

**PUBLIC SERVICE COMMISSION  
OF WEST VIRGINIA  
CHARLESTON**

Case No. 06-0033-E-CN

APPALACHIAN POWER COMPANY,  
dba AMERICAN ELECTRIC POWER

---

COMMISSION ORDER ON THE APPLICATION FOR  
A CERTIFICATE OF PUBLIC CONVENIENCE AND  
NECESSITY FOR A 629 MEGAWATT INTEGRATED  
GASIFICATION COMBINED CYCLE ELECTRIC  
GENERATING STATION IN MASON COUNTY.

---

March 6, 2008

## **TABLE OF CONTENTS**

COMMISSION ORDER .....	1
I. INTRODUCTION .....	1
II. PROCEDURAL HISTORY .....	3
III. SUMMARY OF TESTIMONY .....	4
Pre-filed Direct Testimonies .....	4
Pre-filed Rebuttal Testimonies .....	9
IV. DISCUSSION OF EVIDENCE AND ISSUES .....	14
A. APPLICATION FOR CERTIFICATE .....	14
1. Need for More Generation Capacity. ....	15
2. Type of Plant to be Constructed. ....	17
a. The Current Status of IGCC Technology. ....	17
b. Fuel Mix Adaptability. ....	19
c. Environmental and Emissions Controls. ....	19
3. Any Legal Requirement to Build and IGCC Facility. ....	21
4. Construction and Capital Cost. ....	22
5. When to Construct the Project. ....	25
a. Should Pending GHG Standards Delay the Project. ....	25
b. APCo GHG Efforts. ....	26
6. Plant Modifications to Prepare for CO <sub>2</sub> Capture/SCR. ....	27
a. Inclusion of CO <sub>2</sub> Capture. ....	28
b. SCR Technology for NO <sub>x</sub> Emissions. ....	30
7. Proposed Staff Conditions on Project Construction. ....	31
8. Commission Discussion Regarding Issuance of Certificate. ....	31
B. COST RECOVERY/PROJECT SURCHARGES .....	32
1. General Discussion of Construction Costs and Pricing. ....	33
2. The Pricing Mechanism under the Contract. ....	35
3. Cost Cap & Incentive Plan. ....	37
a. CAD Proposal. ....	38
b. Staff Position and Proposal. ....	38

4.	APCo's Proposed Project Surcharges. ....	40
a.	APCo Proposal. ....	40
b.	Staff Position and Opposition. ....	44
c.	CAD Position and Opposition. ....	45
d.	WVEUG Position and Opposition. ....	46
e.	APCo Response and Clean Coal Statute. ....	46
5.	Commission Position on Project Surcharges. ....	50
6.	The Project, Surcharges and the Public Interest. ....	51
a.	APCo Position on Public Interest. ....	51
b.	CAD Position on Public Interest. ....	53
c.	WVEUG Position on Public Interest. ....	55
d.	Staff Position on Public Interest. ....	56
e.	APCo Response on Public Interest. ....	57
7.	Summary by Commission of Public Interest. ....	60
8.	Continuing Prudence Review. ....	63
9.	APCo's Pursuit of Tax Credits and Incentives. ....	65
10.	Discussion of IRS Code §199 Deductions for Project. ....	67
11.	Demand Side Management Task Force. ....	67
12.	Proceedings before the Virginia State Corporation Commission. ....	68
V.	FINDINGS OF FACT .....	68
VI.	CONCLUSIONS OF LAW .....	77
VII.	ORDER .....	83

**PUBLIC SERVICE COMMISSION  
OF WEST VIRGINIA  
CHARLESTON**

At a session of the PUBLIC SERVICE COMMISSION OF WEST VIRGINIA in the City of Charleston on the 6th day of March, 2008.

CASE NO. 06-0033-E-CN

APPALACHIAN POWER COMPANY, dba AMERICAN  
ELECTRIC POWER, a public utility, Charleston, Kanawha County.

Application for a Certificate of Public Convenience and Necessity  
for a 600 MW Integrated Gasification Combined Cycle Electric  
Generating Station in Mason County.

**COMMISSION ORDER**

**I. INTRODUCTION**

The statutory charge to the Commission in this case seems deceptively simple - examine the Application (Application) for a Certificate of Convenience and Necessity (Certificate), and the supporting testimony and exhibits, filed by the State largest electric utility, Appalachian Power Company, dba American Electric Power (APCo), requesting a Certificate to construct a 629 megawatt (MW) Integrated Gasification Combined Cycle (IGCC) power plant (Project or Plant) in this State to meet APCo's need for additional baseload capacity. What makes the task appear even more elementary is that the Parties to this proceeding generally agree that the additional generation is necessary and appropriate. Further, none of the Parties questions in any significant and meaningful way the proposed location or the site for the Project or the construction of a coal-based IGCC plant.

While the Commission is cognizant of these favorable factors for the siting and approval of the Project, other factors have caused concern to the Commission in this proceeding. Among those concerns are that (i) even if the Project is brought in at or under budget, the Project's current estimated, but uncertain, cost would make it the single most expensive public utility plant project ever considered for certification by this Commission; (ii) the current legislative and regulatory attitude and uncertainty about greenhouse gas (GHG) emissions and the "future of coal" adds risk to the installation of coal-fired generation; (iii) the special ratemaking treatment requested by APCo as essential to facilitate the financing and construction of the Project will place an early and substantial rate burden

on the West Virginia customers of the Project; and (iv) the technology for the Project, including the IGCC (and the additional cost and uncertainty of the carbon capture capability of that Plant), while not untested, is nevertheless relatively new, particularly in large generating facilities, and has uncertain and unproven construction costs.

As reflected and supported in this Order and as shown at the hearing, given APCo's current level of electricity generation and the growing need for even more electricity in the AEP-East Zone<sup>1</sup>, APCo has made a strong case for the necessity for additional baseload generation. Further, the proposed plant location is owned by APCo, sits in a region with abundant natural resources and is easily accessed by available road, rail and river transportation. The Project is supported by many in the State who look with favor on adding new generation for APCo, including support from a dedicated labor force that favors the Project because it will add jobs to build and operate the Project and preserve employment within one of the State's backbone industries - coal production and processing. At the peak of construction, there will be 1,400 workers working on the Project, and there will later be 125 full-time jobs. See, Application, Ex. A. In addition, State legislative policy, as set forth in specific statutory provisions relating to the Commission, directs the Commission to "[e]ncourage the well-planned development of utility resources in a manner consistent with state needs and in ways consistent with the productive use of the State's energy resources, such as coal" (W.Va. Code §24-1-1) and encourages the Commission to "authorize rate-making allowances for electric utility investment in clean coal and clean air technology facilities . . ." (W.Va. Code §24-2-1g).

In light of these considerations, and following and examination of the Project and the extensive record in this proceeding as described below, the Commission approves and grants the Application of APCo for a Certificate to construct the Project as proposed by APCo in Mason County, West Virginia, and approves the use of the Project Surcharge cost recovery mechanism (Project Surcharges) in the manner and under the terms and conditions set forth in this Order.

---

<sup>1</sup>The AEP-East Zone is comprised of those companies integrated into AEP's eastern transmission pricing zone in Indiana, Michigan, Ohio, Kentucky, Tennessee, West Virginia and Virginia and include Appalachian Power Company, Columbus Southern Power Company, Indiana Michigan Power Company, Kentucky Power Company, Kingsport Power Company, Ohio Power Company and Wheeling Electric Company.

## II. PROCEDURAL HISTORY

On January 11, 2006, APCo applied for a Certificate to construct a 600 MW IGCC<sup>2</sup> electric generating unit adjacent to APCo's Mountaineer power plant near New Haven in Mason County, West Virginia, on a tract of land of approximately 70 acres owned by APCo that is bordered on the north by an existing coal storage area, to the west by an existing coal conveyor and railroad, to the east by a rail spur and the Ohio River, and to the south by the existing APCo power plant. Application at 1-5 and attachments; additional information filed by APCo on May 1, 2006, in support of Application at 9. The Plant will not provide new service or expand APCo's service area; instead, it will increase APCo's base generating capacity to meet its future public service responsibilities. Id. at 2.

Throughout this proceeding, the Commission granted various motions by APCo to toll the statutory deadline to process the Application. Pursuant to the latest Commission Order, the Commission is required to issue its decision on or before March 6, 2008. Commission Order of July 27, 2007 at 5.

On July 9, 2007, APCo filed a copy of the FEED study for the Project along with a Motion for Protected Treatment. On October 23, 2007, the Commission granted APCo's Motion for Protected Treatment of the FEED study because it contains trade secrets, although Parties to the case who have requested access have been allowed to review the FEED study under protective agreement.

On August 22, 2007, as revised by Commission Order dated August 27, 2007, the Commission required APCo to publish a notice of the filing of the Application, including notifying the public of the projected rate impact of the Project upon the customers of both APCo and its affiliate, Wheeling Power Company, and providing the opportunity for persons to participate in this case. APCo published the required notice one time in a newspaper of general circulation in each county in which APCo and Wheeling Power provide electric service.

