HARVARD UNIVERSITY
JOHN F. KENNEDY SCHOOL OF GOVERNMENT

Financing IGCC – 3 Party Covenant

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EXECUTIVE SUMMARY

This paper describes a 3Party Covenant financing and regulatory program aimed at reducing financing costs and providing a risk-tolerant investment structure to stimulate initial deployment of five to ten Integrated Gasification Combined Cycle (IGCC) coal generation power plants during this decade. The 3Party Covenant is an arrangement between the federal government, state Public Utility Commission (PUC), and equity investor[1] that serves to lower IGCC cost of capital[2] by reducing the cost of debt, raising the debt/equity ratio, and minimizing construction financing costs. The 3Party Covenant would reduce the cost of capital component of energy costs from new IGCC facilities by 34 percent and the overall cost of energy about 20 percent, making the technology cost competitive with pulverized coal (PC)[3] and natural gas combined cycle (NGCC) generation.

ES1. Integrated Gasification Combined Cycle Generation

IGCC is a power generation process that integrates a gasification system with a conventional combustion turbine combined cycle power block. The gasification system converts coal (or other solid or liquid feedstocks such as petroleum coke or heavy oils) into a gaseous "syngas," which is made of predominately hydrogen (H_2) and carbon monoxide (CO). The combustible syngas is used to fuel a combustion turbine to generate electricity, and the exhaust heat from the combustion turbine is used to produce steam for a second generation cycle. IGGC technology offers the potential to significantly improve generation efficiency and reduce air emissions from coal-fueled power plants, including sulfur dioxide (SO_2), oxides of nitrogen (NOx), particulates (PM), mercury (Hg) and carbon dioxide (CO_2).

Despite the worldwide commercial use and acceptance of gasification processes and combined cycle power systems, IGCC is not perceived to be a mature technology. Each major component of IGCC has been broadly utilized in industrial and power generation applications, but the *integration* of a gasification island with a combined cycle power block to produce commercial electricity as a primary output is relatively new and has been demonstrated at only a handful of facilities around the world. The overnight capital cost[4] of IGCC is currently 20 to 25 percent higher than PC systems and commercial reliability has not been proven. As a result, the $750 million investments required to build

[1] The "equity investor" would be either an electric utility company, or independent power company with a purchase contract with a utility, that provides the equity for a project.
[2] As used in this paper, the term "cost of capital" means debt interest and authorized return on equity.
[3] As used in this paper, the term "PC" means a power generation process that uses a super-critical, pulverized coal-fired boiler incorporating the latest emissions control technologies, including fabric filter baghouses or electrostatic precipitators for particulate control, flue gas desulfurization (FGD) for sulfur dioxide control, and selective catalytic reduction (SCR) to control oxides of nitrogen.
[4] As used in this paper, the term "overnight capital cost" means the bare cost of designing and building a power plant, including engineering, procurement, construction and contingencies, but not considering cost of capital.

IGCC facilities have not materialized despite significant public and private sector interest in the technology.

The objective of this report is to describe a program that could be used to support and stimulate commercial investment in an initial fleet of IGCC facilities by reducing investor risk and cost of capital. IGCC was selected as the focus of this paper because it represents an advanced technology for generating electricity with coal that is widely supported and could provide the basis for moving towards near zero-emissions coal generation.[5] The program will only be implemented if the federal government and participating states determine it is in the public interest to support commercial investments in IGCC power plants at this time.

ES2. Coal Electricity Generation in the U.S.

