

Robert C. Satrom*

Interest in developing supplemental sources of petroleum and natural gas, and in finding more efficient processes to utilize these resources, has reached a new plateau in both the public and private sectors of the U.S. economy. Congress has created a new institution—the Synthetic Fuels Corporation—to facilitate the development and financing of demonstration synthetic fuel plants.¹ Energy firms are increasing their research and development activities involving the commercialization of synthetic fuel technology and the increase in efficiency of energy-consuming appliances. In regard to federal regulation of the natural gas industry, the Federal Energy Regulatory Commission (FERC)² continues to certificate jurisdictional pipeline facilities and set rates for natural gas companies in jurisdictional sales.³ Increasingly, concern for maintenance of adequate natural gas supplies has led FERC to take regulatory action involving new technologies in both certification and ratemaking contexts.

In creating the Synthetic Fuels Corporation in 1980, Congress delegated responsibility to develop a comprehensive strategy to achieve a specified national

*Fourth-year JD/MSFS Student, Georgetown University Law Center; B.A., Kent State University, 1976.

¹"Synthetic fuel" refers to a variety of non-nuclear, non-solar energy products which can serve as substitutes for petroleum or natural gas. After an inauspicious beginning in the 1920s, the U.S. synfuel industry has grown in conjunction with increasing Federal involvement and rising concern over import dependence and oil prices. See generally Hardcastle, *Priming the Pump: The Costly Chemistry of Synthetic Fuel*, 2 Science 58, 61 (Jan./Feb. 1981). The Federal Non-Nuclear Energy Research and Development Act of 1974, Pub. L. No. 93-577, 88 Stat. 1878 (1974), authorized the Energy Research and Development Administration to organize government-owned contractor-operated corporations to undertake energy research and development in synthetic fuels technology. Federal financial assistance, in the form of loan guarantees, was later authorized to be administered by the Department of Energy on a case-by-case basis, with the approval of both Houses of Congress needed before a loan guarantee could be granted for any demonstration facility costing in excess of \$50 million. See Pub. L. No. 95-238, 92 Stat. 47, 70 (1978). With this federal encouragement, synthetic fuel technology progressed through the 1970s, but operational experiments to test commercial viability were infrequent.

In the early 1980s, first generation synfuel technologies—including coal gasification and liquefaction, surface oil shale retorting, and production of fuel oils and ethanol from biomass—are considered to be currently or imminently available for commercial use. Stokes, *Synthetic Fuels at the Crossroad*, Tech. Rev., Aug./Sept. 1979, at 25, 29; S. Rep. No. 397, 96th Cong., 1st Sess. 134 (1979). Emphasizing such processes, the U.S. Congress passed the Energy Security Act of 1980, Pub. L. No. 96-294, 94 Stat. 611 (1980) (to be codified at 42 U.S.C. § 8701 *et seq.*), creating a national synthetic fuels production goal of the equivalent of 500,000 barrels of oil per day by 1987 and 2,000,000 barrels per day by 1992. The Act established the Synthetic Fuels Corporation and authorized \$19 billion in financial support for an effort that could ultimately cost as much as \$88 billion. See Contratto, *A Billion Here, A Billion There—A Review and Analysis of Synthetic Fuels Development under Title I of the Energy Security Act*, 1 Energy L. J. 233 (1980).

The Reagan Administration has proposed budget cuts to most synfuels programs as part of its fiscal restraint strategy. However, the Department of Energy has assured the sponsors of at least one major project, the Great Plains coal gasification plant, that a previous commitment for a \$1.8 billion loan guarantee will be honored. Wash. Star, Feb. 21, 1981, at D1. See also The Economist, Feb. 28, 1981, at 27, col. 2.

²The functions of the Federal Power Commission (FPC) were transferred to the Secretary of Energy, or, in the case of ratemaking authority under both the Federal Power Act and the Natural Gas Act, to the FERC within the Department of Energy, as part of the creation of that department. Pub. L. No. 95-91, 91 Stat. 565 (1977) (codified at 42 U.S.C. § 7101 *et seq.*). The FPC and FERC will be referred to interchangeably in this note as "the Commission," unless greater specificity is required.

³A "jurisdictional pipeline" transports natural gas in interstate commerce and is therefore subject to FERC certification. "Jurisdictional sales" refer to interstate sales for resale, which are subject to Commission rate regulation. *Federal Power Commission v. Louisiana Power & Light Co.*, 406 U.S. 621, 623 n.1 (1972).

synfuels production goal.⁴ Coal gasification⁵ is one of the many synfuel processes⁶ which the Corporation is to accommodate with its available financing tools—price guarantees, purchase agreements, loan guarantees, loans, and joint ventures.⁷ In contrast to the promotional authority of the Corporation, the regulatory authority of the Commission in synfuels is limited to its statutory responsibilities in certification and ratemaking affecting jurisdictional companies. Under Section 1(b) of the Natural Gas Act,⁸ the Commission has jurisdiction over the transportation of “natural gas” in interstate commerce and the sale in interstate commerce of “natural gas” for resale for ultimate public consumption,⁹ and to “natural gas companies” engaged in such transportation and sales. Section 2 of the Act defines “natural gas” as either “natural gas unmixed” or “any mixture of natural and artificial gas,” and defines “natural gas company” as a person or corporation “engaged in the transportation of natural gas in interstate commerce, or the sale in interstate commerce of such gas for resale.”¹⁰ Section 7 of the Act provides FERC with authority to issue certificates of public convenience and necessity to natural gas companies who propose to construct or extend facilities to be used in the sale or transportation of natural gas.¹¹ Finally, Section 4 of the Act delegates authority to FERC to regulate all rates and charges relating to jurisdictional transportation or sales of natural gas.¹² Within these statutory parameters, FERC authority in synthetic fuel development is but a sub-issue of the larger question of the Commission’s role in encouraging jurisdictional natural gas companies to contribute to the commercial development of technologies which can be used, if at all, only in wholly non-jurisdictional pursuits.

In analyzing the limits of FERC jurisdiction in promoting technological development, the Court of Appeals for the District of Columbia has been confronted with Commission action in two significantly different situations: a proceeding granting certification under Section 7 of the Natural Gas Act to admit-

⁴Energy Security Act of 1980, Pub. L. No. 96-294, §§ 125-126, 94 Stat. 611(1980). See note 1 *supra*.

⁵There are two basic alternatives for converting coal into synthetic gas. Low-Btu coal gas, for which first generation technological processes have been available for over thirty years, cannot be economically pumped through natural gas pipelines. This alternative is thus limited in application to industrial plants and electric powerplants, where the coal gas can be burned near the place of manufacture. Herman, *Energy Futures* 402 (1977). The second procedure uses the Lurgi process to convert lignite coal into a purified low-Btu gas, and the Methanization process to convert that gas into high-Btu pipeline quality gas to augment to supply of natural gas. Proponents of the Lurgi-Methanization process estimate that synthetic gas would cost approximately \$6-\$8 per million Btu's by the time of delivery in the mid-1980s. Although this rate is more than twice that of domestically produced natural gas and is equivalent in terms of energy to oil at \$40 per barrel, the gas from such a project could be quite competitive with other costly alternatives, such as Alaskan natural gas. Hardcastle, *supra* note 1, at 62. Cost projections may be inaccurate since they fail to account for the demand effect of the planned deregulation of the price of new gas in 1985. Accordingly, several commentators see no economic justification yet for the deployment of large-scale commercial coal gasification projects or any other non-essential energy project. See Allain, *Environmental Implications of a Synthetic Fuel Industry*, 4 Harv. Envir. L. Rev. 391, 412 (1980); Ford Foundation, *Energy: The Next Twenty Years* 53, 579 (1979).

