

FINANCING U.S. ENERGY DEVELOPMENT: AN ECONOMIST'S PERSPECTIVE

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I. INTRODUCTION

Who should bear the risks and financial burden of future U.S. energy development: business, government, or consumers? That is the central issue in the controversy and court battles which have erupted over the Federal Energy Regulatory Administration's (FERC) precedent-setting attempt¹ to force the gas customers of five major pipelines to finance the Great Plains Coal Gasification Project,^{1a} the first commercial-sized U.S. synfuels plant.

In addition to the issue of "who pays," a second, more subtle query has been raised by FERC's endorsement of consumer financing: is government regulation an appropriate mechanism to spread and allocate the financial, regulatory, and engineering risks of future large-scale and high-risk energy projects? Since such future energy projects as the Alaskan natural gas pipeline, synfuels plants, and fusion generators may require some type of "risk insurance" to obtain funds from private capital markets, this may be the more important question; the court's answer in Great Plains has profound significance for the course of U.S. energy policy.

This article examines these two issues within the context of the Great Plains case.^{1b} Section II presents the economic arguments for the three financing options—private sector, government, and consumer. Section III examines the major legal arguments set forth by the various proponents and opponents of the project, examines their relationship to the economic arguments, and explores the question of the "proper" role of regulation as a risk-spreading device. Section IV concludes with a discussion of the policy implications of the U.S. Circuit Court of Appeals' resolution of the Great Plains case. By way of introduction, a brief description of the Great Plains Project (hereinafter referred to as GP) is provided in the following paragraph.

The proposed Great Plains Coal Gasification Project (GP) is designed to produce 125,000 mcf² per day of high-Btu coal gas, utilizing the Lurgi³ and metha-

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¹Federal Energy Regulatory Commission, Opinion No. 69, Great Plains Gasification Assoc., *et al.*, (Nov. 21, 1979) (hereinafter, "Opinion No. 69").

^{1a}See Office of Consumers' Counsel v. FERC No. 18-1306 (D.C. Cir. Dec. 8, 1980).

^{1b}*Ibid.*

²1 Mcf equals 1,000 cubic feet.

³The Lurgi process was developed by a German company to convert coal to low-Btu gas. First, crushed coal undergoes "pressure gasification" involving reactions with oxygen and steam. This produces a synthetic raw gas which is treated to remove tar, heavy oils, and gas liquor. The treated gas is then passed through a catalytic process that modifies its composition. Last, other impurities are removed to leave a purified low-Btu gas.

nation⁴ processes. The \$1.5 billion plant⁵ will be built by Great Plains Associates, a consortium of five natural gas pipeline companies and their affiliates⁶; it will be located in Mercer County, North Dakota, contiguous to a dedicated 348 million ton lignite mine.⁷ If successful, it will be the first commercial-scale coal gasification and synfuel facility built in the U.S., providing a crucial feasibility test for turning low-grade, abundant coal resources into premium natural gas compatible with existing pipelines. This demonstration is especially important now that conventional gas resources are dwindling⁸ and the price of natural gas imports has been linked to the price of OPEC oil.

II. THREE FINANCING OPTIONS: THE ARGUMENTS

From the outset, the central issue in GP has been who should pay for the project: the pipelines which expect to reap the profits from it, the taxpayers who will enjoy the national security and informational benefits of a successful synfuels plant demonstration, or the pipeline ratepayers who will consume the gas that might be produced?

A. *Private Financing*

The most obvious method of financing GP—and apparently the least favored by its sponsors—was private financing, the manner in which most capital investment in the U.S. economy is made.⁹ Specifically, companies that wish to undertake a project raise capital by selling new stock (equity funds), issuing bonds (debt), drawing on their retained earnings, and/or borrowing directly from financial institutions such as banks and insurance companies, using their assets as collateral. The project sponsors and private investors share the risks and financial burdens of the new investment under such financing.

⁴Methanization converts low-Btu gas into high-Btu, pipeline-quality gas. Catalytic reactions convert carbon monoxide and hydrogen to methane. The gas is then compressed and dehydrated to meet pipeline-quality specifications. See generally Senate Committee on Energy and Natural Resources, 96th Cong., 1st Sess., *Synthetic Fuels from Coal: Status and Outlook of Coal Gasification and Liquefaction* 20 (Comm. Print, June 1979) (hereinafter, "Synthetic Fuels from Coal").

⁵The total installed cost of the gasification plant is estimated to be \$890 million in 1978 dollars. The development of a coal mine adjacent to the plant is estimated to require an additional capital investment by Great Plains of \$85 million. Assuming an annual inflation rate of 7.5%, the capital costs of the gasification plant and the portion of the coal mine dedicated to Great Plains are estimated to total \$1,176,165,000. This estimate assumes that the pre-operational costs of capital will be borne by ratepayers on a current basis; otherwise, the capital costs are estimated to exceed \$1.5 billion. FERC Opinion No. 69, at 4. (Note: Cost estimates reflect the conditions at the time of Opinion 69.)

⁶The Great Plains Associates is a general partnership formed by five corporations that are in turn affiliates of certain jurisdictional pipeline companies (Customer Pipeline Companies). The partners are: Columbia Coal Gasification Corporation (Columbia Coal), an affiliate of Columbia Gas Transmission Corporation (Columbia); ANR Gasification Properties Company (ANP), an affiliate of Michigan Wisconsin Pipe Line Company (Michigan Wisconsin); PGC Coal Gasification Company (GPC), an affiliate of Natural Gas Pipeline Company of America (Natural); Tenneco SNG Inc. (Tenneco SNG), an affiliate of Tenneco Inc. (Tennessee); and Transco Coal Company (Transco Coal), an affiliate of Transcontinental Gas Pipe Line Company (Transco).

⁷Initial Brief of the Federal Energy Regulatory Commission Staff Opposing the Great Plains Associates Application (January 29, 1979) (hereinafter, "FERC Staff Brief").

⁸Jenson Associates, Inc., *Forecast of Gas Supplies Available to Lower 48 States 1980-1990*, Boston (June 1979).

⁹See, e.g., U.S. Dept. of Commerce, *Survey of Current Business*, Volume 48, Number 7 (July 1978).

The principal economic argument for the private sector providing of capital is that it results in the most "efficient" allocation of resources in an economic or Paretian sense. Based on the Arrow-Debreau perfect competition paradigm which illustrates that perfect competition leads to the most efficient outcome,¹⁰ this argument rests, however, on a number of rather restrictive assumptions that presume no "market failure." In particular, markets must be complete and perfectly competitive.¹¹ In addition, there must be no divergence between the private and social costs of the project: that is, there must be no external benefits (or costs) associated with the project that might accrue to (or burden) parties not directly involved in the project.¹²

B. Government Financing

The second option that virtually all parties involved in the GP case preferred was government financing, which involves the use of grants, loans, or loan guarantees. In the case of full grants or loans, the government effectively absorbs the risks and financial burdens of project development. In the case of loan guarantees, the government absorbs the project risk, allowing project sponsors to borrow far more easily in the capital markets, which then bear the financial burden.

The major economic arguments for government financing presume some type of market failure associated with violation of the assumptions of "perfect competition." According to traditional public finance theory if a market failure causes a divergence from the efficient competitive outcome, the government may have to intervene to "correct" that failure.¹³ While this "*deus ex machina*" view of government has been sharply criticized,¹⁴ the notion that the government exists in large part to correct market failures nonetheless forms the basis for much government intervention today, from anti-trust activity to farm subsidies. In the case of GP, several possible market failures arise.

The Import Premium Argument. The first possible market failure may result from a divergence between the private marginal cost of foreign petroleum (i.e., the market price) and its social marginal cost. There is a now widely accepted belief that the importation of foreign petroleum implies an "import premium" such that the "shadow price" or "opportunity cost" of imported oil is *higher* than its market price.¹⁵ The genesis of this import premium is the additional costs or

¹⁰As familiar to economists as the Hope decision is to lawyers, the perfect competition paradigm was developed from Gerard Debreau, *Theory of Value*, Cowles Foundation, Monograph 17, New York, John Wiley & Sons, Inc. (1959). The existence of a competitive equilibrium was developed more fully in K. Arrow and G. Debreau, "Existence of an Equilibrium for a Competitive Economy," 22 *Econometrica* (1964), pp. 265-290.

¹¹*Ibid.*

¹²The divergence of social from private marginal cost due to externalities is discussed in W. Nicholson, *Microeconomic Theory*, 2nd edition, New York, The Dryden Press (1978), pp. 568-571.