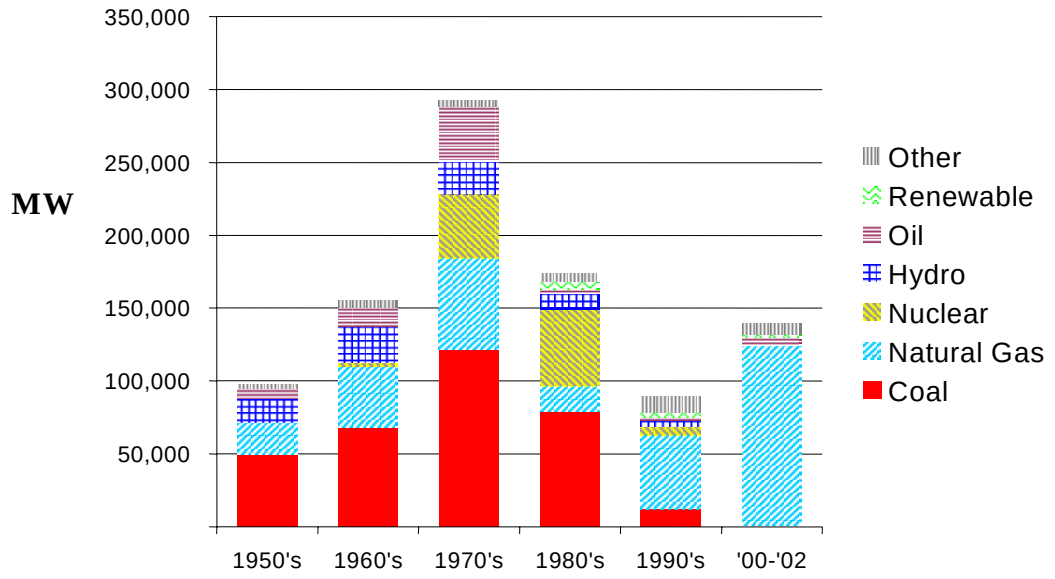
Coal is an abundant, relatively inexpensive, domestic resource with stable prices. Continued and expanded use of coal for electricity generation helps reduce U.S. dependence on imported fuels, relieve pressure on natural gas availability and prices that adversely affect other sectors of the economy, and support national energy and homeland security. However, continued or expanded use of coal electricity generation requires overcoming economic, financial, and environmental challenges that have virtually stopped construction of new coal generating capacity in recent years.

The U.S. has more coal reserves than any other country in the world. Estimated recoverable coal reserves in the U.S. are 275 billion tons, which is approximately 25 percent of world reserves and more than a 250-year supply at current consumption.[6] This share of world coal reserves is in sharp contrast to the U.S. share of world oil and natural gas reserves, which are estimated to be less than 3 percent and 2 percent of world totals, respectively.[7]

Historically, the U.S. has relied on coal for the majority of its electricity production. In 2002, just over 50 percent of U.S. electricity was supplied by coal-fired power plants. However, the share of coal electricity generation is declining because, as illustrated in Figure ES-1, very few new coal power plants have been built in the U.S. in the last decade. Since 1990, less than 6 percent of new generating capacity is coal-fueled, while over 75 percent is natural gas-fired. In 2000-2002 alone, 140,000 MW of new capacity came on line—90 percent is natural gas fired and less than 1 percent uses coal.

[5] This type of financing program could be effective for other technologies that have similar characteristics.
[6] National Mining Association, "Fast Facts About Coal," http://www.nma.org/statistics, Sept. 9, 2003.
[7] EIA, International Energy Annual 2001, Table 8.1.

Figure ES-1. U.S. Electric Generation Capacity Additions by On-line Date



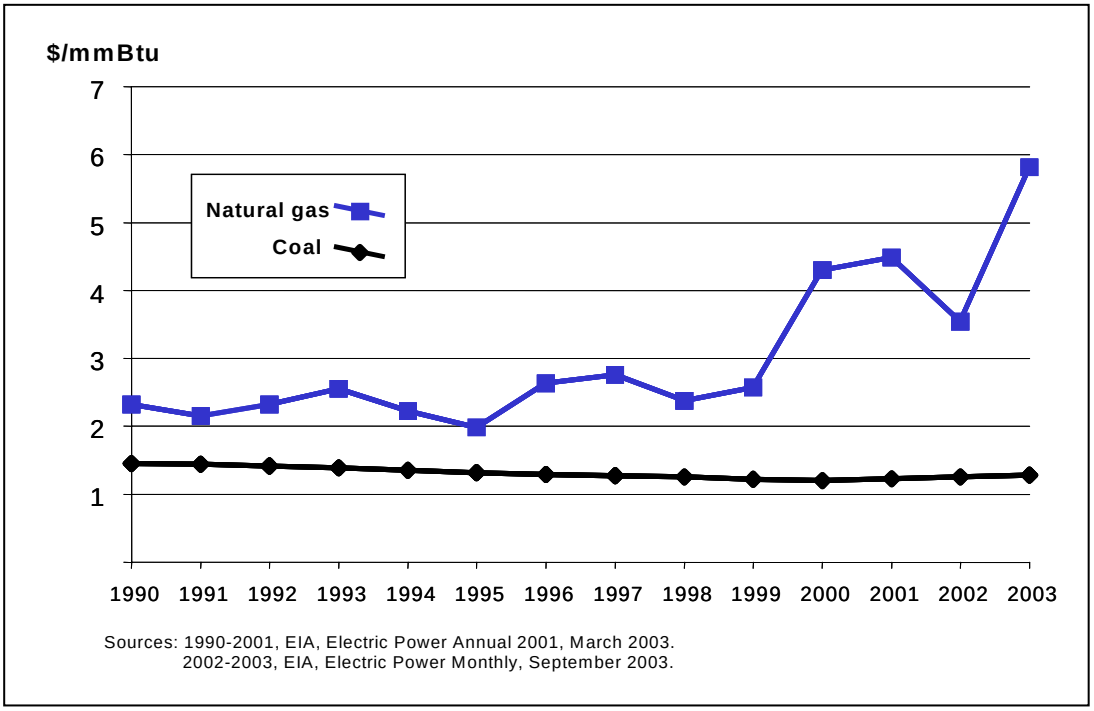
Source: Form EIA 860 "Annual Electric Generator Report," 2001.

