funds could be considered "major federal actions" under NEPA absent the exemption, the SFC, though not legally required to do so, should initiate the effort to integrate environmental information into its decision-making process.

NEPA's goals can be recognized in the SFC because there is every indication that the SFC could have access to environmental information if it chooses to do so. Because the corporation is new, it is difficult to assess how environmental information will be handled, but the process should be questioned. In the interest of sound decision making, it is hoped that the SFC will carefully consider environmental information in the growth of this emerging energy industry, but only time will tell.