On December 10, 11, and 12, 2007, the Commission conducted an evidentiary hearing on the Application. No members of the public appeared to speak either for or in opposition to the Project during the public comment portion of that hearing. References to the prefiled

---

<sup>2</sup> APCo originally requested approval of a 600 MW facility. After the case was started, APCo's Front End Engineering Design (FEED) study was completed and filed, and based on the FEED study, the Plant's capacity was determined to be 629 MW. Integrated Gasification Combined Cycle (IGCC) - In the IGCC process, coal is transformed into a synthetic gas under pressure and temperature. Heat recovered from the gasification and combustion turbine processes is then used to produce steam which is run through a steam turbine to generate additional electricity. The syngas is processed to remove impurities such as sulfur and particulates. The cleaned syngas is fired in a combustion turbine that drives a generator to produce electricity.

testimony and exhibits of the witnesses at the hearing will be as the exhibits were admitted into the record (such as "MWR Ex. 1 at 15-17"); references to the transcript of the hearing will be by page number (such as "Tr. at 4-6").

The only public comments filed in this proceeding were filed on December 7, 2007, by the Clean Air Task Force in support of the Project and on December 17, 2007, by Dallas and Linda Staten, who protested the Project.

On January 16, 2008, APCo filed Post Hearing Response Number 1, to supplement information provided during the evidentiary hearing regarding certain restricted stock units granted to certain AEP employees involved in the IGCC project.

The Parties<sup>3</sup> filed Initial Briefs on January 25, 2008, and Reply Briefs on February 4, 2008.

On March 5, 2008, the Trades Council petitioned for leave to file, as a post-hearing exhibit, a letter reflecting that AEP has agreed to the terms for a local worker agreement. Petition at 1, 2 & attachment.

### **III. SUMMARY OF TESTIMONY**

In this case, the Commission has reviewed 28 prefiled direct and rebuttal testimonies and exhibits of twenty witnesses, consisting of over 800 pages of record evidence, and as indicated, conducted three days of evidentiary hearings on this matter involving a transcript of nearly 650 pages. The following summary generally describes the testimony of the witnesses and additional references to the testimony are contained in the section captioned "DISCUSSION OF EVIDENCE AND ISSUES" starting at page 14 of this Order.

#### **Pre-filed Direct Testimonies**

**APCo** filed the direct testimonies of the following witnesses testifying generally on the matters indicated below.

**Dana E. Waldo**, testifying as the President and Chief Operating Officer of APCo, discussed why the Commission should determine that APCo's plan to construct the Project adjacent to the existing Mountaineer Generating Station in Mason County, West Virginia, is reasonable, and grant APCo a certificate for the Project. In addition, Mr. Waldo discussed APCo's request for the Commission to approve (i) the Project Surcharges that will provide

---

<sup>3</sup> "Parties" as used in this Order means APCo, West Virginia Energy Users Group (WVEUG), the Staff of the Commission (Staff), the Consumer Advocate Division (CAD), West Virginia State Building and Construction Trades Council (Trades Council) and Steel of West Virginia, Inc. (Steel WV).

for the recognition in rates of the ongoing Project finishing costs while the Plant is still under construction and (ii) full and timely rate recognition of the Plant after it is placed in commercial service. DEW Ex. 1.

**Michael W. Rencheck** was the Senior Vice President of Engineering, Projects and Field Services for American Electric Power Service Corporation (AEPSC), a wholly-owned subsidiary of AEP, and currently serves as Senior Vice President and Chief Nuclear Officer for AEPSC. Mr. Rencheck's direct testimony described and supported APCo's decision to propose the engineering and deployment of clean-coal IGCC technology in West Virginia. Mr. Rencheck summarized the interface his organization had with other AEPSC departments to determine the need for new baseload capacity, including the environmental challenges discussed by APCo witness John M. McManus, the age of AEP's existing operating fleet (including APCo's generating units), the various generation technologies reviewed by AEP, and the reasons why the IGCC technology provides an efficient and flexible means of supplying baseload generation environmentally adaptable over the life of the asset. Mr. Rencheck also addressed the reasons why APCo and AEP selected IGCC technology for the Proposal. MWR Ex. 1 at 3-4.

**Scott C. Weaver** is the Managing Director - Resource Planning and Operational Analysis for AEPSC. The purpose of Mr. Weaver's direct testimony was (i) to determine and demonstrate the need for overall capacity resources to meet the projected demand obligations for the AEP-East Zone, including APCo; (ii) to discuss the need for baseload capacity going-forward in 2012, such as the Project; (iii) to offer an overview of resource alternatives available to AEP-East and APCo to meet those needs, including Renewable Energy alternatives (Renewables) as well as Demand-Side Management/Energy Efficiency; and (iv) to set forth a risk-assessed capacity resource profile for the years 2008 through 2017 for the AEP-East Zone as well as the rationale and methodology for determining APCo's obligation to provide incremental capacity resources as part of its member obligation within the AEP Interconnection Agreement. SCW Ex. 1 at 2, 3.

**John M. McManus** is employed by AEPSC as Vice President - Environmental Services. Mr. McManus' direct testimony summarized APCo's environmental compliance program, the regulations to which it is subject, and the measures taken to comply with those regulations; discussed the new Clean Air Interstate Rule (CAIR) and the Clean Air Mercury Rule (CAMR) and the measures taken to comply with those rules; and discussed anticipated environmental regulations relevant to the decision to develop the Project. JMM Ex. 1 at 2.

**Dr. Paul Chodak** is employed by AEPSC as Director - New Generation. Dr. Chodak's direct testimony provided a technical description of the IGCC technology, discussed the benefits of coal gasification, and provided an overview of IGCC technology and processes involved in the Plant and a description of the proposed Plant. Dr. Chodak also described the differences between APCo's Plant as compared to previous IGCC installations; provided a definition of how the Plant will be "carbon capture compatible;" and described



the advantages of IGCC as compared to a pulverized coal plant from a current and future environmental emissions perspective. PC Ex. 1 at 2.

**William M. Jasper** is the Director - New Generation Projects for AEPSC. Mr. Jasper provided an overview of the process APCo has followed for its proposal to construct the Project. Mr. Jasper provided an overview of the FEED that GE/Bechtel performed in conjunction with AEP; discussed the cost estimates developed as a result of the FEED; and testified about the status of contract negotiations with GE/Bechtel. Mr. Jasper also summarized the current schedule and path forward for the Project. WMJ Ex. 1 at 3.

**Timothy P. Mallan** is employed by APCo as Manager - Environmental Affairs. Mr. Mallan discussed the environmental permits required for construction and operation of an IGCC plant, the pre-permitting activities conducted by APCo, and the status of APCo's environmental permits for the proposed Project. TPM Ex. 1 at 2.

**Terry R. Eads** is employed by APCo as Director - Regulatory Services for West Virginia. Mr. Eads described the method set forth in the Application for recovery of the West Virginia retail jurisdictional share of the costs of the Plant. Mr. Eads also provided estimates of the annual revenue requirement and the rate impact to West Virginia customers that the Project Surcharges proposed in the Application will produce during the construction period and during the first year that the Plant is in commercial operation. Mr. Eads described the proposed Project Surcharges and testified that APCo had received approval for a similar mechanism in Case No. 05-1278-E-PC-PW-42T. He also described the modification to the Project Surcharges that APCo is proposing for recovery of the costs of the Project in this case. TRE Ex. 1 at 4-7.

**Staff** pre-filed the direct testimonies of Edwin L. Oxley and Wayne M. Perdue.

**Edwin L. Oxley**, an Analyst for the Utilities Division of the Commission, addressed and presented the Staff recommendation regarding ratemaking for the Project. Mr. Oxley indicated that Staff opposed the Project Surcharges proposed for the Plant and stated Staff prefers traditional ratemaking treatment for the Project. Under that approach, APCo's ratepayers would pay rates that include the costs of the Project only after the Project is providing service to ratepayers. Mr. Oxley also testified that if the Commission granted a certificate to APCo certain conditions should be imposed. Staff Ex. 1 at 12.

**Wayne M. Perdue** is employed by the Commission as a Technical Analyst in the Engineering Division. In his direct testimony, Mr. Perdue presented the Engineering Division's technical position regarding the Application for the Project. The Engineering Division concluded that the Project would begin to satisfy the need to replace an aging fleet of coal-fired power plants and an additional installed capacity resource for both the APCo service territory and AEP-East Zone. In addition, Mr. Perdue stated that the Plant, even without carbon capture capability, would address the regulated environmental hazardous emissions at least as well or better than a newly-constructed pulverized coal technology

power plant and have a capacity factor equivalent to or better than its pulverized coal counterpart. In addition, Mr. Perdue stated that, if CO<sub>2</sub> emissions become regulated, the carbon capture technology might be more adaptable to an IGCC plant rather than retrofitting an aging existing coal-fired power plant. Mr. Perdue concluded that, even though the Project carries a higher total plant cost than others Staff has reviewed, the benefit of having a new baseload generating facility, with the potential for more advanced carbon capture technology, to replace aging generating facilities appears to outweigh retrofitting existing generation facilities with the less advanced post-combustion technology. Staff Ex. 3 at 13.