¹³This traditional proposition in welfare economics is presented in R. A. Musgrave and P. B. Musgrave, *Public Finance in Theory and Practice*, New York, McGraw-Hill Book Company (1976), Ch. 3 and 32.

¹⁴The alternative view is that the government is an agent of special interests to redistribute income. This "capture theory" of government, and in particular of regulation, is presented in G. Stigler, "The Economic Theory of Regulation," *The Bell Journal of Economics*, (Spring 1971), pp. 3-21, and S. Peltzman, "Toward a General Theory of Regulation," *Journal of Law and Economics*, (August 1976).

¹⁵The "oil import premium" is defined and measured in R. Stobaugh and D. Yergin *Energy Future*, New York, Random House, (1979), and U.S. Dept. of Energy, Office of Oil Policy, *The Energy Problem: Costs and Policy Options*, Staff Working Paper (May 23, 1980).

“externalities” associated with economic and national security considerations. The argument: foreign import dependence worsens our balance of payments and weakens the dollar, in turn exacerbating inflation and economic instability. Such dependence also exposes U.S. foreign policy to coercive threats of embargo or supply interruptions. The import premium measures these costs, and its calculation is generally designed to answer the question of how much should the U.S. be willing to pay for an “insurance policy” against a foreign supply interruption. Estimates of this import or “insurance” premium have ranged from the Department of Energy’s \$4/barrel¹⁶ to as high as \$60-70/barrel.¹⁷ Assuming that coal gas is a substitute for foreign petroleum,¹⁸ the existence of an “import premium” suggests that the government should be willing to subsidize the construction of GP in an amount equivalent to at least \$0.65 per mcf of gas produced and perhaps as high as \$9.73 per mcf (depending on the import premium estimate).¹⁹

The Informational Benefits Argument. The second possible market failure, which is closely related to the import premium concept, may result from an externality associated with the “informational benefits” a successful synfuels demonstration at GP will presumably provide. In particular, it may be argued that besides adding to U.S. gas supplies, a successful GP demonstration will provide evidence of: (1) technical feasibility, *i.e.*, can coal gas be successfully produced and transported to consumers? (2) economic rationality, *i.e.*, are synfuels affordable? and (3) regulatory effectiveness, *i.e.*, is synfuel production compatible with existing environmental laws and procedures?²⁰ The existence of these positive “informational benefits” may cause a divergence between the private cost of the project to its builders, who cannot capitalize these benefits, and the social cost of the project to the nation, to which these benefits accrue. The existence of such informational benefits strengthens the case for subsidization; the important principle implicit in this argument is that since the nation will benefit from the synfuels demonstration, the nation (*i.e.*, the government) should provide the subsidy.

The Large Scale and High Risk Arguments. The third possible market failure, which relates to a breakdown of the assumptions of perfect competition and complete markets, derives from the high risks and large scale of the GP Project.

¹⁶*Ibid.*

¹⁷*Ibid.*

¹⁸Oil and gas are generally considered to be import substitutes. Additional domestic gas supplies directly displace gas imports. In addition, gas may be used to displace oil in other sectors, primarily the industrial, but also the residential and commercial sectors, thus indirectly reducing imports. See Generally U.S. Dept. of Energy, Office of Electrical Systems, Policy and Evaluation, *Oil Vulnerability Study*, (September 1980).

¹⁹The importance of such a subsidy to a project's sponsors can be seen in a brief example. One mcf of natural gas equals .1622 barrels of (residual) oil. Thus, a \$4 to \$60 per barrel import premium translates into a \$0.65 to \$9.73 natural gas premium. According to estimates prepared by project sponsors, the cost of coal gas produced at GP could range as high as \$7.16 per mcf. (Opinion 69, at Appendix A, page 2.) At the time of that estimate, the marginal cost or market price of supplemental foreign gas supplies was roughly \$6 per mcf. Thus, it would appear that GP might “fail” a market test; that is, to its project sponsors, there appears to be a strong possibility that the plant would not turn a profit. Note, however, that if one adds the import premium to the \$6 market price of supplemental gas, the economics of the project may become favorable, at least from a social or national viewpoint, depending on which estimate one uses.

²⁰See Opinion 69, at 25-34.

Capital budgeting theory suggests that prospective builders typically determine a project's value on a discounted cash flow basis and from that analysis derive an internal rate of return. The project sponsors will decide to build if that return is greater than the "hurdle rate," *i.e.*, their market cost of capital.²¹ In a world of perfect capital markets where complete markets exist for risk sharing, those funds should be available at a "risk free" interest rate (*e.g.*, the treasury bill rate) plus a "premium" reflecting the risk characteristics of the firm and, implicitly, the proposed project.²² In general, the riskier a project, the higher that premium will be and the higher the rate of return the project will require to attract capital.²³ Put another way, interest expenses rise with the risk premium and reduce the rate of return on a project, making it less attractive to undertake. Moreover, for very risky projects, there may be a practical limit to the risk premium that builders are willing to pay or investors are willing to demand. For example, under the "prudent man rule," the Employment Retirement Income and Securities Act prohibits many large institutional investors from investing in higher risk projects.

GP has generally been portrayed as a very high risk project.²⁴ First, there is the alleged *engineering* risk that the project will not produce any gas, or will produce less gas (at a higher unit cost) than the volumes projected.²⁵ No coal gas plant of this size has yet been commercially demonstrated, although the Lurgi process is an "off-the-shelf" technology and is currently in use in several smaller coal gasification facilities, *e.g.*, Sasol in South Africa.²⁶

Second, there is *regulatory* risk. For example, it is possible that environmental regulations will prevent the project's completion or substantially amplify its costs.²⁷ In addition, project sponsors and the investment community have expressed concern that FERC may change its regulatory policies towards GP over time.²⁸

These types of risk contribute to the third and ultimate *financial risk*, which reflects the probability that investors will earn a return on, and in the case of bonds or loans, a return of, their capital. Obviously, the higher the engineering and regulatory risks, the higher the financial risk (and attendant risk premium); if the high risk of a project practically excludes the builders from obtaining private financing, the government may find it desirable to intervene²⁹ and assume, or at least share, that risk with builders through grants (complete risk assumption), loans, or loan guarantees.

²¹J. C. Van Horne, *Fundamentals of Financial Management*, New Jersey, Prentice-Hall, Inc., (1976), Ch. 13.

²²J. C. Francis and S. H. Archer, *Portfolio Analysis*, New Jersey, Prentice-Hall, Inc., (1971), Ch. 2, 5, and 8.

²³*Ibid.* Ch. 2.

²⁴"There is a great deal of uncertainty surrounding coal gasification." Opinion, 69, at 25.

²⁵*Ibid.*, at 27-29 and Great Plains Gasification Associates, Nos. CP78-391, CP75-278, CP77-556, CP75-283 (FERC November 21, 1979) Transcript at 4090, (hereinafter, "Transcript").

²⁶Transcript, at 4960-4961 and FERC Staff Brief, at 38.

²⁷Opinion 69, at 30-31.

²⁸See transcript, at 3165-65.

²⁹Two reasons why the government might want to intervene have been discussed: namely, to correct the market failures associated with the "import premium" and the "information externalities."

Financial risk may also rise with the *scale* of a project, which can increase not only the capital requirements, but also the *collateral* requirements. While traditional finance theory suggests that collateral may not be a prerequisite for obtaining funds for a "profitable" project,³⁰ equally traditional Wall Street investors seem to practice otherwise; and a company wishing to borrow or sell bonds on the financial markets must typically back up its obligations with its or its parents assets.³¹ It then follows that if collateral is necessary to raise debt capital or undertake loans, the size of the company (or consortium) would have to increase with project scale.³²

While this "scale problem" is generally presented as a "small business argument", its theoretical interpretation is that the implied capital and collateral requirements of a project may constitute a "barrier to entry" into the relevant market for smaller firms.³³ Since barriers to entry are, in turn, a source of market power, giving rise to an oligopoly or monopoly market structure, large scale may thus contribute to a breakdown in the perfect competition assumption. The government may, therefore, want to subsidize certain large scale projects in order to remove barriers to entry in a market and thus ensure competition (and implicitly, economic efficiency).

C. Consumer Financing

Consumer financing was considered as the third and most controversial method of financing GP; it was sought only after taxpayer financing was first rejected by Congress. In essence, it uses the regulatory apparatus to shift the financial burdens of project construction and the risks of project failure to consumers. Several mechanisms exist for accomplishing such shifts.