Dependence on imported fuels is an important energy and national security concern. In 1972, just prior to the first Arab oil embargo, the U.S. imported 28 percent of its oil supply. In 2002, the U.S. imported 53 percent of its supply. In contrast, the U.S. is a net exporter of coal. Furthermore, up to a 90 day inventory of coal can be stockpiled at most generating plants. Coal generation supports U.S. energy independence and homeland security.

Coal use for electricity generation also helps relieve pressure on natural gas availability and prices that are adversely affecting other sectors of the economy. Natural gas prices in 2003 were two to three times above historic averages. These high natural gas prices caused widespread, adverse impacts on the U.S. economy and economic competitiveness, including significant job losses in manufacturing and chemicals industries.[8] The high prices also lead major oil and gas companies to announce plans for multi-billion dollar investments in infrastructure to increase imports of liquefied natural gas (LNG) and

[8] The economic consequences of high prices are described in the House Speaker's Task Force for Affordable Natural Gas report, which states: "Because domestically produced natural gas is so vital to our nation's energy balance, rising prices make our nation less competitive. When prices rise, factories close. Good, high paying jobs are imported overseas. Today's high natural gas prices are doing just that. We are losing manufacturing jobs in the chemicals, plastics, steel, automotive, glass, fertilizer, fabrication, textile, pharmaceutical, agribusiness and high tech industries." House Energy and Commerce, The Task Force for Affordable Natural Gas, Natural Gas: Our Current Situation (Sept. 30, 2003).

Figure ES-2 Average Delivered Fuel Prices to Electric Generators



chemicals from mid-eastern countries, which is a trend that will only exacerbate energy dependence and security concerns.[9]

As illustrated in Figure ES-2, another important characteristic of coal is price stability, which is in sharp contrast to the price volatility of natural gas. Since the mid-1990's, 175,000 MW of new natural gas generating capacity has been added at a cost of over $100 billion. In 2003, high natural gas prices and soft electricity markets rendered most of this new capacity uneconomic. Duke Energy announced in January, 2004 that it is taking a $3 billion write off from 2003 earnings, in large part because of the decline in value of its recent investments in natural gas generation.[10] In addition, many natural gas-fired power plants are being returned to lending institutions, making several money center banks significant owners of electric power generation in the U.S. Natural gas price volatility can significantly and unexpectedly alter the economics of natural gas electricity supply, whereas the stability of coal prices helps maintain electricity price stability.

Despite the many advantages of coal generation, adding new coal capacity requires overcoming significant challenges. Coal power plants require twice as much capital and take several years longer to construct than NGCC plants. These factors make coal plants more difficult to finance, subject to more regulatory uncertainty, and generally less economically attractive than natural gas plants. The financial challenges are particularly

[9] See *New York Times*, Oct. 13, 2003, p. W1. See also *New York Times*, Dec. 9, 2003, p. C4.
[10] See http://www.dukeenergy.com/news/releases/2004/jan/2004010701.asp

important today because the credit ratings of many electric power companies have declined in recent years. A November 2003 analyst report by Standards & Poors indicates that "the average credit rating for the electric utility sector is now firmly in the 'BBB' category, down from the 'A' category three years ago. Furthermore, prospects for credit quality remain challenging, as indicated by rating outlooks, 40 percent of which are negative."[11] Capital formation to build coal generation is a significant challenge for new capacity development.