CAD pre-filed the direct testimonies of Byron L. Harris, William E. Powers, and David A. Schlissel.

Byron L. Harris is the Director of CAD. Mr. Harris presented the overall recommendation of CAD and stated why CAD opposes APCo's request for special ratemaking treatment (the Project Surcharges) for the Project; addressed other ratemaking alternatives that, in CAD's opinion, would provide APCo with appropriate economic incentives to undertake the Project while still protecting ratepayers; and recommended that the Commission require APCo to participate in a task force to determine whether APCo should more aggressively seek energy savings from energy efficiency measures. Mr. Harris stated that the Commission should grant the Certificate for APCo to construct the Project, but should include certain ratemaking conditions as a part of the Certificate. Mr. Harris stated that, because of the uncertainties regarding the actual construction costs of the Project and future regulation of CO<sub>2</sub> emissions, CAD does not recommend that APCo immediately begin construction of the Plant. On the other hand, CAD stated that the decision of whether to begin construction of the Plant should be left to APCo and that the Commission should require APCo to incorporate the necessary facilities into the Project to enable the cost-effective addition of equipment to capture CO<sub>2</sub> in the future at the Plant. CAD Ex. 1 at 3, 4.

William E. Powers, a professional Mechanical Engineer, is the principal in Powers Engineering. Mr. Powers evaluated APCo's proposal to build the Plant in Mason County. Mr. Powers found that, from a review of the available data, there is a need for APCo to add new generating capacity, but he also testified that it is not evident that there is a need for additional coal-fired baseload capacity, such as the Project proposed by APCo in this case. Mr. Powers testified that gas-fired peaking or intermediate capacity may provide a lower cost way for APCo to add capacity in the short term while the uncertainties concerning future carbon capture requirements are resolved. Mr. Powers added that if the Plant is built the Commission should require APCo to take actions to minimize the future cost of retrofitting the Plant to comply with carbon capture requirements. CAD Ex. 3 at 3.

David A. Schlissel is a Senior Consultant at Synapse Energy Economics (Synapse) in Cambridge, Massachusetts. Synapse is a research and consulting firm specializing in energy and environmental issues, including, *inter alia*, electric generation. CAD retained Synapse to assist in the review of the Application for the Project. In his direct testimony,

Mr. Schlissel concluded that (i) APCo has not adequately considered the risks associated with building a new coal-fired power plant in the analyses of the Project; (ii) the most significant uncertainties and risks associated with the Project are the potential for future federal restrictions on CO<sub>2</sub> emissions and further increases in the construction costs of the Project; (iii) it is important for APCo to justify the Project in light of coming federal regulation of GHG emissions and to reflect uncertainties and risks of that regulation and APCo should use a range of possible CO<sub>2</sub> prices in its economic analyses; and (iv) APCo should consider a range of possible costs in its analyses of the Project to reflect the potential for further construction cost increases. CAD Ex. 2 at 3.

WVEUG<sup>4</sup> pre-filed the direct testimony of Lane Kollen.

Lane Kollen is a utility rate and planning consultant and is the Vice President and a Principal of the firm of Kennedy and Associates. Mr. Kollen recommended that the Commission reject the Project Surcharge mechanism proposed by APCo for the reasons that (i) APCo has failed to establish the need for this exceptional form of rate relief because APCo is not in financial distress; (ii) the APCo proposal shifts the risk of both the construction costs and the construction schedule from APCo and its shareholders to the ratepayers, given the open-ended nature of the Project Surcharge proposal; (iii) the rate effects of the APCo proposal are speculative and unknown because the cost of the proposed facility is speculative and unknown, and APCo's cost estimates include only the cost of the Project itself; (iv) the APCo proposal harms ratepayers because it is more expensive on a net present value basis than the normal method of capitalizing the carrying costs on construction work in progress (CWIP) in the form of allowance for funds used during construction (AFUDC); (v) the APCo proposal is inequitable because it requires one generation of ratepayers to prepay the portion of the Project during the construction period and to prepay those costs before the Plant is used and useful in the provision of service; and (vi) the Project Surcharge methodology advocated by APCo is flawed and its quantifications of the rate impact significantly misstate the effects on ratepayers, even assuming there are no increases in the present cost estimate. WVEUG Ex. 1.

Trades Council pre-filed the direct testimony of Steve Burton.

Mr. Burton is the President of the West Virginia State Building and Construction Trades Council and Business Manager of the Tri-State Building and Construction Trades Council. The Trades Council supports the APCo Application to construct the Project and intervened to ensure that the construction and financing of the Project conform to the laws

---

<sup>4</sup> West Virginia Energy Users' Group is a state-wide association of large, energy-intensive industrial, chemical, manufacturing, and institutional concerns. In this proceeding, WVEUG is comprised of these companies: E.I. du Pont de Nemours and Company, Bayer Materialscience, Bayer CropScience, PPG Industries, Inc., and Air Products and Chemicals, Inc.

of the State and that the Project has a positive impact on the local and state economies, as well as being in the best interests of its members and ratepayers. The Trades Council is a labor organization that represents approximately 20,000 construction workers throughout West Virginia. Its membership includes ratepayers and employees who work for companies that construct facilities similar to that proposed by APCo in this case.

The Trades Council is working with AEP toward a project labor agreement for the construction of the Project and is confident that the construction of the Project represents significant work for local construction workers who are members of the Trades Council. Mr. Burton believes that the Project will have a very positive impact on the local economy and local employment. Trades Council Ex. 1.

### **Pre-filed Rebuttal Testimonies**

**APCo** pre-filed the rebuttal testimonies of nine witnesses: Dana E. Waldo; Michael Rencheck; Scott C. Weaver; Dr. Paul Chodak; William M. Jasper; Michael H. Kelley; Renee V. Hawkins; Bruce J Braine; and Terry R. Eads.

**Mr. Waldo** addressed many of the issues raised by the intervening parties in their respective direct testimonies. Specifically, Mr. Waldo testified that the need for baseload capacity was not questionable, and given the load forecasting and analysis and the lead time necessary to plan, permit, construct and bring on line new baseload capacity, there is no merit in postponing a baseload decision and filling in with various stopgap measures. DEW Rebuttal Ex. 1 at 2. Mr. Waldo also stated that, although the Project is comparatively more expensive than more conventional generating capacity, it will offer much greater advantages because it will be capable of significantly enhanced environmental performance, including the compatibility to be integrated with pre-combustion CO<sub>2</sub> capture. Id. at 3. Further, Mr. Waldo testified that it is not a fair or reasonable solution to impose a cap on the recovery of construction costs that could deny APCo full recovery of reasonably and prudently incurred costs to build the Project. Mr. Waldo argued that the Commission's power of oversight and review, coupled with APCo's proposed Project Surcharge rate mechanism, would enable ongoing monitoring on at least an annual basis. Id.

With regard to the criticisms of APCo's Project Surcharge mechanism, Mr. Waldo testified that the same characteristics that made the construction surcharges an effective ratemaking mechanism for other APCo projects are present here. Id. at 4. He also testified that APCo is not alleging financial distress as a basis for supporting the Project Surcharge in this case. He testified, however, that if some reasonable form of cost recovery assurance is not approved it will jeopardize the ability of APCo to move forward with the Project. Id.

Finally, Mr. Waldo argued that the Commission has been given a statutory directive in W.Va. Code §24-2-1g to encourage investment in projects such as the Plant. Mr. Waldo argued that this statute not only encourages clean-coal technology, but also directs the Commission to authorize ratemaking allowances for electric utility investments and provide

incentives to encourage investments in that technology. Id. at 5. Mr. Waldo added that the Project would create a clean coal power plant in West Virginia that is at the technological cutting edge of meeting the customers' increasing demands for reliable electric power supply and that would also take advantage of the mineral resources of the State and region. Id. at 6. According to Mr. Waldo, the Project would make a significant contribution to the economy of the State, create construction and permanent jobs in building and operating the Project and help to preserve employment in the coal industry. Id. Mr. Waldo argued that the advantages of the Project Surcharge mechanism proposed by APCo for recovery of Project costs are that it will encourage construction of the Project (which it is West Virginia's stated policy to encourage) and will enable financial responsibility for this Project to be assumed in a gradual and timely manner through rates and charges during construction, thus avoiding the rate shock of a single abrupt rate increase when the Plant is placed in service. Id.