First, consumers may be required by the regulatory authority to pay some type of "surcharge" to finance all or part of a project's construction costs. The most common form of this surcharge is the practice of allowing construction work in progress (CWIP) in the rate base so that a firm earns an immediate return on its investment.³⁴ The practice of using CWIP is not, however, universal. An alternative accounting procedure for construction expenditures, adopted by FERC as well as many state public utility commissions, is to compute an "allowance for funds used during construction" or "AFUDC" charge whereby construction

³⁰See M. Miller and F. Modigliani, "The Cost of Capital to Electric Utility Industry," 56 *American Economic Review* (June 1966) and E. Fama and M. Miller, *The Theory of Finance*, New York, Holt, Rinehart and Winston (1972).

³¹This "collateral requirement" took the form of "seven essential elements" required by the investment community, including a "surcharge" and non-completion guarantee. FERC Staff Brief, at 31. In addition, three of the prospective lending institutions, Citibank, Morgan Guaranty Trust, and Bank of America, filed testimony identifying four tariff elements as "essential." These elements included the non-completion or "consumer" guarantee and the surcharge. Transcript, at 3303.

³²The assumption, of course, is that there is a correlation between a firm's size and its ability to use its assets as collateral.

³³For a discussion of barriers to entry and their effect on competition, see J. S. Bain, *Barriers to New Competition*, Cambridge, Harvard University Press, Ch. 1-6 (1956).

³⁴"The approval of the surcharge is essentially the adoption of construction work in progress." Opinion 69, at 12, Holden, Commissioner, concurring in part and dissenting in part, (hereinafter, "Opinion 69, Holden"). See also FERC Staff Brief, at 136-137.

expenditures are not put into the rate base until the project is complete. Once the plant or project is "used and usable," that AFUDC amount is *added* to the rate base and allowed to earn a return.³⁵

In theory, the choice of CWIP versus AFUDC rests primarily on a question of equity. In particular, if the AFUDC rate is set equal to the firm's cost of capital, both CWIP and AFUDC accounting should impose the same financial burden on consumers and firms on a discounted cash flow basis, and both will be equally efficient. The only difference between the accounting procedures will be in the timing of the payments; with the CWIP surcharge, consumers pay more in the near term, but the same in a present value sense.³⁶ That, in turn, raises questions of intertemporal and intergenerational equity; the choice of whether to impose CWIP becomes more a matter for the judiciary than the economist.³⁷

The general use of surcharges (either CWIP or AFUDC) does raise, however, several important efficiency questions. Specifically, if externalities are present which the project sponsors cannot capitalize, it is possible that consumers may not be able to capitalize them fully either. For example, in the discussion above, we saw that the informational, national security, and economic benefits accruing to the nation from a successful demonstration at GP may lead to a divergence between the private and social marginal costs of a project. Such a market failure led to a potential reluctance on the part of the sponsors to build the project without some outside assistance. The use of a surcharge (as opposed to a government subsidy) would not, however, correct that failure. The surcharge does not "internalize" the externality but merely shifts the financial burden to a small subset of the nation (in this case, gas customers) who, like the project sponsors, will not be able to capture the full benefits of these externalities.³⁸ The potential inefficiency or distortion here is of another kind, a shift away from gas consumption because gas supplies are "overpriced." Thus, it may be not only "unfair" to force a small fraction of consumers to pay for a project benefiting the nation as GP opponents have argued, but it may also be inefficient.

Second, consumers may be required by the regulatory authority to be "signatory" to some type of guarantee against project failure. For example, in the case of GP, consumers were obligated by FERC to pay a financing surcharge regardless of whether the project was completed and/or whether or not there were cost overruns.³⁹ The major economic argument for such a guarantee is that it provides investors with a "consumer guarantee," and in a fashion similar to government loan guarantees, creates an environment in which investors will provide capital to the project. Note, however, that in order for such a consumer guarantee to be

³⁵J. E. Suelflow, *Public Utility Accounting: Theory and Application*, East Lansing, Michigan State University, (1973), Ch. 8. See also FERC Staff Brief, at 136-139.

³⁶In particular, consumers will pay more in the near term under CWIP, but their total cash payments will be less. Under AFUDC, consumers total cash payments will be higher because of the overall larger rate base resulting from the addition of the AFUDC account. Once these two income streams to the firm are discounted, their present value will be equal. Thus, provided that the AFUDC rate is set equal to the firm's cost of capital, one should be indifferent between the two methods regarding their efficiency.

³⁷On the intertemporal equity question, see FERC Staff Brief, at 137.

³⁸Initial Decision of Administrative Law Judge, Great Plains Gasification Assoc., *et al.*, Docket No. CP78-391, at 27-28, 28 (June 6, 1979), J.A. 396 (hereinafter, "Initial Decision").

³⁹Opinion 69, at 62, 67.

non-distortive (and perhaps even "fair"), consumers must be in a position with the potential to realize all of the benefits of a project; that is, there can be no externalities.

The major economic argument against such guarantees (that applies equally to government financing) is that, in shifting risk from the builders to consumers, an important incentive to minimize costs is removed. The prospects for cost overruns are increased at the same time the probability that unworthy projects will be selected for construction is enhanced.

The final method of shifting the risk and financial burden is the use of "rolled-in" pricing. For example, in GP's case, the cost of the more expensive coal gas would be averaged into the cost of the less expensive conventional pipeline supplies.⁴⁰ The major economic argument for rolled-in pricing is that it is a method of providing subsidies if they are judged to be required on the basis of a market failure.⁴¹ Further, in guaranteeing the marketability of the coal gas, rolled-in pricing eliminates some of the financial risk of the project associated with such market uncertainty.⁴² There are several counter-arguments to the use of such a subsidy. First, rolled-in pricing disguises the cost of energy to consumers and thus overstimulates its use. Second, by eliminating market risk, this mechanism also eliminates one of the informational benefits of the project; since it would have a guaranteed market, the coal gas does not have to pass an "economic test." Besides these efficiency arguments, it is also true that rolled-in pricing forces existing consumers to pay a disproportionately higher cost for gas than new customers who are added when gas supplies are enhanced.⁴³ Thus, from an economist's view, the use of rolled-in pricing hinges on whether subsidies to the project are justified and whether a more efficient way (*e.g.*, grants or loan guarantees), exists to provide those subsidies. On that point, it is worth repeating an important principle that has emerged in this discussion: if consumers are to pay the costs of a project and bear the risks, those same consumers should also capture the benefits of the project, to ensure both efficiency and equity. In this narrow sense, consumer financing is directly analogous to private financing. The only difference is that in one case consumers pay and in the other investors pay. Note, however, that in the presence of externalities, government financing may be preferred to *either* method.

III. LEGAL ARGUMENTS

This section examines the major legal arguments set forth by the principal participants in the GP case who supported, or were in opposition to, consumer financing. These participants include: (1) the project sponsors (American Natural Resources and later, the Great Plains Associates), who requested consumer financing; (2) FERC's Administrative Law Judge, who rejected the initial request; (3) the Department of Energy (DOE), which strongly supported the sponsors' request; (4)

⁴⁰*Ibid.*, at 67.

⁴¹FERC Staff Brief, at 134.

⁴²*Ibid.*

⁴³*Ibid.*, at 18.

FERC's commissioners, who later approved consumer financing, (5) General Motors, one of the major intervenors appealing FERC's decision; and (6) the U.S. Court of Appeals, which delivered the final decision in the case. Comparing and contrasting the legal arguments set forth in the case with the economic arguments presented above facilitates assessment of the relative merits of each of the three financing options. In discussing these legal arguments in an historical context, we also hope to illustrate how the adoption of consumer financing would significantly expand the role of regulation in financing energy development.