⁶“Synthetic fuel” and “synthetic fuel project” are defined to include a variety of substitute fuels and processes. See Energy Security Act of 1980, Pub. L. No. 96-294, §§ 305(a)(1)(A) and 308(b)(1)(A)-(C), 94 Stat. 619, 631 (1980).

⁷*Id.*, § 305(b)(1), 94 Stat. 619.

⁸15 U.S.C. § 717(b) (1976).

⁹See *Phillips Petroleum Co. v. Wisconsin*, 347 U.S. 672 (1954) (*held*, FPC has jurisdiction over wellhead producers selling gas to pipeline companies for resale in interstate commerce).

¹⁰15 U.S.C. § 717(a) (1976).

¹¹15 U.S.C. § 717f(c)(1)(A) (1976).

¹²Section 4(a) of the Natural Gas Act, 15 U.S.C. § 717c(a) (1976), provides that “[a]ll rates and charges made, demanded, or received . . . shall be just and reasonable, and any such rate or charge that is not just and reasonable is declared to be unlawful.” Section 5, 15 U.S.C. § 717d (1976), authorizes the Commission to review existing rates and set them at just and reasonable levels.

tedly non-jurisdictional coal gasification facilities;¹³ and a Section 4 ratemaking proceeding allowing jurisdictional natural gas companies to recover expenditures for activities which, in part, involve technologies related only tangentially, if at all, to the jurisdictional supply of natural gas.¹⁴ The Section 7 case has been set aside on review in the federal courts, while the Section 4 case is pending decision.

Defining the jurisdiction limits between FERC and the Synthetic Fuels Corporation, the United States Court of Appeals for the District of Columbia Circuit ruled in *Office of Consumers' Counsel v. Federal Energy Regulatory Commission*¹⁵ that the Commission could not promote the development of coal gasification demonstration plants by means of certification. Congress delegated authority to the Commission to certificate and set tariffs for the transport and sale of synthetic gas only after such gas is actually commingled with jurisdictional natural gas. While the basic jurisdictional holding of *Consumers' Counsel* is solidly based in the legislative history of federal statutes governing energy development, the D.C. Circuit included significant *dicta* in its decision which could have serious ramifications for experimental natural gas research and development projects in general, and consumer-based financing packages in particular. The court's admonitions, however, should not be read as reducing FERC's broad discretion in defining reasonable research expenditures for purposes of ratemaking under Section 4 of the Natural Gas Act.

I. FERC JURISDICTION IN THE PRODUCTION OF SYNFUELS

The D.C. Circuit held in *Consumers' Counsel* that FERC has no jurisdiction over any aspect of synthetic gas development prior to the commingling of such "artificial gas" with natural gas.¹⁶ The Commission, contrary to the recommendation of its staff, and the decision of an Administrative Law Judge,¹⁷ granted a certificate of public convenience and necessity to the sponsors of the Great Plains coal gasification project to facilitate the construction and operation of the first commercial-sized coal gasification plant.¹⁸ The facility, to be located in North Dakota, would utilize Lurgi gasifiers to produce an average of 125,000 Mcf per day of high-Btu, pipeline quality gas from lignite reserves contiguous to the plant site.¹⁹ In an attempt to acquire FERC jurisdiction over the private sales for resale and the transportation of the coal gas, the Great Plains project sponsors designed their tariff to provide for the "sale" of the gas at a physical location beyond the point where the coal gas was to be commingled with natural gas. The Commission, in granting certification, stated that its regulatory authority over the transportation and sale of synthetic gas subsequent to creation and mixture with natu-

¹³*Office of Consumers' Counsel v. Federal Energy Regulatory Commission*, _____ F.2d _____, No. 80-1306, slip op. (D.C. Cir. Dec. 8, 1980) [hereinafter "*Consumers' Counsel*"]. See 1 Energy L. J. 367, 369-72 (1980).

¹⁴*Public Utilities Commission of the State of Colorado v. Federal Energy Regulatory Commission*, D.C. Cir. No. 80-1117 (appeal docketed Jan. 25, 1980) [hereinafter "*GRI*"]. See 1 Energy L. J. 367, 367-69, 373-74 (1980).

¹⁵*Consumers' Counsel*, *supra* note 13, slip op. at 27-33.

¹⁶*Id.* at 31.

¹⁷*Great Plains Gasification Associates, et al.*, FERC Opinion No. 69 (Nov. 21, 1979) [hereinafter "*Opinion No. 69*"], *reh. denied*, Opinion No. 69-A (Jan. 21, 1980) [hereinafter "*Opinion No. 69-A*"], *modified subject to appeal*, Opinion No. 69-B (June 27, 1980). See Zipp, *The Impact of the Great Plains Coal Gasification Decision on a Coal Gas Industry*, 105 Pub. Util. Fort. 30 (1980); Grenier and Clark, *The Relationship between DOE and FERC: Innovative Government or Inevitable Headache?*, 1 Energy L. J. 325, 359-64 (1980).

¹⁸*Consumers' Counsel*, *supra* note 13, slip op. at 5-6. One Mcf is 1,000 cubic feet of gas.

ral gas gave it "corollary authority" to use its certification powers for the purpose of arranging financing for, and to some extent regulating the construction of, the commercial-sized coal gasification plant producing such synthetic gas.²⁰

The Commission's action was a significant departure from past actions taken under more limited interpretations of federal regulatory jurisdiction over the natural gas industry. In Opinion No. 663,²¹ the FPC had rejected an application for certification of the proposed Transwestern (WESCO) coal gasification plant on the basis that the sponsors were not and would not become "natural gas companies."²² In *Henry v. Federal Power Commission*,²³ the D.C. Circuit upheld the Commission's dismissal of those portions of the proposal pertaining to unmixed coal gas. A sponsor of the WESCO project argued in *Henry*, *inter alia*, that the FPC's jurisdiction extended to the production, sale, and transportation of coal gas *prior* to its mixture with natural gas in a mainline interstate system.²⁴ Basing its decision on (1) the Congressional intent not to extend Commission jurisdiction to unmixed artificial gas,²⁵ and (2) the finding that regulation of coal gas would constitute a true extension of jurisdiction rather than merely the filling of the interstices of the Act,²⁶ the court in *Henry* affirmed the FPC's disclaimer of jurisdiction.²⁷ The Court of Appeals mentioned in *dicta*, however, that the "corollary authority" of the Commission, derived from the requirement that the Commission consider "all factors bearing on the public interest" in Section 7 proceedings, would allow the Commission to condition certificates involving mixtures of natural gas and coal gas so as to protect the natural gas public from the impact of disproportionate prices.²⁸ The Commission's corollary authority gave it "effective indirect control over concededly non-jurisdictional transactions and facilities,"²⁹ incidental to its jurisdiction over the interstate transportation and sale for resale of

²⁰Opinion No. 69-A, *supra* note 18, at 10.

²¹Opinion No. 663, 50 F.P.C. 651 (1970).

²²*Id.* at 667.