**Mr. Rencheck** addressed the concerns raised in the direct testimony of CAD witnesses David A. Schlissel and William E. Powers about the selection of IGCC technology for baseload generating needs. Mr. Rencheck explained that the Plant is coal-based, not coal-fired. That combines the cost stability of coal, which is significantly less price volatile than natural gas, with the proven capability of pre-combustion carbon capture for future retrofit as CO<sub>2</sub> emissions become regulated. MWR Rebuttal Ex. 1 at 2. Post combustion capture of CO<sub>2</sub> from other technologies, such as pulverized coal or natural gas combined cycle, have not been proven on a commercial scale and are inherently less efficient than pre-combustion capture. Id. Although Natural Gas Combined Cycle (NGCC) does have a short-term advantage for the capture of CO<sub>2</sub> emissions, IGCC has the potential to separate and sequester CO<sub>2</sub> emissions at a significantly lower cost than conventional technologies for the longer term, using less energy to capture and store CO<sub>2</sub>. Id. at 3. Mr. Rencheck also stated that IGCC enjoys greater fuel flexibility than conventional coal or gas plants that can be employed to continue reliable generation of electricity in the event of a supply disruption or volatility for a particular fuel source. Id. at 4. Mr. Rencheck also argued that concerns about the price increase in power plant construction costs are not isolated to IGCC plants, and impact construction of all types of power generation facilities. Id.

**Mr. Weaver** addressed the direct testimonies of Staff witness Perdue and CAD witness Harris about the need for and reasonableness of the Project and CAD witness Powers' testimony about the timing of the Project and the notion of natural gas-fired supply options representing a more cost-effective substitute than the Project. In addition, Mr. Weaver addressed CAD witness Schlissel's testimony about an assessment of the planning risks associated with the Project and CAD witness Harris' testimony about the availability of capacity in the PJM region, and the need for the formation of a task force to study whether APCo should more aggressively seek energy savings from energy efficiency measures. SCW Rebuttal Ex. 1.

**Dr. Chodak** addressed certain recommendations contained in the direct testimonies of CAD witness Powers, regarding suggested actions for APCo to take to minimize the future cost of retrofitting the Plant and prepare it for CO<sub>2</sub> capture and his recommendations

regarding the installation of Selective Catalytic Reduction (SCR) technology on the Project. PC Rebuttal Ex. 1.

**Mr. Jasper** provided rebuttal testimony to address and respond to concerns about uncertainties with the cost and schedule of the Project that were raised by CAD witnesses Harris, Schlissel, and Powers and by WVEUG witness Kollen. WMJ Rebuttal Ex. 1. Mr. Jasper argued that the cost estimate at this time is reasonable based on the FEED analysis. Id. at 1. Because of the unprecedented escalation for commodities, manufactured equipment, and labor now occurring, the EPC (engineering, procurement and construction) market does not support firm pricing for a project which will be executed years into the future. Id. at 2. Mr. Jasper testified that he does not believe a hard cap of \$2.236 billion on the construction costs for the Project is reasonable under the circumstances because the actual costs of equipment, materials or labor have not been determined and cannot be locked down at this time. Id. Mr. Jasper also disagreed with the belief expressed by Mr. Powers that the same factors that have led to rising construction costs will also lead to delays in construction. Id. at 3. On the contrary, Mr. Jasper concluded that delays would occur if Mr. Powers' recommendations to invest initially in larger equipment and install CO<sub>2</sub> capture and sequestration technology prior to the enactment of CO<sub>2</sub> legislation and regulations were followed. Id. at 4.

**Michael J. Kelley**, the Director of Tax Planning and Analysis for AEPSC, responded to the direct testimony of Mr. Oxley of Staff about the federal tax credits and State tax incentives that may be available to the Project. Mr. Kelley also responded to WVEUG witness Kollen about the application of the IRC §199 Income Attributable to Domestic Activities deduction (manufacturing income tax deduction).

Mr. Kelley indicated that APCo would be pursuing any available federal or State tax incentives for the Project, including tax credits that were surrendered by Tampa Electric Company when it cancelled its IGCC project. MJK Rebuttal Ex. 1 at 4. Mr. Kelley agreed to notify the Commission if APCo receives any allocated tax credits or other incentives related to the project.

In addition, Mr. Kelley challenged Mr. Kollen's analysis of the IRC §199 deduction. Id. at 6. Mr. Kelley testified that §199 provides for a deduction against taxable income based upon a percentage of qualified production activity income (QPAI), and that QPAI includes the net taxable profit from the manufacture of electricity. Id. at 7. This deduction would not apply to the income associated with the construction of the Project because it would not be coming from the manufacture of electricity. Id. at 7. Furthermore, Mr. Kelley testified that Mr. Kollen misapplied the deduction and, under Mr. Kollen's approach, the Commission would impose an income tax rate reduction that does not exist. Last, Mr. Kelley testified that he believed that Mr. Kollen had ignored the correct application of the federal tax law and that incorrect application would virtually guarantee that APCo would not be able to recover its income tax expense. Id. at 14.

**Renee V. Hawkins**, the Managing Director, Corporate Finance, of AEPSC, provided rebuttal testimony that addressed the testimonies of Byron Harris, Edwin Oxley, and Lane Kollen regarding the impact if the Project Surcharges during the construction period of the Project were not granted. Ms. Hawkins discussed the negative impacts that would result if APCo was not granted the Project Surcharges and instead was forced to use the traditional form of rate relief advocated by WVEUG, Staff, and CAD. RVH Rebuttal Ex. 1.

**Bruce H. Braine**, the Vice President of Strategic Policy Analysis, provided additional information in response to the testimony of Mr. Schlissel about the potential price and cost of CO<sub>2</sub> emissions. Mr. Braine disagreed with Mr. Schlissel's assertions that APCo failed to use a reasonable CO<sub>2</sub> forecast. BHB Rebuttal Ex. 1 at 2. Mr. Braine asserted that APCo developed its CO<sub>2</sub> forecast by assuming a reasonable climate change bill would be passed. Id. at 3. He also testified that the price range forecast used by Synapse was not reasonable because, among other reasons, it is based on out-of-date legislative proposals and is unrealistic. Id. at 5.

**Mr. Eads** addressed the direct testimonies of Staff witness Oxley, CAD witness Harris, and WVEUG witness Kollen about the use of a Project Surcharge to recover the costs of the proposed Plant. Mr. Eads also argued against CAD witness Harris' proposal that the Commission require a cap on the total construction cost of the Plant and testified on the future rate treatment of tax-related issues associated with the Project.

Mr. Eads admitted that the Project Surcharges would increase customers' rates over the three-year period before the Project begins operation, but argued that customers will benefit from the Project Surcharge approach because of a lower overall rate increase when the plant goes into service and lower future rates over the life of the facility. TRE Rebuttal Ex. 1 at 4. Mr. Eads argued that if traditional ratemaking is used and the rate increase is delayed until after the plant goes into operation, the annual increase will be approximately \$18.3 million per year higher than under the Project Surcharge. Id. at 5. Mr. Eads cited other benefits of the Project Surcharge such as customers paying approximately \$229 million less in nominal dollars than they would under traditional ratemaking. Id. He also testified that the Project Surcharges would provide APCo with cash earnings that would be viewed positively by rating agencies and potential investors and that might avoid or mitigate potential negative impacts on the cost of capital needed to construct the Project and other utility infrastructure. Id. at 6.

Mr. Eads also testified that any apparent benefit of traditional ratemaking was a direct result of the inability of APCo to receive timely recognition in rates because of the impact of regulatory lag. Id. at 8. He further testified that the Project Surcharge would not shift risk away from APCo and onto the shareholders as argued by Mr. Harris and Mr. Kollen because APCo would be the only entity providing capital to build the new assets. By paying the Construction Surcharge, the customers are not investing in the Plant; rather, they are simply buying down the level of future payments that would otherwise have to be made for the use of the Plant. Id. at 10.

Mr. Eads also argued that the Commission has permitted exceptions to its tariff filing requirements that a utility's rate base be determined on a 13-month average of plant balances for an historic calendar year if the rate base involves a large capital investment, and particularly when the investment is related to environmental equipment. Id. at 11.

Mr. Eads also discussed the legislative language of W.Va. Code §24-2-1g directing that the Commission "authorize rate-making allowances for electric utility investments in clean coal and clean air technology facilities . . . located in West Virginia, which shall provide an incentive to encourage investments in such technology." Mr. Eads testified that he and APCo are confident that the Project meets all of the necessary requirements set forth by the West Virginia Legislature for the Commission to authorize the Project Surcharge mechanism requested by APCo. Id. at 13.

In addressing Mr. Kollen's view that the APCo cost recovery proposal does not allow adequate review of the cost of the Project before rates are adjusted, Mr. Eads testified that there would be adequate time for review as the surcharges would be submitted for approval during the annual ENEC<sup>5</sup> proceedings and that would allow at least three months for review of the Project Surcharges. Id. at 17.