A. *The Project Sponsors*

1. *American Natural Resources*

On March 26, 1975, American Natural Resources (ANR), the pipeline and gas distribution company which first conceptualized the GP project, went to FERC to request a certificate of convenience and necessity.⁴⁴ In that proposal, ANR asked FERC to approve a *combination* of consumer and government financing. A surcharge to consumers was intended to cover all financing charges during construction, including interest expenses and a return to equity;⁴⁵ government loan guarantees, assumed to be forthcoming from the Congress, were to provide the company with sufficient credit to obtain the requisite loans from several banks.⁴⁶

To justify its proposal, ANR argued that the plant was a necessary gas supply project to alleviate a natural gas shortage on the Michigan Wisconsin Pipe Line Company system, a pipeline affiliate of ANR.⁴⁷ Since the assets of the company rivaled the total investment in this large-scale project and since coal gasification appeared to carry with it large technical, regulatory, and economic risks, both ANR and the financial community were reluctant to fund such a project without some kind of consumer and/or government guarantees.⁴⁸

It appears, then, that one major purpose of ANR's initial proposal was to use the regulatory apparatus to shift the project risk from the company and its potential investors to consumers and the government. ANR's gas customers were included in the proposal on the grounds that since they would benefit from consuming the coal gas produced, they should also help pay for it. The government was asked to absorb risk in order to facilitate ANR's entry into the synfuels market. FERC was called on to ratify that arrangement as a means of providing a guarantee of the project for outside investors. ANR's President Arthur K. Seder, Jr. readily acknowledged this latter point in testimony before FERC:

We have always felt basically that if the Commission had jurisdiction over the plant itself and all the pipeline facilities leading to it, the financing of the project would be enhanced . . . the fact that the [FERC] will in effect authorize cost of service treatment insofar as the receipt and payment for the gas by the jurisdictional pipeline is concerned gives [GP] whatever measure of assurance that it has.⁴⁹

⁴⁴FERC Docket No. CP75-278.

⁴⁵Transcript, at Ex. 3, p. 16 and Ex. 26. The surcharge averaged 10 cents per mcf (Exhibit 26, Tr. 191).

⁴⁶Arthur K. Seder, Jr., President of ANR, stated in cross-examination that the project could not proceed without federal loan guarantees. Transcript, at 1459, 1471-72.

⁴⁷Transcript, at Ex. 3, p. 7.

⁴⁸Witness Adelman testified that "no one sponsor" would have the financial capability to build the minimum-sized plant, so government assistance would be required to develop a coal gas industry. FERC Staff Brief, at 109-110. See also Brief of Petitioner General Motors Corporation On Petitions to Review Orders of the FERC (May 30, 1980), at 8 (hereinafter, GM Brief) and FERC Staff Brief, at 12-13.

⁴⁹Transcript, at 251-53.

This attempt to use regulation as a risk-shifting device was not lost on FERC Commissioner Mathew Holden who would later note in his dissenting opinion of FERC's approval of customer financing:

The only reason the project is here is financing. The Commission is not being asked to exercise a regulatory function . . . Instead, it is being asked to undertake the role of facilitating the investment program of the participating company.⁵⁰

In reviewing ANR's initial proposal, several additional points are worth noting. First, the original design of GP called for a plant capable of producing 250,000 mcf per day of coal gas, a volume which would have added 10 percent to ANR's gas supplies at that time.⁵¹ Thus, there were real potential benefits to consumers in the form of protection against future gas shortages. This is an important reference point, since in later amended proposals before FERC, the project would be downgraded to an output of 125,000 mcf per day to be shared among several partners, significantly shrinking the amount of "risk insurance" against a supply shortage that the project was ostensibly to provide.⁵²

Second, in order to squeeze itself under FERC's regulatory umbrella, ANR arranged to sell its coal gas 700 miles from the plant, but only after it had been *commingled* with natural gas. Such commingling was thought to establish FERC's authority over what otherwise would have been a non-jurisdictional synthetic gas plant.⁵³ Thus, there was a clear presumption on the part of the builders that the regulatory apparatus was a legitimate mechanism for insuring against risks which they themselves could not (or would not) assume, as well as a conscious effort to loosely interpret FERC's mandate, despite a court ruling that the regulation of synfuels was beyond its jurisdiction.

2. *The Great Plains Associates*

Before FERC was able to rule on ANR's first proposal, Congressional delays in passage of the requisite loan guarantee legislation forced ANR into a reorganization of its financing proposal.⁵⁴ Unable to borrow and under increasing pressure from the DOE to expand the project to include other pipelines, ANR first formed a partnership with People's Gas Corporation,⁵⁵ and shortly afterwards, a five-member consortium, the Great Plains Associates (GPA).⁵⁶ GPA included People's Gas and affiliates of Columbia Gas Transmission Corporation, Tennessee Gas Pipeline Company, and Transcontinental Gas Pipe Line Corporation. The three newest partners were to be "passive sponsors" who would participate in the project only if and when all regulatory approvals had been received.⁵⁷

⁵⁰Opinion 69, Holden, at 2.

⁵¹Opinion 69, Holden, at 1, n. 1.

⁵²Initial Decision, at 19-20.

⁵³The manufacture, transportation, and sale of coal gas which is not commingled with flowing natural gas is not subject to FERC jurisdiction. Natural Gas Act, §§ 1(b), 2(5) and 2(6), and 15 U.S.C. § 717(b), 717a(5), and (6). The sale of GP gas was intentionally structured to occur at Crystal Falls, Michigan and more precisely, to the supplies of ANR's pipeline affiliate, Michigan Wisconsin, rather than at the tailgate of the plant. If the sale had occurred at the tailgate, prior to the point where it was commingled with natural gas flowing in the Great Lakes' System, the sale would not have been subject to FERC jurisdiction.

⁵⁴Citing the unexpected Congressional delays, ANR asked that the case be held in abeyance until new arrangements for financing could be made. Motion of Michigan Wisconsin Pipe Line Company and ANG Coal Gasification Company to defer Interim Decision, November 23, 1976. See Opinion 69, at 10 and GM Brief, at 6-7.

⁵⁵FERC Docket No. CP77-566.

⁵⁶See footnote 6 to this paper.

⁵⁷Opinion 69, at 47-48.

On June 2, 1978, GPA submitted an amended application to FERC.⁵⁸ While the proposal was identical in most respects to ANR's earlier submission, three differences are worth noting.

First, the proposal requested *complete* consumer financing, reflecting Congressional opposition to loan guarantees. Second, while ANR had originally been willing to provide a small amount of equity to help finance GP as well as forego a return on that equity if the project should fail, the conditions of the new proposal meant that each of the five partners would contribute only \$21 million of their own capital, or less than 2 percent of project's cost.⁵⁹ Moreover, they were guaranteed a return, both on and of, equity whether or not the project was completed.⁶⁰ The consortium's reason for this minimal cash exposure was that the project was simply too risky. Third, since the 125,000 mcf/day project would increase the gas supplies of the *consortium* by only 1 percent, the project could no longer be treated as a gas supply project.⁶¹ Instead, and to take advantage of a recent FERC ruling, the project was recast as a "demonstration" project.⁶² If that definition were accepted, that would enable FERC to approve the consumer financing proposal.⁶³

In support of their proposal, GPA presented several familiar "market failure" arguments: the project was both necessary for national security and would provide valuable informational benefits to the nation.⁶⁴ Without some outside assistance, however, GP would not be able to obtain financing and the project would not be built.⁶⁵ The above-mentioned benefits, therefore, would not be realized.

Note, however, that these market failure arguments are a justification, not for consumer financing, but rather for government subsidies, since the alleged benefits would accrue primarily to the nation rather than GPA's customers. Indeed, with the downgrading of the project to 125,000 mcf, GP's contribution to each partner's gas supplies provided no insurance at all against supply shortages.

B. *The Administrative Law Judge*

The fact that consumers were being called upon to assume the role of government to "correct" a market failure was recognized by FERC's Administrative Law Judge, Raymond M. Zimmet; and he objected to it for several reasons. First, the definition of GP as a demonstration project made it clear that it was the nation, not consumers, that would primarily benefit from the project; the clear implication was that the nation should pay for GP. Second, only one-third of U.S.

⁵⁸FERC Docket No. CP78-391.

⁵⁹Transcript, at Ex. 25C and GM Brief, at 18, n. 42.

⁶⁰Opinion 69, at 8.

⁶¹Under the GPA consortium, each of the five partners would obtain an approximate one percent increase in their system's gas supplies. The breakdown is as follows: Columbia, 1 percent; Michigan Wisconsin, 1.3 percent; Natural, .97 percent; Tennessee, .84 percent; and Transco, 1.6 percent. Opinion 62 Holden, at n. 1. and GM Brief, at 9.

⁶²Order No. 566, issued by the FERC on June 3, 1977, provides natural gas companies with a procedure for obtaining advance assurance of equity recovery through rates charged to their customers (e.g., consumer financing) on certain types of research, development, and demonstration projects (RD&D). (Order No. 566, Docket No. RM76-17, issued on June 3, 1977u (CCH UTIL. L. REP. [1974-79 FPC: FERC Orders Transfer Finder] ¶ 5639). Prior to the issuance of Order No. 566, commercial demonstration projects had not been eligible for such rate treatment.

⁶⁴Opinion 69, at 25.