The financial challenges facing coal generation are compounded by environmental concerns associated with its use. Coal combustion in traditional PC boilers produces harmful by-product emissions that raise local, regional, and global environmental concerns. In addition to SO_2, NOx, and mercury emissions that have local and regional impacts, CO_2 emissions from coal combustion are a concern because CO_2 is a greenhouse gas that has been linked to global climate change.[12] Continued and expanded coal use for electricity generation around the world is projected by the Energy Information Administration (EIA) to increase CO_2 emissions from coal combustion 45 percent by 2025.[13] Concern about this trend has helped energize opposition to new PC plant construction in the U.S. and is an important factor that has made it increasingly difficult to finance new coal power plant projects.

Addressing these environmental concerns requires deploying new technologies like IGCC that can produce electricity from coal with substantially lower air pollutant emissions, including the potential for carbon capture and sequestration. However, deploying IGCC requires a large capital investment in a technology that is currently more expensive and poses more risks than PC or natural gas technologies.

For IGCC to be perceived as mature, reliable, and economic, commercial experience needs to be gained through deployment. However, in order to attract the investment needed for deployment, the technology needs to be perceived as commercially mature, reliable, and economic. Helping resolve this dilemma through commercial deployment of an initial fleet of IGCC power plants is the principal objective of the 3Party Covenant financing program.

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[11] Ronald M Baron, *"U.S. Power and Energy Credit Outlook Not Promising; Few Bright Spots,"* Standard & Poors, Nov. 11, 2003.

[12] In its Third Assessment Report, the Intergovernmental Panel on Climate Change (IPCC) indicated: "Emissions of greenhouse gases and aerosols due to human activities continue to alter the atmosphere in ways that are expected to affect the climate;" IPCC, Third Assessment Report of Working Group I, Summary for Policymakers, p. 5.

[13] EIA, International Energy Outlook 2003, Table A-13, p.194.

ES3. 3Party Covenant

The 3Party Covenant is a financial and regulatory arrangement among a federal agency, a state PUC, and an equity investor to finance the development of an IGCC power plant. The three key elements are as follows:

1. *Federal Loan Guarantee:* The program for implementing the 3Party Covenant would be established through federal legislation authorizing a federal loan guarantee to finance IGCC projects. The terms of the federal guarantee would include allowing for an 80/20 debt to equity financing structure and would require that a proposed project obtain from a state PUC an assured revenue stream to cover return of capital, [14] cost of capital and operating costs.
2. *State PUC Approval Process:* States interested in participating in the program would voluntarily opt-in by adopting utility regulatory provisions for implementation by the state PUC concerning review, approval, and recovery of IGCC project costs,[15] which in some states would require legislative action to create appropriate enabling authority. Specifically, a state PUC (or other utility rate making authority in the case of public power), acting under state enabling authority, would agree to assure dedicated revenues to IGCC projects sufficient to cover return of capital, cost of capital, and operating costs (e.g., operation, maintenance, fuel costs and taxes).[16] The state PUC would provide this revenue certainty through utility rates in states with traditional regulation of retail electricity sales, or through non-bypassable wires charges in states with competitive retail electricity sales, by certifying that the plant qualifies for cost recovery and establishing rate mechanisms to provide cost recovery, including cost of capital. The certification by the state PUC would occur up-front when the decision to proceed with the project was being made and state PUC prudence reviews would occur as construction was ongoing, which would reduce the construction risks borne by the developer, avoid accrual of construction financing expenses, and protect ratepayers.
3. *Equity Investor*: The equity investor under the 3Party Covenant would be either an electric utility or an independent power producer that secures a long-term power contract with a utility. The investor would contribute equity for 20 percent of project costs and negotiate performance guarantees to develop, construct, and operate the IGCC plant. A fair equity return would be determined and approved by the state PUC before construction begins.

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[14] As used in this paper, the term "return of capital" means depreciation and amortization.
[15] As used in this paper, the term "project costs" means the cost of capital, return of capital, and operating costs.
[16] Depending on the ownership structure of the IGCC project, the Federal Energy Regulatory Commission (FERC) may also have a role.