Mr. Eads also disagreed with the cap on the Project Surcharge proposed by CAD witness Harris and stated that the regulatory process permits a utility to charge rates that provide it with an opportunity to earn a reasonable return on all prudently-incurred expenditures made to provide service to its customers. Mr. Eads added that requiring an arbitrary cap on the total amount of construction costs that can be reflected in rates is tantamount to a pre-determination that any cost incurred above the cap was imprudently incurred. Id. at 18.

---

<sup>5</sup> ENEC: In 1976, the Commission initiated periodic "Fuel Cost Proceedings" of fuel costs (and fuel-related purchased power costs) of electric utilities for past and projected fuel costs. In 1981, the Commission modified those proceedings to include other energy cost components including energy portions of purchased power transactions, offsets for energy cost recoveries in affiliated and other wholesale sales, including costs other than fuel costs and certain energy cost recoveries. Beginning in 1984, the Commission again modified the cost components that were considered in those annual proceedings to incorporate non-energy cost components in the annual reviews, and allowed the inclusion of the demand portion of purchased power transactions, power pool capacity payments and offsets for demand credits from affiliated and other wholesale transactions, and demand-related transmission costs and credits. Since these special purpose rate proceedings were "expanded" beyond net energy costs to include demand-related costs and credits, they came to be referred to as Expanded Net Energy Cost (ENEC) proceedings.



Finally, Mr. Eads stated that, to the extent APCo receives tax credits, deductions and/or incentives that have a nexus to the investment in the Project, APCo would intend to reflect an appropriate adjustment in the determination of the Project Surcharges. Id. at 20.

Staff pre-filed the rebuttal testimony of Mr. Oxley.

Mr. Oxley, in his rebuttal testimony, addresses Mr. Harris' recommendation that the Commission set a construction cost cap for the Project of \$2,236,000,000. Staff Ex. 2 (ELO Rebuttal) at 1, 2. In addition to fixing a cap on construction, CAD had suggested that under its construction cap approach APCo would have an incentive to control costs of the Project because the CAD proposal allowed APCo to retain 25% of any achieved cost savings below CAD's recommended cost cap. Id. Mr. Oxley, however, disagreed with CAD's construction cap/sharing proposal for several reasons.

Mr. Oxley argued that such a cap approach would (i) reward APCo for doing what it is otherwise required to do by statute -- provide safe electric service at the lowest reasonable cost; (ii) allow "phantom cost" (the amount of the savings) in APCo's cost of providing electric service in direct violation of the Commission's policy of only permitting recovery of actual costs incurred or paid for by utilities; (iii) rely entirely on APCo's estimate of the cost of the Project (which could be overstated) as the yardstick for gauging the targeted sharing threshold; (iv) provide an incentive for APCo to reassign costs between cost centers to reduce the cost of the Project; and (v) cause Project costs to be reduced to reduce short-term financial rewards to the detriment of long-term cost of service impacts to ratepayers. Staff Ex. 2 at 2, 3.

WVEUG, CAD and the Trades Council did not pre-file rebuttal testimony. Tr. at 21, 22.

#### **IV. DISCUSSION OF EVIDENCE AND ISSUES**

##### **A. APPLICATION FOR CERTIFICATE**

Obviously, the preliminary hurdle for the Project is whether APCo has met its burden of showing the general public convenience will be served and of showing the public necessity for the Project so that a Certificate should be granted. While some Parties indicated that they oppose the Project if the APCo requested Project Surcharge approach is approved, no Party has objected in a significant way to APCo being granted a Certificate for an additional baseload generating plant. Although the need for additional baseload capacity is generally not contested by any of the Parties, the type of generation to be built to meet this load, the appropriate time to construct the Plant, and the environmental controls to include on the Plant are contested by some of the Parties.

These issues must be addressed because (i) the proposed technologies (both the IGCC and the "carbon capture capability" aspects of the Project) are relatively "new" in electric

generation facilities, (ii) there is significant disagreement and uncertainty about future environmental statutory and regulatory requirements governing GHG and other emissions, and (iii) the Project's estimated \$2.23 billion cost (including the allowance for APCo overhead expense) is higher than any project previously certificated by this Commission. DEW Ex. 1 at 8. If the Commission grants APCo a certificate, the Parties disagree about what cost recovery mechanism, including the Project Surcharges, should be allowed.

W.Va. Code §24-2-11(a) requires any public utility, person or corporation proposing to construct a facility to furnish public services as defined by W.Va. Code §24-2-1 to obtain a certificate from this Commission authorizing that facility prior to commencing construction. Under subsection (b) of W.Va. Code §24-2-11, the Commission, after hearing, may, in its discretion, issue or refuse to issue, or issue in part and refuse in part, the requested certificate.

Interestingly, W.Va. Code §24-2-11, which is titled "Requirements for certificate of public convenience and necessity," does not define "public convenience and necessity," but the Supreme Court of Appeals of West Virginia has provided some guidance:

Where the Public Service Commission is authorized to issue a certificate of public convenience and necessity, in addition to any specific statutory guidelines, the Commission should consider the general public convenience to be served and the public necessity for it, having in mind the adequacy of any competing similar facilities.

Syl. pt. 4, *Sexton v. Public Service Commission*, 188 W. Va. 305, 423 S.E.2d 914 (1992).

### **1. Need for More Generation Capacity.**

The need for additional capacity is not seriously contested by any of the Parties in this case. The record reflects that APCo's highest hourly summer and winter peaks were 6,395 MW during the summer of 2006 and 8,003 MW in February 2007. APCo owns 6,415 MW (winter rating) of generating capacity - 5,093 MW coal-fired baseload, 214 MW of conventional hydroelectric, 585 MW of pumped storage hydroelectric and 523 MW of natural gas-fired combustion turbine peaking capacity. APCo, on a stand-alone basis, does not own enough generation to meet its own customers' present peak demand. DEW Ex. 1 at 3, 4.

In order to meet its peak demand requirement, APCo participates in the AEP Interconnection Agreement (the AEP Pool), under which AEP-East operating companies share generation and transmission resources. DEW Ex. 1 at 4, 5. In addition to APCo, AEP-East consists of generating companies, Columbus Southern Power Company; Indiana Michigan Power Company; Kentucky Power Company; and Ohio Power Company and two non-generating affiliates, Kingsport Power Company and Wheeling Power Company. AEP collectively serves about 3.6 million customers in an approximate 90,000 square-mile area

of Virginia, West Virginia, Ohio, Indiana, Michigan, Kentucky and Tennessee. SCW Ex. 1 at 4, 5. APCo is not only in a deficit position with respect to its capacity to meet its own customers' peak demands, but also is deficit in terms of the AEP Pool. As a deficit company, APCo makes annual capacity equalization payments of close to \$150 million per year into the AEP Pool. Tr. at 32-34.

The effects of APCo's generation of electricity extend beyond the AEP companies. The PJM Interconnection Association (PJM), a regional transmission organization (RTO), manages a long-term regional transmission planning process to maintain the reliability of the power supply system and coordinates the movement of electricity through all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia.

PJM requires an installed reserve margin level of 15% for generation capacity. SCW Ex. 1 at 29, 30 & Ex. 8-A & 8-B. AEP-East is projected to become deficient in meeting PJM's minimum reserve requirement in 2012. SCW Ex. 1 at 31, 33. APCo's capacity position is expected to be short 1,278 MW by summer 2008 and 1,418 MW by summer 2012. SCW Ex. 1 at 32. APCo's anticipated 2011 through 2012 winter season reserve is expected to be in a 663 MW deficit position. SCW Ex. 1 at 58. In addition, forecasts for APCo show growing load requirements for the AEP-East Zone and project a resource deficiency of 687 MW by the year 2012. SCW Exs. 1, 2, 4-A, 4-B, 4-C, 4-D, and 6-A; SCW Ex. 1 at 31-33; SCW Ex. 8-A.

APCo is a member of PJM, and APCo and certain other Pool members are being asked to contribute a larger share of the cost of baseload additions to AEP-East because they have enjoyed the benefits of being part of an integrated system for more than 30 years without having had to add baseload capacity. Tr. at 189.

The "Supply-Demand Forecast for Electric Utilities" submitted to the West Virginia Legislature each year by the Commission confirms that APCo's capacity deficiency in West Virginia is expected to grow and the AEP-East Zone installed capacity reserve margin is expected to decline. Staff Ex. 3 at 2-4.

Staff indicated that the Project would begin to satisfy the need to replace an aging fleet of coal-fired power plants and for an additional installed capacity resource for both the APCo service territory and AEP-East Zone. Staff Ex. 3 at 12.

CAD witness Mr. Powers also did not dispute that AEP's reserve margins will shrink without the addition of new capacity or that APCo is in a deficit position within the AEP Pool in covering its own internal demand. CAD Ex. 3 at 4. See also CAD Ex. 1 at 2; Tr. at 487; CAD Initial Brief at 2. In fact, CAD recommended that the Commission grant a certificate of need for APCo to construct an IGCC facility. CAD Ex. 1 at 2; CAD Ex. 3 at 4; Tr. at 487, CAD Initial Brief at 2.