⁶⁵*Ibid*, at 30.

gas customers (and a much smaller fraction of the nation's population) would actually use GP's gas; thus, one could hardly argue that this small customer base was a large enough proxy for taxpayers. In the Initial Decision, Judge Zimmet therefore chose to reject GPA's proposal on the grounds that:

It would simply be inequitable to have perhaps one-third of the country pay all the costs of the project, including paying for the modest volumes of coal gas to be obtained if the project is successful, while the benefits of learning whether or not it is practicable to manufacture and market coal gas would inure to the nation as whole.⁶⁶

To Judge Zimmet,

The most equitable solution, consistent with the public convenience and necessity, would be to have America's taxpayers share the costs.⁶⁷

However, Judge Zimmet chose to base his rejection on a principle of equity rather than an equally compelling efficiency consideration. The "inequitable" mismatch of project costs and benefits would likely lead to an inefficient allocation of resources: like the project sponsors, gas consumers would be unable to "internalize" the project's positive externalities.

Similarly, Judge Zimmet found the minimal cash exposure of the consortium unacceptable, but again on equity grounds. The basis of ANR's initial small equity contribution to GP had been that the company was too small to risk any more of its assets. With the addition of four partners, ANR's "small business argument" (and the implied benefits for competition through the reduction of barriers to entry) became moot since the combined assets of the consortium were more than sufficient collateral for obtaining financing. Moreover, the consortium was financially able (but apparently unwilling) to provide a much larger equity share. Judge Zimmet did not, however, mention these considerations in his decision. Instead, as the second major reason for his refusal of the project, Judge Zimmet observed:

For the same reason that sponsors refuse to be responsible for the debt, their ratepayers alone should not bear the costs . . . If a project is too risky or otherwise not worthwhile from a sponsor's standpoint, then so also is this true from the viewpoint of its ratepayers.⁶⁸

While this reasoning has appeal as an equity argument, it is not, as a general economic principle, entirely correct. If the benefits of GP were to accrue primarily to the consortium's gas customers, one could reasonably argue that it would be just as fair for consumers as for the consortium to bear the project's risks; the question then becomes one of defining property rights. At the same time, the major efficiency consideration in shifting risk to consumers is one which Judge Zimmet did not address in his opinion; namely, that such a shift reduces or eliminates the builder's incentives to minimize costs and complete the project.

Thus, Judge Zimmet just rejected GPA's proposal solely on equity grounds; he did not consider the perhaps even more compelling economic efficiency grounds. On November 21, 1979, FERC issued Opinion 69, reversing the Zimmet decision and approving GPA's proposal with minor modifications. An analysis of the role of DOE in the GP case sheds considerable light on that reversal.

⁶⁶Initial Decision, at 27-28.

⁶⁷*Ibid.*, at 29.

⁶⁸*Ibid.*, at 28.

C. *The Department of Energy*

On June 1, 1978, DOE announced that it would intervene in the GP case in support of consumer financing.⁶⁹ This intervention can only be understood within the context of the Congressional mood during the earlier stages of the project.

By 1977, the decision had been made within DOE to support a major synfuels effort as one of the main pillars of U.S. actions for reducing foreign oil import dependence.⁷⁰ Efforts to implement this strategy, however, met heavy resistance in the Congress. A Proposition 13-fueled anti-spending mood in Congress, together with a skeptical attitude toward what was then perceived as a prohibitively expensive and environmentally dangerous undertaking led to passage of PL-95-238. This law was a substantially diluted version of a bill DOE had supported; in the Department's view, it meant significant delays in the development of GP, and the wording of PL-95-238 left no certainty that loan guarantees for the project would be available.⁷¹ As an admitted expedient, DOE turned to other possible forms of financing, with the consumer option emerging as the most viable alternative.⁷²

On October 12, 1978, Deputy Secretary John F. O'Leary, chief architect of DOE's synfuels policy, testified before FERC that synfuel development was an important "insurance policy" against both an increasingly dangerous oil import dependence and prospective natural gas shortages which threatened economic growth and employment.⁷³ Moreover, coal gasification was consistent with the broader national policy of increasing domestic coal use.⁷⁴ In O'Leary's words,

[O]ur supply of natural gas is limited. The demand has already overaken the supply, forcing curtailments of use. At the same time, oil imports have increased dramatically. By developing high Btu coal gasification as a commercially viable process, we can develop a sound alternative source of energy for the future.⁷⁵

Augmenting these economic and national security externality arguments, DOE officials also stated that the informational benefits of a successful synfuels demonstration made the approval of GP desirable.⁷⁶

⁶⁹The Department of Energy Organization Act, 42 U.S.C. 7101, *et seq.*, enacted by Congress on August 4, 1977, charges DOE, *inter alia*, with the responsibility to participate in the development of a coordinated national energy policy. The policy is intended to deal with the short-, mid- and long-term energy problems of the nation and to develop plans and programs for dealing with domestic energy production. Second, it is to support a balanced and comprehensive energy research and development program, including assessing the requirements for energy research and development and developing priorities to meet these requirements. Third, to the maximum extent practicable, it is to ensure that the productive capacity of private enterprise is utilized in the development and achievement of the policies and purposes of the Act.

The Department of Energy Organization Act, 42 U.S.C. § 7101, *et seq.*, established FERC as successor to the Federal Power Commission to act as an independent regulatory commission within the Department of Energy. Section 405 of the DOE Act 42 U.S.C. § 7175 permits DOE to intervene in any FERC proceeding as a matter of right. However, sections 402(a)(1)(C) and (D) of the DOE Act, 42 U.S.C. § 7172(a)(1)(C) and (D) commit sole authority to the FERC to issue certificates under Section 7 of the Natural Gas Act and to establish rates and charges for natural gas pursuant to Sections 4 and 5 of the Natural Gas Act.

⁷⁰Testimony of John F. O'Leary, Deputy Secretary of the Department of Energy, Great Plains Gasification Associates, *et al.*, Docket Nos. CP78-391, CP75-278, and CP77-556, at 3-6 (hereinafter "O'Leary Testimony"). Also, Reply Brief of the U.S. Department of Energy to Administrative Law Judge Raymond S. Zimmet, Great Plains Gasification Associates, *et al.*, Docket Nos. CP78-391, CP75-278, CP77-556, CP75-283, *et al.*, at 3 (hereinafter, "DOE Reply Brief").

⁷¹*Ibid.*, at 8.

⁷²See O'Leary Testimony, at 7-10.

⁷³*Ibid.*, at 3-6, 10.

⁷⁴*Ibid.*, at 4; Transcript, at 4087-88, 4197, and 4331; FERC Staff Brief, at 49; and Opinion 69, at 43.

⁷⁵*Ibid.*, at 3.

⁷⁶DOE Reply Brief, at 3, 11.

However, as with the GPA consortium's proposal, DOE's defense of the project was much more a rationale for government financing than it was for consumer financing. DOE officials were well aware of that fact, and to blunt the criticism that consumer financing forced a small subset of gas consumers to assume the costs of a project whose benefits would accrue collectively to the nation, DOE insisted on its "consortium concept." In particular, it agreed to support the bid of ANR and People's Gas for consumer financing if and only if they took on the three additional "passive" partners.⁷⁷ By expanding the project to include five major pipelines serving roughly one-third of interstate gas consumers,⁷⁸ it was DOE's judgement that such a consortium would expand the ratepayer base to a point which

spreads the risk over such a large number of consumers that . . . it is a fair and equitable way to get this important project constructed.⁷⁹

DOE also asserted that:

[t]he assumption by consumers of the risk of abandonment as well as the payment of the very small additional cost that each individual consumer would pay for the gas [are] fair, just, and reasonable burdens for customers to be asked to assume in order to develop and prove a reliable technology for assuring future sources of gas.⁸⁰

With these presumptions, DOE diverged from pure economic or legal argumentation and opened the matter to judgement. In its view, the expanded customer base served by the consortium represented a sufficient "fairness" proxy for either taxpayers or total gas consumers. However, one could reasonably question that judgement, since, even under the consortium, the customer base represented only one-third of the U.S. *interstate* gas customers (and a smaller fraction of total U.S. gas consumers).

Moreover, in attempting to soften one equity argument, DOE also weakened several arguments *for* the project. One problem was that the only way DOE could persuade the three "passive sponsors" into joining the consortium was to agree to a minimal cash exposure coupled with a *complete* guarantee against any loss of equity in the event of project failure. As discussed above, such a guarantee eliminates any economic incentives to minimize cost.⁸¹ Similarly, since the consortium had sufficient assets to obtain private financing if it had been willing to risk its assets, the "small business argument" that ANR had originally presented before FERC fell before the logic that is normally used to rebut such arguments: namely, that barriers to entry can be overcome either through mergers or consortium-type activity.