²³*Henry v. Federal Power Commission*, 513 F.2d 395, 405 (D.C. Cir. 1975). To gain the certainty of federally regulated tariffs, a sponsor of the Transwestern (WESCO) coal gasification project had asserted that the FPC's jurisdiction extended to production, sale and transportation of synthetic coal gas. *Id.* at 398. The FPC's dismissal of all portions of the WESCO applications pertaining to unmixed coal gas was affirmed in *Henry*. The sponsors proceeded with a certification application for the facilities to transport mixed gas. *See* note 27 *infra*.

²⁴*Henry v. Federal Power Commission*, 513 F.2d 395, 398 (D.C. Cir. 1975).

²⁵*Id.* at 399-402. *See generally* 1 F.V. Roach & W.E. Gallagher, A Compilation of the Legislative History of the Natural Gas Act (1968).

²⁶*Henry v. Federal Power Commission*, 513 F.2d 395, 402-403 (D.C. Cir. 1975).

²⁷*Id.* at 401. After the FPC's dismissal, the project sponsor in question, Transwestern Pipeline Co., modified its application so that it not take title to synthetic gas, but merely transport the coal gas after mixture with natural gas for sale directly to its principal customers. *Id.* at 398 n.3. The FPC later granted certification to the transportation and sale of coal gas under this amended proposal in Opinion No. 728, Transwestern Coal Gasification Co., *et al.*, 53 F.P.C. 1287 (1975) [hereinafter "Order No. 728"], *mod. on reh.*, Opinion No. 728-A, 54 F.P.C. 2418 (1975).

The WESCO project was never completed, ostensibly due to the financing and credit terms imposed by the FPC. *See* Wall St. J., Mar. 21, 1979, at 4, col. 1. One participant in the project, Transwestern, wrote off some \$12.7 million in associated costs in 1977. *See* Transwestern Pipeline Co. v. Federal Energy Regulatory Commission, 626 F.2d 1266, 1267 (D.C. Cir. 1980).

²⁸*Henry v. Federal Power Commission*, 513 F.2d 395, 403 (D.C. Cir. 1975).

²⁹*Id.* at 401, citing Panhandle Eastern Pipe Line Co. v. Federal Power Commission, 359 F.2d 675, 683 (8th Cir. 1966) (*held*, FPC's jurisdiction extended to certificates for the transportation of natural gas bearing helium to a helium extraction plant, although involving a non-jurisdictional sale to a non-jurisdictional facility).

mixed synthetic and natural gas.³⁰ The limits of this transactional theory of jurisdiction were left for future delineation.³¹

In 1979, FERC exercised its corollary authority to the extent necessary to grant a certificate of public convenience and necessity to the Great Plains coal gasification project.³² The Commission found that the project, despite its extraordinary and unprecedented financing scheme, was in the public interest.³³ On review, the D.C. Circuit in *Consumers' Counsel* reversed and remanded. Judge Wald held that:

FERC's authority to consider all factors bearing on the public interest when issuing certificated means authority to look into those factors which reasonably relate to the purposes for which FERC was given certification authority. It does not imply authority to issue orders regarding any circumstances in which FERC's regulatory tools might be useful.³⁴

The Court of Appeals held that FERC had neither direct³⁵ nor corollary³⁶ jurisdiction over the construction of a facility intended for a non-jurisdictional purpose.³⁷ The Court further held that the Commission could not use its research and development ratemaking regulations³⁸ as a hurdle over the basic jurisdictional limitation set in *Henry*.³⁹ Thus, the D.C. Circuit proscribed the Commission from

³⁰*Henry v. Federal Power Commission*, 513 F.2d 395, 403 (D.C. Cir. 1975). *Cf.* *Federal Power Commission v. Transcontinental Gas Pipe Line Corp.*, 365 U.S. 1, 8 (1961) (FPC's Section 7 jurisdiction over pipeline facilities held to allow consideration of end use and price of gas for direct sale to industrial consumers despite FPC's lack of jurisdiction over sales and prices of such gas).

³¹The D.C. Circuit noted:

... We do not have before us any concrete issue as to whether the FPC might contemplate going too far, or not far enough, in considering such § 7 applications [concerning mixtures of natural gas and synthetic coal gas]. ... The FPC's broad power to condition certificates provides mechanisms that should be sufficient to enable it to protect the natural gas public from the impact of disproportionate prices. If the Commission does not feel that they will be adequate in a certain case, it can refuse to certify a proposal dependent on a mixture of synthetic with natural gas on the ground that it is not in the public interest, that it in effect contaminates the dedication of natural gas in interstate commerce to service of the public interest.

Henry v. Federal Power Commission, 513 F.2d 395, 405 (D.C. Cir. 1975) (footnotes omitted). Section 7 certificates authorizing the direct sales and transportation of WESCO mixed synthetic coal gas were issued by the FPC in Order No. 728, *supra* note 27. The FPC's approval was based on the supplemental nature of the coal gas as an incremental supply project, not upon any research and development criteria. The order was not subjected to judicial review.

³²Order No. 69, *supra* note 18.

³³*Id.* at 58 ("... the public convenience and necessity requires the commercial demonstration of coal gasification").

³⁴*Consumers' Counsel*, *supra* note 13, slip op. at 29. *Cf.* *Chemehuevi Tribe of Indians v. Federal Power Commission*, 420 U.S. 395 (1975) (holding that technological developments in thermal energy production do not in and of themselves justify an expansion of the jurisdiction of a Federal agency beyond the scope described by Congress in organic legislation).

³⁵*Consumers' Counsel*, *supra* note 13, slip op. at 27. *Cf.* *Public Service Commission of New York v. Federal Power Commission*, 543 F.2d 392 (D.C. Cir. 1976) (no jurisdiction over sales of unmixed synthetic gas).

³⁶*Consumers' Counsel*, *supra* note 13, slip op. at 31.

³⁷"The hypothetical sale of commingled gas is remote in time, place, and possibly even probability of occurrence, from the focus of [Order No. 69]." *Id.* at 22. The uncertainty in the Great Plains proposal involved the commercialization of a proven synfuel technology.

³⁸See notes 43-44 *infra* and accompanying text.

³⁹The court specified that:

... FERC may not overstep the limits of its jurisdiction by claiming that [the research and development regulations] can serve as authority for charging ratepayers for the construction of non-jurisdictional facilities *before* those facilities participate in activities properly regulated by the Commission. Nor may FERC use its Section 7 authority to order a financing package such as the one involved here, which imposes financing surcharges and debt guarantees upon natural gas pipeline customers for the construction of facilities which, it is hoped, will some day in the future produce synthetic gas.

Consumers' Counsel, *supra* note 2, at 31-32. In a quite proper but somewhat inconsistent part of Order No. 69, FERC denied certification for a proposed facility to connect the Great Plains synthetic gas plant to a natural gas pipeline system. Opinion No. 69, *supra* note 18, at 102-103, 113.

approving the project financing and tariff provisions for construction of the Great Plains coal gasification plant because FERC's authority was limited to facilities for the transport and sale of coal gas *after* its mixture with natural gas.⁴⁰

What *Consumers' Counsel* leaves unanswered is: (1) the proper treatment of research and development expenditures, including synfuel technology commercialization, in natural gas ratemaking; and (2) the legality of ratepayer financing packages proposed in other natural gas projects requiring large amounts of capital.