Mr. Powers, however, did testify that more than 10% of AEP's capacity is intermediate and peaking gas-fired units, but the AEP system's actual utilization of gas has been a fraction of this amount - only 0.3% of total generation - indicating that gas-fired capacity has been used only for peaking purposes. In contrast, coal produced more than 88% of the system's generation. CAD Ex. 3 at 4-6. Mr. Powers testified that it is not at all evident that adding baseload capacity is APCo's best choice, even when taking into account that a number of AEP's older, smaller coal plants (most likely the units now operating as intermediate or peaking units) are expected to be retired in the coming years. It could be cheaper to add gas-fired intermediate or peaking capacity, similar to APCo's acquisition of the 500 MW Ceredo gas-fired peaking plant in 2005. CAD Ex. 3 at 6, 7.

As indicated previously, the Trades Council supports the Project and believes that its construction would have a positive impact on the local and state economies and be in the best interests of its members and the ratepayers. Trades Council Brief at 2.

The Commission finds it significant that by 2012, a projected minimum of 687 MW of capacity will be required to maintain AEP-East's obligations with PJM to maintain a reserve margin of 15%, the deficit capacity position is projected to grow, and APCo, on a stand-alone basis, does not have sufficient generation to meet its native load customers' present peak demand. Based on the evidence presented, there is certainly an adequate demonstration that APCo needs to add electric baseload capacity to meet the increasing load requirements of its customers.

## **2. Type of Plant to be Constructed.**

There is general, though qualified, support among the Parties for the Project, as compared to another type of generating facility. Most of the Parties support the IGCC technology, with its potential to mitigate GHG emissions, but oppose the Project Surcharges that APCo argues are essential for the Plant's construction. For instance, WVEUG states in its initial brief that it does not specifically oppose the Commission granting a certificate to construct the Plant in isolation. WVEUG Brief at 3. CAD, on the other hand, recommends that APCo be granted a certificate; however, in its witnesses' testimonies, CAD raises concerns regarding the timing of constructing a facility, the type of electric generating facility that APCo should construct, and the proper environmental technology that should be included if the Project is approved. What is clear after three days of hearings and the development of the extensive record in this case is that IGCC technology is a relatively new and evolving technology and generates considerable discussion (and occasional differences of opinion) among distinguished experts.

a. The Current Status of IGCC Technology. Because this is the first time this Commission has reviewed an Application for an IGCC facility, the Commission has invested extensive time in reviewing APCo's proposal.

Dr. Chodak testified that while the proposed IGCC processes are relatively new to large-scale generation projects, they have been commercially proven in IGCC plants in the chemical and energy industries. APCo's witness Mr. Rencheck also testified that the gasification technology has been used in the chemical industry for a number of years, and the combined cycle technology has likewise been used for years in electric and chemical plants. Tr. at 99.

Carbon capture technology likewise is new to electric generation, but is already used in the chemical industry. Tr. at 81, 82. While carbon capture technology is not yet scaled to the size of APCo's proposed Project, it is proven technology. Tr. at 81, 82. One of the downsides of operating an IGCC facility with carbon capture technology is that it loses about 10% to 15% of its output, or in the case of the Plant about 80 MW. Mr. Rencheck also estimates that it will cost about \$300 million to make APCo's Plant carbon capture ready. Tr. at 82.

IGCC technology has been used at a Florida electric generating station, both as a demonstration project and in commercial operations. The Project design incorporates the innovations and changes developed during the ten years that TECO's (Tampa Electric Company's) Polk IGCC Power Station (TECO/Polk) has operated. For example, the tendency of the convective syngas coolers to plug (sometimes referred to as "pluggage") caused outages at TECO/Polk, but those coolers have been eliminated from APCo's plant design. PC Ex. 1 at 4.

Mr. Rencheck testified that TECO/Polk is the best performing and most economical plant on that system. A baseload plant, it is the first unit to be dispatched. Although TECO/Polk started as a demonstration project, it has evolved into full-scale commercial use. Tr. at 119, 120.

Mr. Rencheck acknowledged that TECO recently cancelled a new IGCC project, but stated that TECO remains committed to supporting IGCC technology. MWR Rebuttal Ex. 1 at 5.

Staff witness Mr. Perdue testified that 128 gasifier plants currently operate, the first one beginning in 1952. Gasifier plants are primarily used to produce chemicals, but 22 of them produce electrical power. Seventy-one of the 128 operating plants, or 55%, use General Electric (GE) gasifier technology. Of those plants using GE gasifier technology, 17 of the 71, or 24%, use coal as the primary fuel source. Staff Ex. 3 at 8-10.

Mr. Perdue testified that the 250 MW TECO/Polk plant was one of 13 federal Department of Energy demonstration projects. TECO/Polk began providing service in 1996, operated as a demonstration unit until 2001, and has received numerous environmental and technological achievement awards. Mr. Perdue provided information from a performance report on TECO/Polk and concluded that the performance report was the best indicator that IGCC technology is proven. Staff Ex. 3 at 9, 10.

APCo's Project is one of the first times that IGCC technology will be used for an electric generation facility of this size. Given the number of years that IGCC has been used in the chemical industry, and the success of IGCC technology at TECO/Polk, the Commission concludes that there has been sufficient experience and information to support APCo's position that the technology can be operated successfully on a commercial scale.

b. Fuel Mix Adaptability. IGCC plants are able to use a variety of fuels, and importantly for the State and its coal industry, APCo's Plant is designed to burn eastern bituminous coal with a wide range of variables (sulfur, ash, chlorides, etc.). PC Ex. 1 at 3-6.

The ability to burn an assortment of coal and coal mixes is important. While coal has recently become the whipping boy for environmental ills (and there are clearly some problems in that regard), the fact is that coal reserves are estimated at 250 years, and rail and river transportation systems in this State make coal a reliable and stable source of energy for generating capacity for the Project. MWR Ex. 1 at 7. Coal has a future in the energy supplies of the country. AEP-East operating companies purchased more than 53 million tons of coal in 2006, the majority of which was produced in West Virginia, Virginia, Ohio and Kentucky. APCo bought 90% of its coal from West Virginia and Virginia. MWR Ex. 1 at 8. Although ultra-supercritical plants are more efficient when using high-moisture fuels such as lignite from AEP's western states, APCo's Plant is designed to use bituminous coal that has efficiency and cost advantages, particularly when considering potential CO<sub>2</sub> capture and storage possibilities. MWR Ex. 1 at 11.

The proposed IGCC site has a coal mine on site that delivers coal via conveyor. The adjacent Mountaineer Plant also has a barge unloading structure that can be used, and coal can be delivered by rail if needed. MWR Rebuttal Ex. 1 at 4.

c. Environmental and Emissions Controls. An IGCC plant is expected to produce a much lower emissions footprint than a conventional pulverized coal plant equipped with state-of-the-art emissions controls. PC Ex. 1 at 6, 7. CO<sub>2</sub> emissions from an IGCC plant, even without the use of the specific carbon capture technology contemplated for the Plant, are comparable to those of a supercritical pulverized coal facility equipped with state-of-the-art emissions control equipment.

APCo's Project is designed to remove more than 99.5% of the SO<sub>2</sub> and 90% of the mercury. The Plant will use diffusion flame combustors in the Combustion Turbine Generator as well as syngas dilution to control flame temperature to control nitrogen oxides to 15 ppm. PC Ex. 1 at 8. Because an IGCC plant resembles a chemical plant, it is easier to manipulate the composition of process stream, including CO<sub>2</sub>. An IGCC facility also can be expanded to produce feed stock for chemicals, fuels and other products for other commercial uses. A typical pulverized coal plant cannot. MWR Ex. 1 at 16; PC Ex. 1 at 6.

Dr. Chodak of APCo testified that IGCC is the only power generation technology with proven capability to capture CO<sub>2</sub>, but currently there is no regulatory requirement to capture

CO<sub>2</sub> nor is there an economic incentive to do so. JMM Ex. 1 at 7. APCo does not believe it prudent to modify the design of the Project to include carbon capture equipment or the SCR technology as recommended by CAD. PC Rebuttal Ex. 1. Modifications to add carbon capture technology at this time would significantly increase the cost of the facility and would be premature as the technology related to CO<sub>2</sub> capture is ongoing. PC Ex. 1 at 8. Uncertainties regarding CO<sub>2</sub> legislation and regulation also make it more reasonable to wait until such requirements are certain. Id. at 3.

By the time CO<sub>2</sub> regulation is effective, the advances may change the specific design of the preferred CO<sub>2</sub> capture retrofit. Id. at 2. It is also not prudent to include SCR technology, as that technology is not currently technologically feasible to apply to the IGCC facility and as it can be easily retrofitted in the future if it becomes feasible. Id. at 7. The Plant is designed to be compatible with CO<sub>2</sub> capture equipment (referred to during the hearing as being carbon capture capable), but the equipment will not be installed until these CO<sub>2</sub> regulations are known. PC Ex. 1 at 8; MWR Rebuttal Ex. 1 at 2, 3.