Finally, DOE Secretary Schlesinger's concurrent decision to take advantage of a temporary natural gas glut for utility and industrial boiler use not only reversed a long-standing policy of husbanding the premium fuel for higher priority uses such as residential heating, but also made the Department's dire warnings of an impending natural gas shortage sound hollow.⁸²

⁷⁷O'Leary Testimony, at 7; DOE Reply Brief, at 10; and Opinion 69, at 11.

⁷⁸FERC Staff Brief, at 47.

⁷⁹O'Leary Testimony, at 10.

⁸⁰*Ibid.*, at 7.

⁸¹See Opinion 69, Holden, at 9, and GM Brief at 66-67.

⁸²See DOE Reply Brief, at 4-7 and FERC Staff Brief, at n. 47.

As indicated above, the problems that DOE created for the GP project contributed to Judge Zimmet's rejection of the GPA proposal. DOE's intervention was, however, ultimately a success. On November 21, 1979, overriding the objections of staff counsel and dissenting Commissioner Matthew Holden, FERC reversed the Zimmet decision by a 2-1 Commissioner vote and approved the consumer financing package with minor modifications.⁸³

The obvious question is how FERC's Staff Counsel, law judge, and Commissioner Holden on the one hand and a majority of commissioners on the other could differ so markedly in their interpretation of the same set of facts. To at least one intervenor, there appeared to be "no rational connection between the facts found and the choice made."⁸⁴ The implicit accusation was that the FERC commissioners, all of whom were Carter appointees, had either caved in to Administration pressure, or, even worse, had collaborated with DOE and the project sponsors to the detriment of the gas customers.⁸⁵ Two additional issues were thus thrust into the GP case: (1) how independent is (or should) the FERC be? and (2) what responsibility does it have to consumers whom the Commission is entrusted to protect?

D. *The Federal Energy Regulatory Commission*

Staff Counsel. At the unwavering opposition end of what appears to be a broad spectrum of opinion *within* FERC, the Commission Staff Counsel ("staff") found the consortium's proposal to be unacceptable on both economic efficiency and equity grounds. It rejected DOE's contention that there might be a future gas shortage and found no need for "substantial supplies of coal gas" in the next decade.⁸⁶ It also argued that on a discounted cash flow (DCF) basis, GP would "not produce competitively priced gas,"⁸⁷ and further rejected the argument that the informational or "research, development and demonstration" benefits of the project [were] sufficient to justify its costs.⁸⁸ Finally, while it agreed with DOE that the nation required insurance against foreign oil dependence, Commission Staff suggested that a "domestic coal gas industry may not be the best" insurance policy and that even if it were, the beneficiaries of that policy (*i.e.*, the taxpayers) should pay the "premium" rather than ratepayers.⁸⁹

One must laud the Staff for bringing at least some of the economic considerations into the open; there appears, however, to be ample room for a reasonable dispute with many of their contentions. With natural gas production roughly double that of discovery rates, reserves rapidly dwindling, the threat of curtailments still a reality in gas markets, and a growing reliance on less secure foreign sources of gas,⁹⁰ one might find it difficult to accept the Staff's assertions that there will be sufficient gas supplies in the coming decade and that there is no gas shortage. Similarly, the Staff's DCF analysis of the economics of coal gas might

⁸³Opinion 69.

⁸⁴Brief of Petitioner, General Motors Corporation, Office of Consumers' Counsel, *et al.*, *Petitioners*, Federal Energy Regulatory Commission, Respondent, U.S. Circuit Court of Appeals, D.C. Circuit, at 55 (hereinafter, "GM Brief").

⁸⁵GM Brief, at 55.

⁸⁶FERC Staff Brief, at 60.

⁸⁷*Ibid.*, at 72.

⁸⁸*Ibid.*, at 81.

⁸⁹*Ibid.*, at 93.

⁹⁰Jensen Associates, *op. cit.*

easily lead to an opposite conclusion under different discount rates or higher oil prices. Moreover, if one adds to the market price of gas the \$0.65 to \$9.73 "import premium," suggested in Section II (see footnote 19 for an illustrative calculation), then the social marginal cost of gas becomes competitive for most ranges of the cost estimates.

In addition, the rejection of the "informational benefits" of the project as insufficient justification for GP does not appear to be based on any formal cost-benefit analysis or existing quantitative estimates; rather it is merely argued qualitatively. This may also be applied to the Staff's suggestion that there were other "insurance policies," such as a strategic petroleum reserve, that might be cheaper than developing the coal gas option. While it may be true, no quantitative analysis or evidence on the relative economics of such other policies was used to substantiate the assertion.⁹¹

Given this range of objections to the Staff's arguments, it is perhaps not surprising that Judge Zimmet chose to base his objections to the GPA proposal on equity considerations rather than economics. The Staff's failure to make the strongest economic case, along with Judge Zimmet's failure to state the economic considerations clearly, however, left the door open to the Commissions' reversal.

The FERC Commissioners. In overturning the Zimmet decision, the FERC Commissioners appeared to favor a more pragmatic approach to the consortium's proposal, arguing that:

[T]he law judge may be correct . . . that since the project eventually may benefit the entire country, the costs would best be shared by all potential beneficiaries. The matter is *academic*, however because we do not have before us a proposal involving all taxpayers or all gas ratepayers and that option is not in our power to order.⁹² (emphasis added)

It is tempting to challenge the point that consideration of government financing can be dismissed as "academic" on purely legal grounds. For example, in *City of Pittsburgh v. FPC*, the court ruled that:

[t]he existence of a more desirable alternative [e.g., government financing] is one of the factors which enters into a determination of whether a particular proposal would serve the public convenience and necessity. That the Commission has no authority to command the alternative does not mean it cannot reject the proposal [i.e., consumer financing].⁹³

It is equally true, however, that when the costs are not "shared by all potential beneficiaries," the outcome is likely to be a non-academic distortion of resource allocation—a fact that Opinion 69 ignores.

While the Commissioners did agree with the Commission Staff, the Law Judge, and indeed with DOE, the consortium, and opposing intervenors that government financing was preferable, they chose, as DOE had, to endorse consumer financing as an expedient second best solution.⁹⁴ In defense of that position, the Commissioners argued:

Wider sponsorship would have been preferable to provide a wider dispersion of costs. Nevertheless, it is our opinion that the existing sponsorship is adequate to permit inclusion of costs of this project in the rates . . . The key consideration is not *ideal equity* as a result of a perfect matching of costs and benefits, but, rather, whether there is sufficient sharing of the risks and responsibilities such that no single customer will be required to bear unreasonable costs or risks⁹⁵ (emphasis added).

⁹¹FERC Staff Brief, at 95.

⁹²Opinion 69, at 45.

⁹³*City of Pittsburgh vs. FPC*, 99 U.S. Court of Appeals, D.C. 113, 237 F.2d 741 (1956).

⁹⁴Opinion 69, at 46.

⁹⁵*Ibid.*

Again, from the viewpoint of economics, one must question the Commissioners' omission of any reference to "ideal efficiency" since the failure to attain a "perfect matching of costs and benefits" suggests at least a potential misallocation of resources.

Regarding FERC's suggestion of an unobtainable "ideal equity," however, one wanders again into the nether realm of a reasonable disagreement among reasonable men. While the Commission Staff, the Law Judge, and Commissioner Holden viewed consumer financing as inequitable, the Commissioners simply did not. The issue is of course open to debate, but implicit in the Commissioners' reversal is another judgement, namely, that FERC was the proper forum in which to conduct the debate. But to do so, FERC not only significantly extended existing precedent, but also had to bend several of its rules to what Commissioner Holden argued were their breaking points.⁹⁶

First, there is the issue of the CWIP-type "surcharge." While the use of CWIP on economic grounds is theoretically justified (See Section II), FERC has traditionally rejected its use.⁹⁷ Dissenting Commissioner Holden found FERC's break with this precedent to be "neither sufficiently analyzed nor sufficiently justified."⁹⁸ Moreover, FERC readily acknowledged that "[t]he proposed consumer guarantee . . . has almost no precedent in . . . the jurisdiction of this Commission,"⁹⁹ admitting that it involves "an atypical sharing of costs and risk."¹⁰⁰ It is clear, then, that approval of the GPA package represented a significant expansion of FERC's regulatory boundaries. The substantive element of that expansion was to act as an agent, shifting the risks and financial burdens from the private sector and government and onto consumers.