II. NATURAL GAS RATEMAKING AND RD&D EXPENDITURES

The traditional risk venture by a public utility, such as the construction of a compressor station by natural gas pipeline, is not included in the rate base until the project is "used and useful" in providing service to its customers.⁴¹ The "used and useful" standard of determining rate base items, which was early adopted by the FPC, requires that current ratepayers should bear only the legitimate costs of providing services to them. The Commission generally has not departed from the used and useful standard.

Research and development (R&D) expenditures are a major exception to the established used and useful ratemaking principle. Whereas the traditional risk venture is undertaken for a specific class of customers at a predictable cost, with a measurable degree of risk and a calculable return on capital committed, R&D expenditures are less predictable by nature and return on investment is therefore less certain. Once an investment project has been classified as properly within the definition of R&D, related expenses represent part of the cost of service. As such, the expenses may be deferred and amortized over a given period, and the utility company is entitled to earn a return on the unamortized portion of the project cost. The guaranteeing of a return of both the capital and the cost of capital in the R&D venture means, in essence, that the customer purchases the R&D and assumes the risk of the project.⁴²

R&D activities by natural gas companies have been given increasing attention by federal regulators in the last decades. In 1966, the FPC allowed expenditures for R&D to be included in the companies' cost of service, either as components of the rate base on which a return was earned, or as expenses to be passed directly through to pipeline customers in rates.⁴³ The Commission amended its regula-

⁴⁰In subsequent filings with the FERC, the Great Plains sponsors have revised the financing terms significantly. After a further attempt to have the Great Plains coal gasification plant considered a "natural gas company," the sponsors amended their filings to pass costs through to customers by means of existing purchase gas adjustment (PGA) clauses.

⁴¹See, e.g., *City of Detroit v. Panhandle Eastern Pipe Line Co.*, 3 F.P.C. 273, 281, (1942).

⁴²Similar treatment is given construction costs under certain circumstances. Under the normal "allowance for funds used during construction," or AFUDC, the capitalized amount of interest and an equity return is included in the rate base. The AFUDC principle prevents a return from being earned on the capitalized construction costs until a plant is used and useful. *Smyth v. Ames*, 169 U.S. 466 (1898); *Mississippi River Fuel Corp.*, 4 F.P.C. 340 (1945). A departure from the AFUDC used and useful approach is the "construction work in progress," or CWIP, approach. CWIP may be included in the rate base to allow a utility to earn a return on construction costs before a plant is placed in service. This shifts the costs from future to present customers, in order to finance prudent investments in plants involving long construction periods and sponsors with insufficient resources to fund construction. See 18 C.F.R. § 201, Definition 107 (1980).

⁴³Order No. 322, Annual Reporting of Research and Development Activities by Electric Utilities and Natural Gas Companies, Docket No. R-256, 35 F.P.C. 820 (1966). The Commission later clarified the treatment—rate-covered expense or return-covered rate base item—to be given various types of R&D costs. See Order No. 408, Accounting Treatment for Expenditures for Research and Development, Docket No. R-381, 44 F.P.C. 639 (1970).

tions in 1973 to permit advance approval for rate treatment of R&D expenses and to permit tracking of R&D items in the rate base in order to give natural gas companies the benefit of a current return on such items.⁴⁴ In 1977, the Commission further clarified the definition of R&D by interpreting it to include expenditures for commercial-scale demonstration facilities using technology proven to be

⁴⁴Order No. 483, Research and Development, Accounting and Reporting, Docket No. R-462, 49 F.P.C. 1045 (1973). Prior to 1973, the definition of "R&D" required an expenditure to "represent research and development in the experimental or laboratory sense." Order No. 322, *supra* note 14, 35 F.P.C. 820, 823-24. In 1973, the Commission broadened the definition by deleting that requirement. Order No. 483, *supra*, 49 F.P.C. at 1059-60. See *Transwestern Pipeline Company v. Federal Energy Regulatory Commission*, 626 F.2d 1266, 1268 (5th Cir. 1980) (Commission's denial of R&D treatment for coal gasification expenses pursuant to Order No. 483 affirmed).

⁴⁵Order No. 566, Research, Development and Demonstration: Accounting; Advance Approval of Rate Treatment, Docket No. RM76-17, 13 Fed. Pow. Serv. 5-542 (June 3, 1977) [hereinafter "Order No. 566"].

⁴⁶18 C.F.R. § 154.38(d)(5)(v) provides as follows:

(v) A natural gas pipeline company may submit a research, development and demonstration cost and adjustment provision to flow through changes in its expenditures for research, development and demonstration. Changes permitted hereunder include both expenditures chargeable to operations as well as rate base treatment of the balances in account 188 as hereinafter defined. No RD&D adjustment provision shall become effective until authorization by the Commission. No request for RD&D adjustment provision will be considered by the Commission unless the proposed clause indicates the following terms and conditions.

(a) The RD&D expenditures adjustment shall be reflected in the company's rates only when it amounts to at least one-tenth of 1 mill (\$0.0001) per thousand cubic feet of annual jurisdictional sales. Rate changes shall be applied to the company's two-part rates and to the volumetric rates of a pipeline company's one-part rates.

(b) Rate changes shall be computed and filed not more frequently than semi-annually. Rate changes by companies having Commission approved PGA clauses should be computed and filed to the extent practicable to coincide with the proposed effective date of a PGA rate change.

(c) Except in the case of expenditure approval pursuant to § 154.38(d)(5)(ii) RD&D expenditures chargeable to operations which may be tracked and reflected in rates shall be the amount which actual RD&D expenditures during the 12-month period ending 3 months prior to a proposed rate adjustment exceed or are less than (1) the amount allowed in the company's last rate proceeding or the average of 3 years RD&D expenditures if such rate adjustment is an initial filing under the subsection; or (2) the actual RD&D expenditures in the company's last prior rate adjustment under this section.

(d) RD&D expenditures in account 188 which are eligible to receive rate base treatment and which may be tracked and reflected in rates shall be the amount which the actual balances in such account during the 12-month period ending 3 months prior to the proposed rate adjustment exceed or are less than the balances in such account as of the date of this regulation, if an initial filing under this section, or the balances in account 188 included in the company's last prior rate adjustment under this subsection. For the purpose of determining the balance which may be tracked the company shall reduce the balance in account 188 by all moneys recorded in account 495 related to its RD&D expenditures and shall increase or reduce such account balance, as appropriate, by the applicable accumulated deferred income taxes. The rate of return used by the company to determine the rate effect of the rate base treatment of the balance in account 188 shall be the rate of return last allowed by the Commission during the previous 3 year period. If there has been no such rate of return allowed during the previous 3-year period, then, in the absence of evidence submitted to the contrary, the return utilized shall be the present interest rate used for computing refunds as specified in § 154.67.