IGCC technology has the potential to control CO<sub>2</sub> emissions at a significantly lower cost than conventional technologies. MWR Ex. 1 at 15, 16. The IGCC process requires about one-third less water than a pulverized coal plant; generates less solid waste than a conventional coal plant; and has greater fuel flexibility than conventional coal plants. MWR Ex. 1 at 16; PC Ex. 1 at 6.

APCo witness Mr. Rencheck testified that environmental uncertainty supports the selection of IGCC technology that permits pre-combustion carbon capture. The cost to add carbon capture technology to an IGCC plant is about 10% less than the cost to retrofit a pulverized coal facility with carbon capture technology and 25% less to retrofit a natural gas combined cycle plant. MWR Rebuttal Ex. 1 at 2, 3.

When considering the environmental implications, Staff witness Mr. Perdue testified that IGCC technology could provide maximum regulation of all hazardous emissions when compared to other forms of coal generators. Staff Ex. 3 at 6-8.

APCo argues that it has thoughtfully considered other generation options - pulverized coal (subcritical, supercritical, ultra-supercritical), circulating fluidized bed (an alternative coal combustion technology), nuclear, and natural gas combined cycle - and has determined that an IGCC facility is better positioned to meet its baseload needs than the alternatives, especially a natural gas combined cycle turbine facility or a natural gas combustion turbine plant. MWR Ex. 1; SCW Ex. 1 at 45-58; SCW Rebuttal Ex. 1. APCo focused on fossil-fuel-based generation because of the proximity of significant coal supplies and the uncertain attitudes and long lead times to construct nuclear generation. MWR Ex. 1 at 6.

CAD witness Powers stated that a natural gas combined cycle plant without CO<sub>2</sub> capture produces 60% less CO<sub>2</sub> emission per MW hour than a comparable IGCC facility, but APCo's witness testified the figure was closer to 50%. APCo argues that IGCC carbon

removal, which occurs before combustion instead of after, is far more efficient and uses much less energy. MWR Rebuttal Ex. 1 at 3. Adding carbon capture to a pulverized coal plant would reduce its output by 30%. Tr. at 80. It may not be technically feasible to retrofit a pulverized coal plant because the carbon capture would rob steam from the primary steam turbine and could make it inoperable; moreover, the capture technology needed for the existing plants is still immature and formative. Tr. at 81, 82. At the Mountaineer plant, AEP is testing carbon capture by doing a 20 MW slipstream capture.

APCo responded that the Project is better positioned to meet APCo's baseload needs than other alternatives, especially NGCC or NGCT. MWR Ex. 1; SCW Rebuttal Ex. 1. APCo admitted that the initial capital investment for either gas facility is lower than that for the IGCC facility, but stated that the natural gas plants are ultimately dispatched based on variable costs, not embedded capital costs. SCW Rebuttal Ex. 1 at 3. Furthermore, because of the natural gas facilities' meeting mostly "peak" or "intermediate" needs, they would not be able to meet the incremental baseload energy requirements of the AEP-East Zone and APCo. Id. at 4. APCo also provided evidence that the life cycle cost of electricity of the IGCC facility is on par or below that of an NGCC facility. Id. In fact, when the impacts of environmental compliance are considered, the overall estimated cost of electricity from an IGCC plant is the least-cost option over the life of a baseload plant. MWR Ex. 1 at 6.

The Commission has concluded that the IGCC technology has advantages, both environmental and economic, especially under CO<sub>2</sub> control scenarios, making it the logical choice for new baseload generation for the Project.

### **3. Any Legal Requirement to Build an IGCC Facility.**

WVEUG argues that APCo has not demonstrated the specific need to construct, at ratepayer expense, an IGCC facility. As a result, and as indicated earlier, WVEUG opposed the request for the Certificate to the extent that APCo demanded approval of the Project Surcharge mechanism as a condition of its constructing the Project. WVEUG Brief at 8. Specifically, WVEUG argued that: (i) the Project is not mandated by any existing state or federal regulation; (ii) pursuing the Project is a high-risk endeavor; (iii) APCo has chosen not to employ other lower cost alternatives; and (iv) if ratepayers are required to bear the up-front costs and risks of the project, it is more appropriate to delay the construction of the Project until exact requirements are known. WVEUG Brief at 8-20.

In response to WVEUG's arguments, APCo argues that it is not required to show that an electric generation facility is mandated by law in order to be authorized to build that facility. APCo Reply Brief at 3. APCo must only show that the public convenience and necessity require the IGCC facility, which, APCo argues, it has done. Id. No Party disputes this other than WVEUG, and we agree that APCo does not have to show that an IGCC facility is required by law. Under W.Va. Code §24-2-11, APCo must only prove that the public convenience and necessity are served by the Project.



APCo also argues that building the Plant is not as risky as WVEUG asserts and that APCo would be taking a high risk if it did not build the Plant facility because of the future climate change regulations. Id. at 4. With the significant political pressure regarding climate change and the degree of legislative activity, it seems clear to the Commission that climate change laws will be forthcoming to require CO<sub>2</sub> emission reductions in the electric generating sector. Id. The Commission does not exist in a vacuum, and in our opinion the only questions are when and to what extent CO<sub>2</sub> will be regulated, not if it will be regulated. Id. See also, MWR Ex. 1 at 5, 6, citing *Massachusetts v. EPA*, 127 S. Ct. 1438 (2007).

#### **4. Construction and Capital Cost.**

While the relative cost and financing of the Project are discussed more fully below, the initial engineering, procurement and construction capital costs of an IGCC plant are about 20 to 30 percent higher than a pulverized coal unit. When environmental regulations are considered, however, especially given the necessity to consider GHG emissions, an IGCC plant's overall estimated cost of electricity is about 9% less. APCo believes the Project, while having a higher initial cost than a conventional pulverized coal plant, will be the least-expensive option over the life of the plant. MWR Ex. 1 at 17.

APCo provided evidence that the life cycle cost of electricity of the IGCC facility is on a par or below that of a natural gas combined cycle facility. Id. When environmental compliance impacts are considered, Mr. Rencheck testified that in his opinion the overall estimated cost of electricity from an IGCC plant is the least-cost option over the life of a baseload plant. MWR Ex. 1 at 6. APCo therefore has concluded that the IGCC technology has advantages, both environmental and economic, especially under CO<sub>2</sub> control scenarios, making it the logical choice for new baseload generation. Id.

CAD's witness Mr. Powers argued that it may be cheaper to add gas-fired intermediate or peaking capacity in the short term while uncertainties concerning future carbon capture requirements are resolved. He indicated that the proposed Plant has an estimated installed price of \$3,500 per kilowatt, but a natural gas combined cycle turbine plant can be built for around \$850 per kilowatt, and a natural gas combustion turbine can be built for \$400 to \$700 per kW. CAD Ex. 3 at 3, 6, 7; Tr. at 489-493.

Although natural gas prices have been volatile in recent years, Mr. Powers stated that, based on current United States Department of Energy data, he believed that a natural gas combined cycle facility would not be cost prohibitive relative to the proposed Plant. Between 2002 and 2006 the nation's total natural gas consumption declined by 6%. Over the long term, the U. S. Department of Energy's Energy Information Administration forecasts a 14% growth in domestic natural gas production from 2005 to 2020, with gas prices ranging from \$5 to \$8 per Mcf. CAD Ex. 3 at 8, 9.

In response, APCo witness Mr. Weaver testified that AEP-East needs both baseload and peaking capacity; the wholesale market can be unpredictable and volatile; and, thus, in

the long run it would be better to construct a new generating plant, and not rely on the wholesale market. DEW Ex. 1 at 5. According to Mr. Weaver, the decision is not just what it costs to stick a plant in the ground; instead, APCo looks at the total cost of electricity. Tr. at 539.

CAD believes a certificate should be granted because of the Project's potential for carbon capture, but, as discussed below, CAD strongly opposed APCo's request for special ratemaking treatment through the Project Surcharge. Mr. Harris acknowledged that, while in the near term, natural gas combined cycle generating facilities are cheaper, in the long term benefits may accrue from the Project. Mr. Harris believes there is more than a 50/50 chance that emissions legislation will be enacted, but he cannot predict when Congress will act or what Congress will do. Tr. at 351-353.