Second is the issue of the manner in which the project was classified as "jurisdictional." We have already noted that in order to squeeze itself under FERC's regulatory umbrella, ANR had to arrange the sale of non-jurisdictional synthetic coal gas only after it had been commingled with jurisdictional natural gas. In addition, in order to justify its approval of the surcharge, FERC had to accept the consortium's definition of the project as that of a "demonstration" plant, since under its recent order No. 566 only those projects which were of a "research, development, and *demonstration*" nature would be eligible to use such a surcharge.¹⁰¹ The controversy swirling around that acceptance lays bare much of the underlying politics of the proposal. In every application before the FERC except the consortium's last proposal, GP had been described as a "gas supply project."¹⁰² It was only after DOE entered the negotiations and created the consortium concept that the project was redefined as a "demonstration" plant.¹⁰³ The obvious question is whether this redefinition was merely contrived so that GP

⁹⁶See Opinion 69, Holden.

⁹⁷*Ibid.*, at 12-13.

⁹⁸Opinion 69, Holden, at 13.

⁹⁹Opinion 69, at 60.

¹⁰⁰*Ibid.*

¹⁰¹See footnote 63 to this article.

¹⁰²FERC Staff Brief, at 97.

¹⁰³*Ibid.*

could qualify for the surcharge or whether it truly was a demonstration plant. Commissioner Holden alluded to the former possibility when he said:

[T]he expanded demonstration concept becomes a basis for public convenience and necessity determination, with no rigorous (or even clearly indicated) criteria for determining what is to be demonstrated, or when a demonstration has succeeded or failed."¹⁰⁴

FERC's actions in the GP case raise several issues. On the one hand, the Commissioners who voted to overturn the Zimmet decision and approve consumer financing offered cogent, if perhaps not totally convincing, equity and national security arguments to justify their position. On the other hand, there appears to have been little attention paid to the economic implications of deviating from the "ideal" solution of government financing. The Commissioners also demonstrated a willingness to bend, and at times extend, the existing rules and procedures (and implicitly the regulatory authority) of the Commission to accommodate the GP proposal. To Commissioner Holden, the end result was that "the Commission . . . adopted a course . . . which is identical to the course DOE proposed. The functional result is to substitute Commission discretion for legislative [*i.e.*, Congressional] discretion."¹⁰⁵

E. *General Motors*

One intervenor in the GP case strongly disagreed with FERC's assertion that consumer financing involved "sufficient sharing of the risks and responsibilities such that no single customer will be required to bear unreasonable costs or risks."¹⁰⁶ That was General Motors (GM), one of the consortium's single largest gas customers. To GM, FERC's approval of the GP proposal meant several million dollars per year would be added on its gas bill during GP's construction period and millions more if the project failed. Joined by the Ohio Consumers Counsel, the Public Service Commission of New York, and the State of Michigan in the court challenge, GM filed a brief on May 30, 1980 requesting that the U.S. Court of Appeals overturn FERC's ruling.¹⁰⁷

The legal arguments set forth in that brief by and large recapitulated the major reasons why FERC staff, the Administrative Law Judge, and dissenting Commissioner Holden opposed consumer financing. In addition, GM made several points that help further crystallize the economic implications of consumer financing as well as the "proper" role of regulation, and particularly FERC, in U.S. energy development.

First, in absolving the project's sponsors from any builder's risk, consumer financing distorted incentives to utilize resources efficiently, GM arguing that:

The surcharge coupled with the guarantee of the return of and on equity . . . regardless of cost overruns or project failure removes valuable protection against imprudent expenditures."¹⁰⁸

¹⁰⁴Opinion 69, Holden, at 11.

¹⁰⁵Opinion 69, Holden, at 7.

¹⁰⁶Opinion 69, at 46.

¹⁰⁷GM Brief.

¹⁰⁸GM Brief, at 67.

Second, GM reiterated that since the project was to provide a synfuels insurance policy for the nation, it should be the taxpayers, and not the ratepayers who pay the “insurance premium.” In fact, both FERC and DOE agreed with that principle. FERC had rejected government financing as “academic,”¹⁰⁹ however, because Congress had (allegedly) not provided the funds while DOE chose ratepayer financing as the expedient alternative since, in its judgement, it could “not afford to delay th[e] project.”¹¹⁰ To Commissioner Holden, such an “end run around the Congress unnecessarily substitute[d] the Commission’s judgement for legislative judgement.”¹¹¹

GM saw, however, a different end run, namely, that of DOE around its own budget. If consumer financing were approved, it would clearly “set a precedent for future high-cost supplemental gas supply projects.”¹¹² Using FERC’s regulatory apparatus, DOE would then have an effective, but effectively hidden means of forcing consumers to subsidize future energy development. The strongest evidence that FERC and DOE may have been seeking off-budget financing for energy development may be found in the observation that:

At the very time FERC summarily dismissed loan guarantees as ‘academic,’ Congress had already provided DOE with the means to grant loan guarantees to Great Plains.¹¹³

Specifically, on February 25, 1978, Congress amended the Federal Nonnuclear Energy Research and Development Act (FERDA), empowering DOE to provide loan guarantees to projects such as GP.¹¹⁴ On November 7, 1979—two weeks *before* FERC approved consumer financing—Congress passed legislation which contained the first appropriations for FERDA and which authorized DOE to make up to \$1.5 billion in loan guarantees without additional Congressional approval. FERC, however, failed to mention in Opinion 69 that such events had occurred, making consumer financing not academic, but rather, “imminent.”¹¹⁵

As a final point, GM challenged what it perceived as an attempt to expand the role of FERC as a regulatory body, arguing that the discretion FERC exercised in approving consumer financing stepped outside the bounds of both its ratemaking jurisdiction and its primary responsibilities to consumers. While acknowledging that the project might well be in the national interest,¹¹⁶ GM argued that the methods by which it would be built were clearly not in the taxpayers’ interest;¹¹⁷ according to the Supreme Court’s ruling in *NAACP v. FPC*, FERC did not have “a broad license to promote the general public welfare,”¹¹⁸ nor did it have “a

¹⁰⁹Opinion 69, at 45.

¹¹⁰Opinion 69, Holden, at 5.

¹¹¹GM Brief, at 60.

¹¹²*Ibid.*, at n. 167.

¹¹³*Ibid.*, at 58.

¹¹⁴Department of Energy Act of 1978, § 207(b) and Pub. L. No. 95-238, 92 Stat. 47, at 61 (1978), amending the Federal Non-Nuclear Energy Research and Development Act, by adding 42 U.S.C. § 5919.

¹¹⁵Office of Consumers’ Counsel, et al., v. Federal Energy Regulatory Commission, U.S. Court of Appeals, D.C. Circuit, December 8, 1980, at 28 (hereinafter “Final Decision”).

¹¹⁶*See* GM Brief.

¹¹⁷*Ibid.*, at 36-37, 48-49.

¹¹⁸*Ibid.*, at 52.

roving mandate to serve the 'public interest.'"¹¹⁹ Its purpose was rather to "promote the orderly production of plentiful supplies of . . . natural gas at just and reasonable rates."¹²⁰ GM felt that:

By requesting ratepayer guarantees . . . FERC has crossed the fine line between ratemaking and taxation."¹²¹

Commissioner Holden offered an even more clear statement of the principle that FERC's regulatory apparatus had been established to protect consumers from the specific "market failure" associated with the gas industry's tendency towards natural monopoly and exploitation, and not from the more general market failures associated with national security and economic externalities:

To base rates upon some more diffuse benefits, of the type economists would call "public goods," tends to erode the conceptual distinction between rate-making and taxation.¹²²

F. *The U.S. Circuit Courts of Appeals*

On December 8, 1980, the U.S. Circuit Courts of Appeals overturned FERC's approval of the GP financing package, ruling that:

Opinion 69 exceeded the Commission's statutory authority because it attempted to create a rate-payer financing package for the construction of a commercial-size coal gasification plant despite the fact that its rate-setting and certifying powers were not granted to it for that purpose; and because it purported to regulate the construction and operation of such plant despite the fact that FERC has no regulatory jurisdiction over any aspect of synthetic gas development prior to its commingling with natural gas.¹²³

Thus, from a long list of arguments in economics and equity against consumer financing, the Court chose to reject its use on the point of law that FERC did not have the statutory authority or the legal jurisdiction to regulate synthetic gas. The result is that only one of the two major issues that arose in the GP case have yet been settled.