State PUC certification and approval would create an assured, dedicated revenue stream to cover the construction, operating, and market risks of the IGCC plant. From the standpoint of the federal government, this assurance provides enhanced credit worthiness, strong protection against loan default, and a lower scoring requirement in the federal budget (see discussion below). From the standpoint of the equity investor, this assurance enables underwriting of the federally guaranteed loan in the context of a higher debt-equity ratio (80/20) than available under traditional utility financing terms (55/45). From the standpoint of purchaser of the long-term debt, the federal guarantee provides a "AAA" credit rating backed by the full faith and credit of the Unites States government.

It would be the responsibility of the state PUC, through a highly transparent and public process, to evaluate the IGCC investment decisions, including the feasibility of technology application, before costs could be passed along to ratepayers. The state PUC would first conduct a due-diligence certification process, through which it would publicly examine the need for power, reliability of the technology, terms and conditions (including performance guarantees and warranties) of contracts with the general contractor and equipment suppliers, level of redundancy to improve reliability (i.e., proposed redundancy of the gasifier systems), and any other technical or financial issue. After commencement of plant construction and thereafter, the state PUC would conduct ongoing prudence reviews of construction and operating costs. State PUC certification and prudence reviews would protect ratepayers and would be the basis for the state PUC determining whether to approve recovery of project costs.

Fundamental challenges addressed by the 3Party Covenant include:

1. *Challenge:* Equity investors are unwilling to invest $750 million to build IGCC power plants.

   3Party Covenant: Equity investment is reduced to 20 percent (from around 45 percent under traditional utility financing) through the terms of a non-recourse loan backed by a federal loan guarantee and an assured revenue stream approved by the state PUC that provides for a fixed equity return and repayment of debt.

2. *Challenge:* Equity investors are unable to raise attractive debt to finance IGCC.

   3Party Covenant: Provides federal loan guarantee with "AAA" credit rating backed by the full faith and credit of the United State government rather than relying on project risks or corporate credit.

3. *Challenge:* Significant construction and operating risk are associated with deploying new generation technology, particularly at the investment scale of IGCC.

   3Party Covenant: Requires up-front state PUC process to approve a stream of revenues to cover return of capital, cost of capital, and operating costs through rate adjustment clauses—the construction and operating risks are thereby shifted to and spread across ratepayers based on state PUC finding that doing so is in the public interest.

4. *Challenge:* Market risks in deregulated wholesale electricity markets make large capital investments in deploying IGCC unattractive.

   3Party Covenant: Removes market risks, after state PUC review and approval, through state PUC assured revenue stream.

5. *Challenge:* Overnight capital cost and resulting cost of energy are higher for IGCC versus PC for coal generation.

   3Party Covenant: Reduces IGCC energy costs to levels below new PC energy costs through financing savings from higher debt/equity ratio, lower cost of long-term debt, and minimizing of construction financing costs.

ES4. Cost of Energy Impact of 3Party Covenant

The 3Party Covenant program would reduce the cost of energy from an IGCC power plant 19 to 22 percent. The cost of energy reductions would result from:

1. Funding construction financing costs on a current basis by adding construction work in progress (CWIP) to the rate base and recovering these financing costs as they are incurred, rather than accruing these financing costs (which typically account for about 10 percent of total plant investment).
2. Lowering the cost of debt through the federal loan guarantee, which would reduce the interest charge from a typical 6.5 percent for a mid-grade utility bond in January 2003 to the 5.5 percent rate associated with a federal agency bond (essentially a 75 to 100 basis point reduction in the cost of long-term debt).
3. Providing for a significantly higher ratio of debt to equity, which would move from a traditional utility 55/45 ratio to 80/20 under the 3Party Covenant. The higher ratio would result in the replacement of 19 percent pre-tax equity (assuming an allowed after-tax return of 11.5 percent and 38.2 percent federal and state combined tax rate) with 5.5 percent federal debt for about 25 percent of project costs.[17]

These changes would reduce the pre-tax, nominal weighted average cost of capital of an IGCC plant from about 12 percent (traditional utility financing) to 8 percent (3Party Covenant), reduce the cost of capital component of energy costs by 34 percent, and reduce the total energy cost 19 to 22 percent. As a result, financing savings under the 3Party Covenant can offset up to $600/kW of overnight capital cost differential between an IGCC and PC power plant, or alternatively, these savings could offset almost a 20 percent decline in capacity factor.