The definition of RD&D is found in Definition 28.B of the Commission's Uniform System of Accounts, 18 C.F.R. § 201 (hereinafter "Definition 28.B"):

B. "Research, Development, and Demonstration" (RD&D) means expenditures incurred by natural gas companies either directly or through another person or organization (such as research institute, industry association, foundation, university, engineering company, or similar contractor) in pursuing research, development, and demonstration activities including experiment, design, installation, construction, or operation. This definition includes expenditures for the implementation or development of new and/or existing concepts until technically feasible and commercially feasible operations are verified. Such research, development, and demonstration costs should be reasonably related to the existing or future utility business, broadly defined, of the public utility or licensee or in the environment in which it operates or expects to operate. The term includes, but is not limited to: All such costs incidental to the design, development or implementation of an experimental facility, a plant process, a product, a formula, an invention, a system or similar items, and the improvement of already existing items of a like nature; amounts expended in connection with the proposed development and/or proposed delivery of substitute or synthetic gas supplies (alternate fuel source for example, an experimental coal gasification plant or an experimental plant synthetically producing gas from liquid hydrocarbons); and the costs of obtaining its own patent, such as attorney's fees expended in making and perfecting a patent application. The term includes preliminary investigations and detailed planning of specific projects for securing for customers non-conventional pipeline gas supplies that rely on technology that has not been verified previously to be feasible. The term does not include expenditures for efficiency surveys; studies or management, management techniques and organization; consumer surveys, advertising, promotions, or items of a like nature.

technically feasible, but not yet proven commercially feasible.⁴⁵ This expanded the definition of recoverable expenditures to include "research, development and demonstration" (RD&D) activities, which remain recoverable under current FERC regulations.⁴⁶ Expenditures qualify if they rely on either (1) technology that has not been previously verified to be feasible⁴⁷ or (2) implementation or development of new and/or existing concepts until technically feasible and economically feasible operations are verified.⁴⁸ This definition thus encompasses construction of commercial-sized facilities that will not only demonstrate the technology involved, but its successful commercial viability as a future source of supply. Qualified projects specifically include full-scale demonstration facilities and experimental coal gasification plants.⁴⁹ The 1977 clarification, which has been limited to prospective effect,⁵⁰ also expanded the definition of R&D to include preliminary investigations and detailed planning for demonstration projects.⁵¹ Nevertheless, efficiency surveys, management studies, consumer surveys, advertising and promotion are excluded from allowable RD&D.⁵²

Whether an individual project does, in fact, constitute RD&D eligible for special rate treatment is a question determined by FERC on a case-by-case basis.⁵³ To qualify for special rate treatment, RD&D cost need only be "reasonably related" to the existing or future utility business.⁵⁴ FERC, however, does require that the project in question be well-conceived and demonstrate a reasonable chance of benefiting the ratepayers,⁵⁵ and that essentially all of the benefits from successful projects flow through to the customers.⁵⁶ These restrictions insure that the ratepayers receive the benefit of research for which they pay, and that they pay only for risk ventures that satisfy the definition of RD&D.

In *Consumers' Counsel*, the D.C. Circuit held that FERC's jurisdiction in the area of RD&D is confined:

Nothing in this holding denies FERC any authority it may have to consider the costs of production of synthetic gas in the course of considering jurisdictional sales rate filings and petitions under Section 4 of the Natural Gas Act, 15 U.S.C. § 717c, or to give advance notification that it will do so pursuant to its Order No. 566. However, FERC may not

⁴⁵Order No. 566, *supra* note 45, at 38.

⁴⁶*Id.* at 37.

⁴⁷*Id.* at 1, 37-38.

⁴⁸Northern Natural Gas Co., FERC Opinion No. 14 (May 10, 1978).

⁴⁹Pursuant to Order No. 566, FERC will judge RD&D projects or progress by evidence of the following:

1. That the RD&D objectives of the company or research organization have been clearly established.
2. That the plan evolves from these RD&D objectives and adequately utilizes the viewpoints of scientific, engineering, industry, economic, consumers, and environmental interests.
3. That an effective mechanism exists and is used for coordinating this research and development plan with other relevant efforts of national scope.
4. That the project or program is well-conceived and has a reasonable chance of benefiting the ratepayers in a reasonable period of time, having due regard for the basic, exploratory, or applied nature of each submitted RD&D project.
5. That whatever achievements may result, including the knowledge gained or technology developed from the RD&D effort, if any, will accrue to the benefit of the sponsoring jurisdictional company(s) and its/their customers.

Order No. 566, *supra* note 45, at 31-32; Zipp, *supra* note 18, at 32.

⁵²See Definition 28.B, *supra* note 46.

⁵³See Columbia Gas Transmission Corp., FPC Docket No. RP75-95 (Aug. 18, 1976).

⁵⁴See Definition 28.B, *supra* note 46.

⁵⁵Order No. 566, *supra* note 45, at 30. See also Michigan-Wisconsin Pipe Line Co., 51 F.P.C. 2408, 2411 (1974).

⁵⁶Order No. 566, *supra*, note 45, at 35. The Commission has advised that where propriety constraints prohibit this disposition of the benefits from a R&D project, the utility involved should neither fund the project nor seek rate base approval. *Id.*

overstep the limits of its jurisdiction by claiming that Order No. 566—or any cases purportedly decided under it—can serve as authority for charging ratepayers for the construction of non-jurisdictional facilities before those facilities participate in activities properly regulated by the Commission.⁵⁷

This holding would bar the application of FERC's RD&D regulations as to any expenditures related to coal gasification in particular or synfuels production in general. This could be interpreted as reimposing a "used and useful" timing requirement on all activities arguably beyond FERC jurisdiction. The court explained the nature of this limitation as follows:

... [T]here may be situations where the Commission will have discretion to permit not only advance assurance of rate treatment, but also the charging to current ratepayers of expenditures incurred by a jurisdictional company on its RD&D experiment even before the experiment bears fruit, so long as FERC's jurisdiction to include the costs of the experiment does not depend solely on the contingency that the experiment bears fruit and contributes to the flow of mixed gas, as is the case with the Great Plains project. For example, expenditures for a RD&D project directly concerning the transportation, transfer, or storage of natural or commingled gas, or related to increasing the supply of unmixed natural gas, might in appropriate circumstances be recoverable from current ratepayers, since such a project would be jurisdictional from its very inception.⁵⁸

This latter *dicta* would seem to exclude all synfuel production expenses from proper inclusion in rates, regardless of any relation to jurisdictional activities.

In *Public Utilities Commission of the State of Colorado v. Federal Energy Regulatory Commission*⁵⁹ (*GRI*), a case now on review by the D.C. Circuit, the limits of FERC's jurisdiction in promoting RD&D "jurisdictional from its very inception" will be explored. The case involves review of FERC's approval of Gas Research Institute's third annual application for its proposed RD&D program and budget (\$55.4 million), to be funded through a charge to its members of \$0.0048 per Mcf.⁶⁰ As a coordinating agency, GRI undertakes RD&D in a variety of programs, some clearly related to jurisdictional activities (*e.g.*, gas transport technology), some related to synthetic gas production (*e.g.*, coal gasification), and some in other areas (*e.g.*, appliance and power plant efficiency).⁶¹ The petitioners in *GRI* argued, *inter alia*,⁶² that if the organization's funding unit is to be charged to its natural gas company members, the costs of jurisdictional RD&D activities must be segregated from those of other RD&D projects, the latter not properly included in rates or advance assurances for rate treatment under FERC's Section 4 authority.⁶³

⁵⁷Consumer's Counsel, *supra* note 13, slip op. at 31 (emphasis in original, footnote omitted).

⁵⁸*Id.* at 33 n.32 (emphasis in original).

⁵⁹*GRI*, *supra* note 14.