To the question of what is the proper regulatory role of FERC in financing U.S. synthetic fuels development, the courts have replied that there is none. In its view, FERC has neither the authority nor the ability to evaluate and facilitate the financing of synthetic fuels projects. In the case of GP,

Congress has specifically authorized a different governmental entity—the Synthetic Fuels Corporation—to provide governmental support for risky synfuels projects, including coal gasification plants. By comparison, FERC's certification and rate-setting tools seem inappropriate for that task.¹²⁴

and

FERC was never given the job of developing a "comprehensive strategy" for developing the nation's synfuel industry. It possesses no expertise in making determinations regarding the relative merits of different synfuels processes, methods, or technologies. Nor can it fairly and freely evaluate the various financing strategies available in theory for particular synfuels plants and select those best suited for each project. Its statutory authority is limited to rate setting on the basis of applications presented to it.¹²⁵

¹¹⁹*Ibid.*

¹²⁰*Ibid.*, at 52-53.

¹²¹*Ibid.*, at 52.

¹²²Opinion 69, Holden, at 4.

¹²³Final Decision, at 30-31.

¹²⁴Final Decision, at 35.

¹²⁵*Ibid.*, at 38.

Moreover, the court also castigated FERC for attempting to expand its regulatory authority and its collateral “end run” around the Congress, delivering the admonishment that:

[A]ppropriate respect for legislative authority requires regulatory agencies to refrain from the temptation to stretch their jurisdiction to decide questions of competing public priorities whose resolution properly lies with the Congress.¹²⁶

Despite the clear resolution of one major issue in GP, the court’s decision leaves largely unanswered the other, equally critical, issue of consumer financing. By rejecting FERC’s use of consumer financing on the grounds that GP was a non-jurisdictional synthetic fuels plant rather than on more general principles of equity or economics, the court may have left the door open for its future use. For example, the decision does not expressly preclude the sponsors of jurisdictional natural gas projects from seeking consumer financing from FERC.¹²⁷ Nor does it necessarily preclude FERC from granting consumer financing to GP (or a project like it) should Congress pass legislation extending the Commission’s jurisdiction to synthetic gas—as GP proponents have already proposed.¹²⁸ Finally, the decision does not establish a clear precedent with which to judge the issue of consumer financing for other than synthetic gas projects when it appears again (as it surely will) in a court of law.¹²⁹

IV. POLICY IMPLICATIONS

The issues raised in the GP controversy have broad implications for financing future U.S. energy development. The large scale and high risks of the project made its economics dubious for the builders. At the same time, the national security and informational benefits that might have resulted from the project’s successful demonstration made the project arguably in the public interest. This is a situation we as a nation are likely to face over and over again in the coming decades as we confront the necessity for building the Alaskan natural gas pipeline, additional synfuels plants, fusion generators, solar powerplants, and other risky projects requiring large capital investments. The obvious questions are how should policymakers respond and what principles should guide that response?

¹²⁶*Ibid.*, at 40.

¹²⁷In proceedings prior to the issuance of the Final Decision, FERC actually approved a limited form of “consumer-assisted” financing which is still in effect. Specifically, tariff provisions providing for customer payment of the cost of service of a project in the case of service interruption, including debt costs and a portion of equity return, were approved by FERC for the Alaska Natural Gas Transportation System. FERC, Order No. 31, Determination of Incentive Rate of Return, Tariff and Related Issues (June 8, 1979), modified in other respects by Order No. 31-B on rehearing (September 6, 1979). The question of shipper passthrough of these costs to their customers was not before FERC and therefore not ruled upon, although FERC indicated its basic agreement with this concept at that time, Order No. 31, mimeo, pp. 149-150. This “consumer-assisted financing” is not strictly analogous to consumer financing as proposed in GP, however, where consumers were to assume risks prior to the commencement of service through the surcharge, noncompletion guarantee, and other features of the package; and these orders, issued by FERC, have not been reviewed by the courts in light of the Final Decision.

¹²⁸*The New York Times*, December 11, 1980, D6.

¹²⁹While the Final Decision does provide the precedent that FERC has no statutory authority to approve consumer financing for non-jurisdictional synthetic gas projects, it remains unclear what the ramifications of the Final Decision will finally be for consumer financing of natural gas projects. The closest the court came to indicating its views on the principle of consumer financing was to suggest that at least certain features of the GP financing package, e.g., the surcharge, were “questionably” in the ratepayers’ interests. Final Decision, at 37-38. Since it is the primary role of FERC to protect ratepayers, that is at least a small legal hook on which to hang an argument against ratepayer financing if it could be shown that such financing was not in the ratepayers’ interest. Final Decision, at 38. Thus, even though technically the Final Decision deals only with synthetic gas projects, the decision is sufficiently broad to assure it will at least be cited in the future to argue against the consumer financing of natural gas projects.

From an examination of the economic and legal arguments in the GP case, it is clear that government financing was not only the most equitable, but also the most efficient, solution to finance GP. It is equally clear that this "ideal solution" ran afoul of pragmatic corporate efforts to facilitate project financing, Congressional politics, and bureaucratic maneuvering.

The project's sponsors sought consumer financing as an expedient method of obtaining funds for GP because the Congress initially turned down their bid for government financing. They continued to seek consumer financing because DOE told them that would be the only way it would support the project. Like DOE, the sponsors viewed FERC's regulatory apparatus as a "capturable" tool—a risk-shifting device to help them obtain financing.

Similarly, DOE supported consumer financing because it was the most expedient alternative—a "necessary evil" to facilitate essential synfuels development in the face of Congressional inaction. Later, however, as Congress moved to make funds available for synfuels, DOE continued to insist on consumer financing. Perhaps this was a way of husbanding appropriated funds, or perhaps a way to legitimize consumer financing as an "off-budget" means of financing future energy development.

FERC approved consumer financing apparently because it agreed with DOE that rapid synfuels development was in the national interest. It laid claim to the authority and responsibility of pursuing the public interest by bending a number of its own rules; in doing so, it lost credibility as an arguably "independent" regulatory agency, and its lost authority, as its powers were truncated by the courts.

Finally, the courts correctly rejected the use of consumer financing in Great Plains. However, they did so, not by ruling on the principle of consumer financing, but rather by denying FERC the statutory authority to regulate synthetic gas. From an economist's view, this is perhaps the most disappointing aspect of the Great Plains case, for the court ignored a golden opportunity to articulate and employ economic principles that will no doubt underlie future legal discussions of appropriate financing options for certain energy projects. Given this nation's serious energy problem and the long list of multi-billion dollar energy projects that have been proposed to solve it, the question of who should finance energy development is, however, an important one, and economic theory provides a useful set of guidelines as to which option is appropriate for any given project. As a conclusion to this paper, those guidelines are worth restating.

- Private financing is the most efficient method of funding investment when the assumptions of perfect competition hold or are reasonably well-approximated. Put another way, in the absence of market failure(s), private financing should lead to the most optimal allocation of investment funds.
- Consumer financing has almost equally attractive efficiency properties under the assumption of no market failures. The major qualifier, which is particularly important for projects involving a high degree of cost uncertainty, is that shifting the financial burden to consumers may reduce the builder's incentives to minimize costs or, as with GP, complete a project.

Thus, in the absence of market failures, the choice between private financing and consumer financing rests on two judgements: (1) the efficiency consideration of whether shifting the risk to consumers will significantly raise costs; and (2) an

important equity consideration, is it more “fair” for builders or consumers to bear the risks and financial burdens?¹³⁰

- Government financing is, however, clearly preferred on both equity and efficiency grounds to either private or consumer financing when there is a potential for significant market failures.

Positive externalities, *e.g.*, informational benefits or savings associated with reducing the “oil import premium,” should be internalized through government subsidies to insure a sufficient level of investment. At the same time, government financing will avoid basic inequities such as might have occurred in GP where one-third of interstate gas consumers (and a much smaller fraction of the citizenry) would have been forced to pay for a project benefiting the nation. On that point, the principle is crystal clear: if the nation will benefit from a project, it should be the nation that should pay for it.

¹³⁰In such regulated industries as electric utilities, the choice may also depend on a more pragmatic consideration. In particular, the use of consumer financing devices such as allowing CWIP in the rate base may, in reducing risk, lower the cost of capital to a utility and thus save ratepayers money in the long run by reducing interest charges. See Robert Trout, “The Regulatory Factor and Electric Utility Common Stock Investment Values,” *Public Utilities Fortnightly* Nov. 22, 1979.