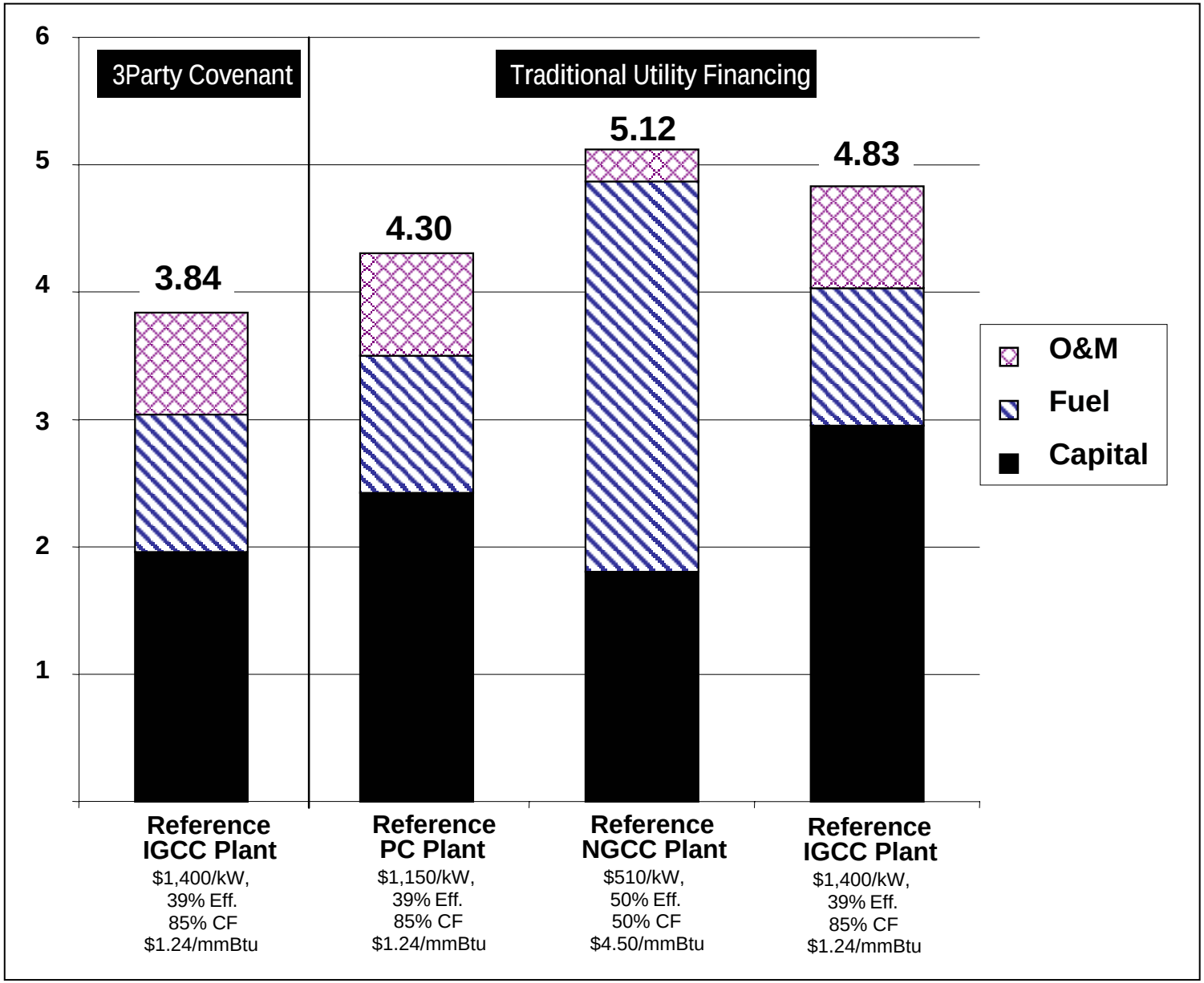
[17] The base case assumption of a 55 percent debt and 11.5 percent equity return under traditional utility financing is somewhat more conservative than the November 2003 Public Service Commission of Wisconsin order that approved construction of two PC plants with only 45 percent debt and a 12.7 percent after-tax equity return. See Wisconsin Electric Power Co., 228PUR4th 444, 2003 WL 22663829 (WISC. PSC Nov. 10, 2003).