⁶⁰FERC Opinion No. 64, Docket No. RP79-75 (Oct. 2, 1979). Gas Research Institute is a planning and managing non-profit corporation which contracts out research and development projects on behalf of its 190 regulated members, several of which are jurisdictional pipelines. It obtains funds through a "funding unit" formula, which, under the 1980 charge, costs the average gas-consuming household about 60¢ per year. Brief of Respondent, Federal Energy Regulatory Commission, D.C. Cir. No. 80-1117, at 4. The 1978 and 1979 GRI R&D program and budget approvals were not petitioned for review. See FERC Opinion No. 11, Gas Research Institute, Docket No. RM77-14, 14 Fed. Pow. Serv. 5-479 (Mar. 22, 1978) (\$9.5 million), *reh. denied*, Opinion No. 11-A, 14 Fed. Pow. Serv. 5-983 (May 22, 1978); FERC Opinion No. 30, Docket No. RP78-6 (Sept. 21, 1978) (\$39.7 million).

⁶¹Brief of Petitioner, Public Utility Commission of the State of Colorado, D.C. Cir. No. 80-1117, at 27-36. GRI included oil shale gasification and land-based and water-based biomass gasification projects in its 1980 RD&D budget.

⁶²The State of Colorado also argued that GRI itself was not a natural gas company" and could not therefore be brought under FERC's jurisdiction by the regulations defining "RD&D organization," 18 C.F.R. § 154.38(d)(5)(ii). See Brief of Petitioner, Public Utility Commission of the State of Colorado, D.C. Cir. No. 80-1117, at 11-26; Supplemental Brief of Petitioner, Public Utilities Commission of the State of Colorado, D.C. Cir. No. 1117, at 2-5.

⁶³Brief of Petitioner, Public Utility Commission of the State of Colorado, D.C. Cir. No. 1117, at 31-32.

The Court of Appeals is called upon in *GRI* to set the limits of FERC promotional authority in Section 4 ratemaking in regard to synfuels production and energy conservation.

In the absence of any expansion of FERC jurisdiction by Congress, at least three interpretations of the types of RD&D expenses properly subject to the Commission's ratemaking authority are possible:

1. Expenses incurred in activities which *directly* relate to transportation and sale of natural gas or commingled synthetic gas and natural gas, and expenses incurred in activities which relate *directly* to the supply of natural gas.
2. The above expenses, *plus* those incurred in activities which relate *indirectly* to the transportation and sale of natural gas or commingled synthetic gas and natural gas, and those incurred in activities which relate *indirectly* to the production of natural gas.
3. All of the above expenses, *plus* expenses incurred in activities which relate directly to the ultimate *consumption* of natural gas or commingled synthetic gas and natural gas.

The first interpretation follows directly from the *dicta* in *Consumers' Counsel* that expenses only can qualify for ratemaking *after* the project actually contributes to the flow of natural gas, thus eliminating advance assurances for synthetic gas production projects and for mixed gas transportation systems in which commingling of synthetic and natural gas has not yet occurred.⁶⁴ The second interpretation would include the costs of producing and transporting unmixed synthetic gas if the Commission finds the costs "just and reasonable" and "reasonably related" to jurisdictional service.⁶⁵ The third interpretation, the broadest, would include not only all synthetic fuel expenses but also expenses related to maintaining gas supplies through consumption-related activities.

III. PROJECT FINANCING OF EXPERIMENTAL FACILITIES

In *Consumers' Counsel*, the D.C. Circuit upheld FERC's contention that RD&D ratemaking regulations are relevant not only in ratemaking under Section 4 of the Natural Gas Act, but also in determining whether a proposed RD&D venture satisfies the public convenience and necessity standard in Section 7 certifications.⁶⁶ Furthermore, the Court of Appeals did not reach the issue of whether the Great Plains financing package, which included a consumer surcharge during

⁶⁴See note 58 *supra* and accompanying text.

⁶⁵In *Michigan-Wisconsin Pipeline Co.*, Docket No. RP73-102, 51 F.P.C. 2408 (1974), the Commission stated:

Our lack of jurisdiction over coal gasification facilities does not, standing alone, prevent this Commission from approving expenditures related to such projects if this Commission believes such expenditures will yield substantial benefits to the gas consumer within a reasonable period of time.

51 F.P.C. at 2411. *Cf. Tennessee Gas Pipeline Co. v. Federal Energy Regulatory Commission*, 606 F.2d 1094, 1123 (D.C. Cir. 1979), *cert. denied*, 445 U.S. 920 (1980). The Commission has established a consistent practice of permitting recovery of costs associated with synthetic gas *production*, provided that the synthetic gas in question would be commingled with the jurisdictional gas supply and that the project was otherwise in keeping with the protection of the natural gas consumer. *See, e.g., Algonquin SNG, Inc.*, Opinion No. 637, 48 F.P.C. 1216 (1972); *Tecon Gasification Co., et al.*, Docket Nos. CP72-100, *et al.*, 51 F.P.C. 836, 848 (1974); *Natural Gas Pipeline Company of America*, Docket No. CP75-147, 9 Fed. Pow. Serv. 5-568 (May 24, 1976); Opinion No. 728, *Transwestern Coal Gasification Co., et al.*, Docket No. CP73-211, 53 F.P.C. 1287 (1975), *mod. on reh.*, Opinion No. 728-A, 54 F.P.C. 2418 (1975). Costs of synthetic gas activities should not be included in rates by the Commission if the level of such activities is unreasonably high. *See, e.g., Phillips Petroleum Co.*, 24 F.P.C. 537, 562-65 (1960), *reh. denied*, 24 F.P.C. 1008 (1960), *aff'd sub nom. Wisconsin v. Federal Power Commission*, 303 F.2d 380 (1961), *aff'd*, 373 U.S. 294 (1963).

⁶⁶*Consumers' Counsel*, *supra* note 13, at 32-33 n.32. ALJ Nimit had previously found the language of Order No. 566, a ratemaking order, irrelevant to the question of whether a project is in the public convenience and necessity under Section 7(c)-(e) of the Natural Gas Act. *Great Plains Gasification Associates, et al.*, FERC Docket No. CP78-391 (Initial Decision, June 6, 1979), at 26-27.

the construction phase of the project, was in the public interest. Once again, however, the Court included *dicta* generally disfavoring the charging of ratepayers for experimental projects. Thus, *Consumers' Counsel* may be important precedent in future Section 7 certification proceedings, at least as it relates to high-risk RD&D projects with financing plans that place extraordinary burdens on existing natural gas customers.

To highlight the unprecedented nature of the Great Plains project financing proposal, it is necessary to review the elements of financing normal plant facilities. Generally, members of the Federally regulated natural gas pipeline industry finance interstate gas transportation systems through balance sheet financing methods. The resources of the natural gas industry, however, are relatively small in comparison to the costs of projects such as coal gasification facilities (with capital costs of plant and associated lignite mine reaching approximately \$1.2 billion⁶⁷) and the Alaskan natural gas pipeline (with estimated cost of \$6.0-\$8.6 billion⁶⁸). It would be quite ambitious for a group of companies within the industry to undertake the financing of such projects based on conventional balance sheet financing techniques. Accordingly, in projects such as coal gasification, sponsors have proposed that capital be raised and secured by means of "project financing."⁶⁹ In this type of financing, a new enterprise or project entity is created which, in and of itself, generates sufficient revenues to pay its operating costs, interest and principal on its debt, plus a return on, and ultimately, a return of equity to its investors. Raising the debt portion of proposed project financing has often been difficult for sponsoring companies, despite provisions allowing them to earn a return on equity during the construction period through charges to consumers in rates.

To enable projects to attract financing and additional sponsors, FERC has in certain circumstances recommended some form of return on investment during construction through advance assurance of the inclusion of certain charges in rates.⁷⁰ Since synfuel projects require large amounts of capital, sponsors or projects such as coal gasification plants have sought to transfer risk to the customer. Initially, the FPC was reluctant to allow cost of service tariffs in connection with supplemental gas supply programs. In *Tecon Gasification Co.*,⁷¹ for example, the FPC rejected a proposed ratepayer-based financing plan for construction of a naphtha feedstock gasification facility and imposed a fixed rate tariff. Shortly after the *Tecon* decision, however, the Commission approved a project financing package for the first proposed major coal gasification plant, in the *Transwestern*

⁶⁷*Consumers' Counsel*, *supra* note 13, at 6 n.4. The \$1.2 billion estimate assumed that the pre-operational costs of capital would be charged to ratepayers on a current basis. Without this surcharge, the capital cost estimate rose to over \$1.5 billion. *Id.*

⁶⁸Financing an Alaskan Natural Gas Transportation System, Report to the President by Participating Executive Agencies, July 1, 1977, at II-3.

⁶⁹Project financing entails the "funding of a new facility on an independent basis through a credit structure depending on the ability of the project as a whole to provide revenue assurance to investors." Lee and Healy, *Project Financing of Large-scale Energy Programs*, 99 Pub. Util. Fort. 17 (Apr. 14, 1977). See, e.g., Opinion No. 728, *supra* note 27 (capital structure of 75% debt/25% equity guaranteeing investors recoupment of all monies invested by the end of the initial 25 years of plant operation).

⁷⁰See notes 42 and 46 *supra* and accompanying text.

⁷¹*Tecon Gasification Co.*, 51 F.P.C. 836, 848 (1974). See also FERC Opinion No. 613, *Distrigas Corp.* (1972); Opinion Nos. 622-622-A, *Columbia LNG Corp., et al.*, 17 F.P.C. 1621 (1972); Opinion Nos. 637 & 637-A, *Algonquin SNG, Inc.*, 48 F.P.C. 1216 (1972-73).

(WESCO) case.⁷² Confronted with a demand for a full cost of service tariff with a guaranteed return whether or not any coal gas was eventually commingled with natural gas in jurisdictional pipelines, the FPC approached the pricing issue from a "new perspective" designed to encourage development of the commercial technology for producing synthetic gaseous fuel.⁷³ However, the Commission rejected many of the proposed financing and tariff features of the WESCO project and attached conditions to the certificate to protect ratepayers from excessive cost burden.⁷⁴ In other cases, the FPC and its successor, FERC, maintained the position that consumers were not to be charged the costs of development of small-scale demonstration projects.⁷⁵

In approaching the Great Plains coal gasification project in 1979,⁷⁶ FERC expressed a willingness to provide a "regulatory" subsidy⁷⁷ to the gas pipeline industry in certain instances. FERC had invoked its RD&D regulations in two earlier cases to approve the charging of ratepayers for synfuel projects before the projects produced any gas,⁷⁸ and the Commission continued this deviation from past policy in order to mitigate the impact of market forces in the coal gasification area. The Great Plains financing plan contained the following elements, which the sponsors considered to be an inseparable package:

1. During the construction phase, a ratepayer "surcharge" to recover on a current basis the costs of debt and equity capital.⁷⁹
2. A cost of service tariff enabling Great Plains, once it became a natural gas company, to recover automatically its cost on a current basis from the affiliated pipelines.
3. "Tracking provisions" enabling the affiliated pipelines, in turn, to recover automatically their costs on a current basis from ratepayers—even during the construction period—for the charge covering costs of capital.
4. "Rolled-in pricing," instead of incremental pricing,⁸⁰ thus adding the cost of the coal gas to the lower cost of natural gas, thereby affecting all sales of the resulting mixture by the affiliated pipelines to their customers.

⁷²See Opinion No. 728, *supra* note 27, at 15. Another coal gasification case, El Paso Natural Gas Co., Docket No. CP73-131 (Initial Decision, June 21, 1974), has remained in limbo since April 21, 1975, when the FPC deferred the case at the request of the project sponsor.

⁷³Opinion No. 728, *supra* note 27, at 17.

⁷⁴The FPC approved a formula designed to assure recovery of only the reasonable and prudent costs involved; if production was impaired for any reason, the rate of return was affected, not the recovery of costs. The Commission found that these conditions could ensure that the WESCO sponsors would receive a just and reasonable price for coal gas while providing adequate protection to consumers against imprudent and improper expenses. The Commission believed that the overall pricing mechanism would allow the sponsors to assure their investors that they would recover the costs incurred plus a reasonable rate of return on their investment in the project. *Id.* The project was never financed. See note 27 *supra*.

⁷⁵See e.g., Michigan-Wisconsin Pipe Line Co., Docket No. RP73-102, 51 F.P.C. 2408 (1974) (delay coal rental payments associated with a coal gasification program disallowed); Southern Natural Pipe Line Co., Docket No. RP74-93 (Sept. 4 and Oct. 30, 1974) (cost of service did not include expenses which would otherwise be capitalized to a planned coal gasification project); FPC Opinion No. 782 (Nov. 9, 1976) (cost of service did not include coal lease option payments in connection with planned coal gasification facility); Northern Natural Gas Co., FERC Opinion No. 14 (May 10, 1978) (R&D items did not include a series of studies preliminary to a decision whether to construct a coal gas plant using the Lurgi process). See also Transcontinental Gas Pipe Line Corp., FPC Opinion No. 801-A (July 29, 1977) (denying rate treatment for four non-R&D synthetic gas projects which were eventually abandoned).

⁷⁶Order No. 69, *supra* note 18.

⁷⁷Zipp, *supra* note 18, at 32.

⁷⁸See United Gas Pipe Line Co., FERC Docket No. RP77-138 (Sept. 5, 1978) (pursuant to its RD&D ratemaking regulations, FERC allows recovery of \$12.7 million in RD&D costs to be incurred on a "biomass" synthetic fuel project). Cf. Northern Natural Gas Co., FERC Opinion No. 14 (May 10, 1978) (pursuant to prudent investment rules, FERC approves rate treatment for \$160,530 in expenses to be incurred in a coal slagging gasifier project).

⁷⁹The concept is analogous to the "construction work in progress" element included in rate base. See note 42 *supra*.

⁸⁰See Columbia LNG Corp. v. FPC, 491 F.2d 651, 653-54 (5th Cir. 1974) (remanded on issue of incremental pricing).