Table ES-1 compares the cost of energy estimates for a Reference IGCC plant under the 3Party Covenant to the cost of energy estimates for Reference PC, NGCC and IGCC plants under traditional utility financing scenarios. **Table ES-1 and Figure ES-3 illustrate that the overnight capital cost of the IGCC plant is 22 percent higher than the overnight capital cost of the PC plant, but when the IGCC plant is financed under the 3Party Covenant, its energy cost is reduced 20 percent, resulting in an energy cost that is 11 percent less than the PC plant.**

Table ES-1. Cost of Energy Comparison of Reference PC and NGCC Plants Financed Traditionally to Reference IGCC Plant Financed with 3Party Covenant

	Traditional Utility Financing			3Party Covenant
	IGCC (2+1 gasifiers, ($1,400/kW; 85% CF 39% Eff.)	NGCC ($4.50 gas; 50% CF; 50% Eff.)	PC ($1,150/kW; 85% CF; 39% Eff.)	IGCC (2+1 gasifiers, ($1,400/kW; 85% CF 39% Eff.)
Design and Construction				
Plant Size (MW)	550	500	550	550
Total Plant Cost ($/kW)	$1,400	$510	$1,150	$1,400
Interest During Construction (CWIP*) ($/Kw)	$168	$19	$138	0*
Total Plant Investment ($/kW)	$1,568	$529	$1,288	$1,400
Operation				
Fuel cost ($/mmBtu)	$1.24	$4.50	$1.24	$1.24
Plant Efficiency (%)	39%	50%	39%	39%
Heat Rate (Btu/kWh HHV)	8,700.00	6,800.00	8,700.00	8,700.00
Plant Capacity Factor (%)	85%	50%	85%	85%
Annual Generation (MWh)	4,095,300	2,190,000	4,095,300	4,095,300
Financing				
Percentage Debt	55%	55%	55%	80%
Debt Interest Rate	6.5%	6.5%	6.5%	5.5%
Percent Equity	45.0%	45.0%	45.0%	20.0%
After tax Equity Return	11.5%	11.5%	11.5%	11.5%
Tax rate (Federal & State)	38.2%	38.2%	38.2%	38.2%
Pre-tax Equity Return	18.6%	18.6%	18.6%	18.6%
Pre-tax WACC	11.9%	11.9%	11.9%	8.1%
Levelized Carrying Charge	15.7%	15.5%	15.7%	10.4%
Estimated Cost of Energy				
O&M (cent/kWh)	0.80	0.25	0.80	0.80
Fuel (cent/kWh)	1.08	3.06	1.08	1.08
Capital (cent/kWh)	2.95	1.81	2.42	1.96
Cost of Energy (cent/kWh)	**4.83**	**5.12**	**4.30**	**3.84**

Figure ES-3. Cost of Energy Comparison between Reference IGCC, PC and NGCC plants



Important to the cost of developing a power plant is whether a project is being developed on a greenfield site, or is repowering an existing facility. Virtually all cost estimates for IGCC, including those presented here, assume a greenfield plant, but cost savings may be possible in repowering scenarios. Repowering of existing coal facilitates may allow developers to take advantage of existing coal handling, electricity interconnect, and steam turbine facilities that would reduce the cost of the project. Likewise, repowering of an existing natural gas combined cycle facility, assuming there was ample space and coal delivery capability at the site, could enable a developer to utilize the existing combined cycle power block, which accounts for roughly 30 to 35 percent of IGCC capital costs.

The financial savings under the 3Party Covenant could be used, in whole or in part, for establishment of reserve funds approved by the state PUC. The reserves could be used for several important purposes, including:

- Construction cost overruns;
- Early reliability or operating difficulties;
- Bond redemption to reduce ongoing costs to ratepayers; and/or
- Deployment of advanced technologies to mitigate CO_2 emissions (see discussion in Section 2.41 below).

Establishment of reserves would give additional comfort to investors and the federal government by adding another layer of protection onto the already solid foundation provided by the state PUC review, approval, and cost recovery procedures required under the 3Party Covenant, which are described below.

ES5. Requirements for State Participation

Participation in the 3Party Covenant would require a state PUC to establish procedures for review, approval, and cost recovery for qualifying IGCC facilities. These procedures would include the following elements:

1. Before any construction began, the state PUC would review the equity investor's detailed plans for the IGCC plant in order to determine whether the plant is in the public convenience and necessity. Determination of the public convenience and necessity would include consideration of several factors concerning the likely benefits and costs of the proposed IGCC plant and the need for base load power. Based on satisfactory determination, the state PUC would issue a certificate of public convenience and necessity for the new plant. In the certificate, the state PUC would permanently establish the return on equity for the project and approve the use of an adjustment clause for future recovery of incurred costs (including recovery, during construction, of costs of capital on construction work in progress (CWIP)).