5. Recovery of debt from ratepayers in all events, including recovery of debt from ratepayers on a five-year accelerated basis if the project should go awry.
6. A 15 percent return on equity during the construction and operation phases, with a minimum guaranteed return during the latter phase; and recovery of equity, plus a 15 percent return from ratepayers on a five year accelerated basis if the project should be aborted—including circumstances of cost overruns or technological failure caused by governmental action.⁸¹

FERC concluded that the Great Plains proposal, although containing several elements found undesirable in the earlier Transwestern proposal, was consistent with the principles of Order No. 566⁸² and should therefore be accorded special financing guarantees through a Section 7 certification. The Commission identified four conditions necessary for a proposed RD&D project to satisfy the requirements for the issuance of a certificate of public convenience and necessity:

1. It is likely that an industry utilizing the experimental process will be needed in the future.
2. The demonstration benefits of the proposed facility equal or exceed its cost.
3. All the finance and tariff provisions of the proposal are reasonable and in the public interest.
4. It is reasonable for the ratepayers and customers of the sponsoring pipelines to bear the cost of the project and provide the requisite financial guarantees to the investors.⁸³

As the D.C. Circuit held in *Consumers' Counsel* that FERC was without jurisdiction to certificate coal gasification plants under Section 7 of the Natural Gas Act, these four standards now relate primarily to future certificate decisions involving experimental RD&D projects for natural gas production or the transport and sale of mixed synthetic and natural gas.

Although it did not decide whether the particular financing package in *Consumers' Counsel* violated the public convenience and necessity standard or the conditions identified as pertinent thereto by the Commission, the D.C. Circuit indicated in *dicta* that the tariff arrangements were "certainly not ordered with the interests of ratepayers foremost in mind, but rather with an eye toward keeping the Great Plains project on track."⁸⁴ The Court of Appeals also alluded to the possibility that in appropriate cases the approval of customer-based financial programs could be an arbitrary and capricious abuse of Commission discretion.⁸⁵ This

⁸¹Great Plains Gasification Associates, *et al.*, FERC Docket No. CP78-391 (Initial Decision, June 6, 1979), at 17-18.

⁸²Opinion No. 69, *supra* note 18, at 110-115.

⁸³Zipp, *supra* note 18, at 32.

⁸⁴*Consumers' Counsel*, *supra* note 13, slip op. at 38-39 (footnote omitted). The comprehensive financing plan for the proposed coal gasification plant in the Great Plains project was rejected by the Administrative Law Judge in his Initial Decision because the plan concentrated the cost of the demonstration project on the ratepayers of the sponsors' pipelines. Rejecting the application of RD&D treatment for the project, the ALJ determined that while "[t]here may well be a national need to get on with efforts to develop a coal gasification technology," the costs of such development should be borne by the taxpayers, rather than by only a portion of the nation's natural gas consumers; "whatever benefits are to be derived from this project will be shared by the entire country, not merely some ratepayers." Great Plains Gasification Associates, *et al.*, FERC Docket No. CP78-391 (Initial Decision, June 6, 1979), at 17-18.

In reversing this decision, FERC applied its RD&D standards to approve the financing plan, with minor modifications, finding:

This project will be supported by consumers of approximately one-third of the Nation's interstate gas and any burden will be small and will be justified by the benefits to those consumers. We hold this to be satisfactory for a finding that there is a sufficient sharing of costs and the public convenience and necessity will be served by granting the requested certificate.

Opinion No. 69, *supra* note 18, at 113. The Commission concluded that the Great Plains project would advance the public interest and the interest of the sponsoring pipelines' consumers, despite the relatively miniscule increment in gas supplies, by providing "a basis for evaluating various environmental, social, political, and regulatory questions regarding the future role, if any, of coal gasification in the energy economy of the United States." *Id.* at 115.

⁸⁵*Consumers' Counsel*, *supra* note 13, slip op. at 38-39 n.37.

judicial disposition against ratepayer financing indicates that the Court of Appeals did not consider the various conditions identified by FERC to have been satisfied by the Great Plains financing proposal. Future sponsors seeking Section 7 certificates of public convenience and necessity for expensive demonstration projects, and synfuel project sponsors seeking post-construction certificates for jurisdictional facilities, will have the burden of proving that their projects will substantially benefit their customers, regardless of any long-term informational benefits to the nation as a whole.⁸⁶ *Consumers' Counsel* should not affect ratepayer financing of projects involving transport technology as much as those involving synfuels production technology, since the former tend to have more tangible benefits for consumers. Nonetheless, ratepayer schemes deserve special scrutiny, because sponsors stand to suffer no loss unless their expenditures are shown to be "imprudent." This showing would be especially difficult in the context of an experimental project, in which "higher than expected costs or absolute project failures may themselves provide demonstration benefits."⁸⁷

CONCLUSION

Expensive experimental projects in natural gas development provide a variety of benefits to both consumers of sponsoring companies and the nation as a whole. Since the incremental benefit to ratepayers from some demonstration projects can be relatively small, some of the responsibility for financing such programs properly should be placed on the principal beneficiaries—U.S. taxpayers—as Congress and the courts have acknowledged. In the area of coal gasification, the D.C. Circuit held in *Consumers' Counsel* that FERC overstepped its statutory authority in approving a project financing package for the Great Plains plant.⁸⁸ The Synthetic Fuels Corporation is now charged with the promotion of synfuels development, while the Commission is limited to the regulation of jurisdictional transportation and sales of natural gas, including mixtures of synthetic and natural gas. In the future, costly demonstration projects proposed by natural gas

⁸⁶Besides the scientific and economic information that a commercially sized synfuels project would provide, valuable information regarding environmental effects will be developed. For example, effects of coal gasification which must be examined include the proper disposal of wastewater containing organic and trace elements of unknown toxicity, and the "boomtown" social effects of situating plants in areas of low population density where both coal and water are available in large quantities. See generally Sherman, *The Development of Synthetic Fuels*, 8 Ecol. L. Q. 725, 782-785 (1980); Herman, *Energy Futures* 406-408 (1977).

⁸⁷Opinion No. 69-A, *supra* note 18 (dissenting opinion of Commissioner Holden, at 10). See also FERC Opinion No. 69-B, *Great Plains Gasification Associates, et al.* (June 27, 1980).

⁸⁸The Court of Appeals held that FERC improperly attempted to "fill in" where it believed some Federal financial help was needed; that FERC improperly engaged in promotion of synfuels without any jurisdiction or expertise in making determinations regarding the relative merits of different processes, methods, or technologies; and that FERC failed to properly take account of contemporaneous Federal legislation regarding the financing of demonstration synfuel plants. *Consumers' Counsel*, *supra* note 13, at 35, 37-38, 39-42. These reasons for keeping FERC insulated from synfuels promotion, which are ancillary to the main jurisdictional holding, appear to be somewhat ill-founded. In Order No. 69, FERC specifically directed the sponsors of the Great Plains coal gasification project to seek Federal financial assistance if and when it became available, which they did successfully in November 1980. In considering various project proposals for accordance with "public convenience and necessity" certificate provisions and "just and reasonable" tariff provisions, FERC has developed sufficient expertise regarding synthetic gaseous fuel technologies to justify reasoned decisions allowing consumer backstopping in financing plans. See note 78 *supra* (synfuels technology); *Public Service Commission of New York v. Federal Power Commission*, 167 F.2d 361, 370 (D.C. Cir. 1972) (departures from the usual rules of public utility regulation, such as allowing current rates to deviate from the cost of supplying service to current ratepayers, were justified by the public interest in enlarging the field supply of natural gas).

companies will be scrutinized by FERC, as the consumer backstopping issue continues to be relevant in the certification of jurisdictional facilities relying on expensive experimental technologies. While the Commission cannot extend its ratemaking jurisdiction to charge customers for synfuel activities which are not reasonably related to jurisdictional activities, necessary and reasonable cost items should continue to be included in rates when they will provide demonstration benefits related to natural gas supplies and transportation.