2. After issuance of a certificate and as construction progresses, the state PUC would periodically conduct a prudence review on an expedited basis and approve the portion of the IGCC plant constructed during the preceding period. As each portion of construction expenditures (CWIP) was approved in the ongoing review, the cost of capital for the approved expenditures would become recoverable on an ongoing basis through, and would be reflected in, the approved adjustment clause.

   The duration of each periodic (e.g., six-month) review proceeding would be limited (e.g., to three months). As a result, cost of capital during construction would be recovered within a relatively short period (e.g., three to nine months) after incurrence of the associated capital expenditures. Since most of the cost of capital would be recovered on an ongoing basis during construction, a much smaller amount would be accrued, added to the capital investment in the plant, and ultimately recovered through amortization.

   As each portion of the construction expenditures is reviewed and approved, future recovery of these costs (including the related cost of capital) could not thereafter be challenged, in the absence of fraud or concealment. For example, issues concerning excessive cost, inadequate quality control, failure to complete, or inability to operate properly could not raised. In this way, the state PUC's review and protective approval would be updated during and after plant construction.

   Disbursement of the federally guaranteed loan would be coordinated with the ongoing review process. As each portion of construction expenditures was reviewed and approved for recovery through the adjustment clause, the federally guaranteed loan would be disbursed for the debt-funded share of that portion of the expenditures.

3. After completion and commencement of operation of the new IGCC plant, the state PUC periodically would conduct on an expedited basis a prudence review of the plant's operating costs during the preceding period. As the operating costs were approved in the ongoing review, the approved operating costs become recoverable on an ongoing basis through, and would be reflected in, the approved adjustment clause. Coordinated with the approval and pass-through of operating costs, the depreciation and amortization of the previously approved construction expenditures and related cost of capital also become recoverable through, and would be reflected in, the approved adjustment clause. The state PUC would require the ICGG plant owner to handle separately the revenue stream from the approved adjustment clause and place the revenues in a segregated account that could only be used to pay project costs, including cost of capital.

Under these procedures, state PUC certification and approval would create an assured, dedicated revenue stream to cover the construction, operating, and market risks of the IGCC plant.

ES6. 3Party Covenant Implementation

Implementation of the 3Party Covenant would require federal legislation authorizing loan guarantees for qualifying IGCC projects. As discussed above, the 3Party Covenant would reduce the risk of a federal loan guarantee program. The primary risk to the federal loan guarantee under the 3Party Covenant is the regulatory risk that state PUC determinations regarding cost recovery would be modified or overturned at a future date. This regulatory risk, which could be reduced or removed through state legislation or other state action, is much lower than the risk associated with merchant financing of a new, capital intensive technology.

Proposed energy legislation debated by Congress in 2003 provides a structure that could accommodate the 3Party Covenant by authorizing federal loan guarantees and tax incentives for IGCC plants and appropriations reflecting the federal budget scoring of the federal loan guarantees. The 3Party Covenant could be used to implement these authorizations and appropriations, if they were passed by Congress and if the Department of Energy or other implementing agency decided to use this approach.

Using the 3Party Covenant to implement federal loan guarantees for IGCC plants would reduce the risk, and therefore the budgetary impact, of such loan guarantees and, for a given amount of appropriations, would allow a larger number of IGCC plants to be covered. The budgetary treatment of federal loan guarantee programs is governed by the Federal Credit Reform Act of 1990 (FCRA). FCRA makes commitments of federal loan guarantees contingent upon appropriations in the year the program is established of enough funds to cover the estimated present value cost associated with the guarantees, which is determined by the risk of loan default. Default risks are typically evaluated by Moody's or Standard & Poors to make this determination. To the extent these rating agencies view the 3Party Covenant as reducing the risk of default by providing a state PUC approved revenue stream, the federal budget cost (scoring) of the loan guarantees would be reduced. If loan guarantees under the 3Party Covenant were scored at 10 percent of the principal amount guaranteed, for example, then $5 billion worth of loan guarantees could be provided (enough for about 6 projects) with a federal budget impact of $500 million.