Mr. Perdue, the witness for Staff, compared alternate technologies, using APCo's Generic Cost Estimate Summary, MWR Ex. 4, and the Department of Energy's May 2007 National Energy Technology Laboratory (NETL) report "Volume I: Bituminous Coal and Natural Gas to Electricity Final Report," and concluded:

- i) The plant capacity factors are similar at 80% for IGCC and 85% for pulverized coal;
- ii) The plant efficiencies, per higher heating value (HHV), are very similar for each technology;
- iii) When carbon capture technology is added, all technologies lose capacity, which equates to lost revenue from power sales;
- iv) Per NETL's Total Plant Cost for each technology, in dollars per kW, new sub and supercritical coal units without carbon capture technology are less expensive to construct than an IGCC plant, but when carbon capture is included, the sub and supercritical plants cost more to construct;
- v) Per APCo's Exhibit No. 4, the Total Plant Cost for the sub-critical and IGCC technologies with carbon capture are similar, with the IGCC technology costing slightly less.

Staff Ex. 3 at 4-6. Staff concluded that overall the cost of the proposed IGCC project appears to be reasonable, if APCo's owner's cost are reasonable. Staff Ex. 3 at 6.

The Clean Air Act of 2005 calls for regulation of sulfur dioxide, nitrogen oxide, particulate, and emissions (all inclusively known as hazardous emissions). Mr. Perdue testified that IGCC technology, even without carbon capture, appears to address the regulated EPA hazardous emissions at least as well as, or better than, a new pulverized coal technology power plant. He also stated that IGCC pre-combustion carbon capture technology appeared to be more advanced than the technology to retrofit an existing coal-fired plant, and refinement of carbon capture technology should improve the technology and lower its cost. Staff Ex. 3 at 12, 13.

Mr. Perdue also stated that, among other advantages, the Project will be constructed near an electric transmission line and water source. Mr. Perdue notes the Project will also comply with current environmental regulations, has the capability of capturing CO<sub>2</sub> if CO<sub>2</sub> regulations are implemented, and will be less expensive to retrofit for carbon capture than a pulverized coal generation plant. Tr. at 407.

CAD and the other Parties also raised concerns over the uncertainty in the ultimate cost of the Project. CAD witnesses Harris, Schlissel and Powers and WVEUG witness Kollen have each addressed these concerns in the respective testimonies.

APCo has estimated that the cost of the IGCC facility is \$2.23 billion. APCo witness Weaver discussed in detail APCo's evaluation of six resource portfolios that considered natural gas prices, coal prices, SO<sub>2</sub> allowances, NO<sub>x</sub> allowances, CO<sub>2</sub> allowance prices, regional energy prices, load requirements, and generating unit outage rates. SCW Rebuttal Ex. 1 at 12; SCW Rebuttal Ex. 15. APCo witness Jasper testified that the cost estimate provided by APCo is as reasonable as possible at this time. WMJ Rebuttal Ex. 1 at 1. APCo also performed a detailed FEED study which determined the estimated cost of the IGCC facility, as discussed by APCo witness Jasper. WMJ Ex. 1 and WMJ Rebuttal Ex. 1.

Mr. Jasper indicated that the engineering, construction and procurement (EPC) market does not support an arrangement by which firm pricing can be established by a contractor for a project which will be executed years into the future. Id. at 2. This is the result of unprecedented escalation for commodities, manufactured equipment, and labor now occurring. Id. Importantly, any increase for these types of construction costs would apply across the board to the construction of any facility - - not just the proposed Project.

The Commission appreciates that APCo has undertaken an extensive FEED process which resulted in thousands of engineering drawings and specifications, the acquisition of over 90% of the current pricing for bulk quantity materials and equipment from vendors, a detailed cost estimate at current pricing as of November, 2006, and a detailed project schedule. Id. APCo witness Jasper explained that this process has mitigated every possible risk that can be mitigated at this time. Id.

APCo witness Weaver provided the range of CO<sub>2</sub> allowance prices that were applied in the utility's risk analysis and opposed the higher Synapse estimates that CAD witness Schlissel provided, in large part because the Synapse prices were based on outdated information. SCW Rebuttal Ex. 1 at 13. If such higher prices nonetheless come to bear, CO<sub>2</sub> reduction technology would become economically justified sooner. Id. APCo witness Braine explained the basis for APCo's CO<sub>2</sub> price forecast. BHB Rebuttal Ex. 1 at 2, 5.

CAD witness Schlissel brought to the Commission's attention a number of coal-fired projects cancelled within the past year because of increasing construction costs or the potential for federal regulation of GHG emissions. CAD Ex. 3 at 7. In contrast, APCo witness Weaver discussed the Indiana Utility Regulatory Commission's recent approval of

Duke Energy Indiana's Edwardsport IGCC project on November 20, 2007, as well as more than sixteen coal-fired plants that have been approved and/or permitted in the past 18 months. SCW Rebuttal Ex. 1 at 11, 12; SCW Rebuttal Ex. 5R.

Furthermore, it appears that APCo's CO<sub>2</sub> allowances and costs included the same range of CO<sub>2</sub> allowances and costs considered by CAD witness Schlissel and were based upon more recent legislation. For these reasons, the Commission concludes that the CO<sub>2</sub> allowance and pricing forecast utilized by APCo are reasonable.

The Commission is aware of the groundbreaking nature of the Project and that some IGCC projects proposed around the country have been terminated for various reasons. By the same token, other IGCC projects are proceeding as planned and have obtained regulatory approval. This Commission, as do most regulatory bodies, has imperfect foresight, and 20/20 hindsight. It is impossible to anticipate every possible risk involved in a project of this scale. The Commission can only perform the assessment and evaluation requirement imposed on it by law. The Commission has done that, and it appears to the Commission's satisfaction that APCo has adequately considered the risks associated with the Project as demonstrated by its detailed analyses.

Based on the evidence presented in this case, the Commission agrees with APCo's assessment that the Project is an efficient and capable proposal to meet the baseload capacity needs of APCo's customers. Not only is the Project best suited to provide the needed baseload capacity needs, as opposed to the natural gas-fired facilities meeting mostly "peak" and "intermediate" needs, the Project will run more efficiently and at a cost on par with or below that of the natural gas-fired facilities and will enable the Plant to utilize an array of alternative coal sources and mixes, including coal mined in the State. The Commission concludes that an IGCC facility as envisioned in the Project is the best option to meet the capacity needs of APCo and comply with current and future environmental requirements.

## **5. When to Construct the Project.**

a. Should Pending GHG Standards Delay the Project. WVEUG argues that the Project should be delayed because regulatory and technological uncertainty exists and that APCo wants ratepayers, via Project Surcharges before the Plant begins providing service, to insure APCo from those risks. WVEUG Initial Brief at 19, 20, 37, and 38. APCo on the other hand does not believe it is prudent to wait before it constructs the IGCC facility.

APCo argues that considerable lead time is needed for the Project -- for planning, permitting, design, and construction. APCo witness Weaver testified that delaying the Project will further worsen the need for baseload energy and result in cost increases because of increases in construction costs and the substantial FEED work that would need to be performed again. SCW Rebuttal Ex. 1 at 8. The AEP-East Zone clearly requires new baseload requirements to offset anticipated load growth and the prospects of potential coal-unit retirements. Id. Mr. Weaver does not agree that uncertainty regarding CO<sub>2</sub>

regulation makes the decision to build the IGCC facility speculative. Passage of GHG legislation is becoming more probable, and, thus now is the time to address the issue. SCW Rebuttal Ex. 1 at 9.

CAD witness Mr. Powers agrees that costs are likely to escalate if the Project is postponed. Tr. at 492, 493. Nevertheless, he testified that a delay was appropriate until CO<sub>2</sub> capture requirements are known. Tr. at 497, 498. CAD recommended that APCo delay construction because of the uncertainties about actual construction cost and future CO<sub>2</sub> regulation, but having said that, CAD recommended that APCo decide when to begin construction. CAD Ex. 1 at 2-4; CAD Ex. 3 at 26, 27.

APCo witness Mr. McManus testified that, while there are currently no federal regulations on GHG, in his opinion it is simply a matter of when and how those regulations are implemented. JMM Ex. 1. A number of states, including California, are moving to regulate GHG emissions. In 2007 the West Virginia Legislature passed Senate Bill 337, which authorizes a GHG reporting program to create a GHG inventory. Reporting would be mandatory for stationary sources emitting certain levels of CO<sub>2</sub>, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The State's Department of Environmental Protection is developing the regulations to implement the program. JMM Ex. 1 at 7-9.

Mr. McManus further testified that the United States Supreme Court of Appeals, in a 5-4 decision, established a foundation for the future regulation of CO<sub>2</sub> in *Massachusetts v. Environmental Protection Agency*, 127 S. Ct. 1438 (April 2, 2007). The Supreme Court concluded that the EPA has statutory authority to regulate GHG emissions from new motor vehicles because GHG emissions, including CO<sub>2</sub>, fit within the Clean Air Act's definition of "air pollutant." The Supreme Court held that the EPA's policy decision not to regulate GHG was unjustified and stated that the EPA could not avoid its statutory obligation by concluding that, given the uncertainty of climate change, it would be better not to regulate GHG at this time. JMM Ex. 1 at 7-9.

b. APCo GHG Efforts. APCo provided extensive testimony of its efforts to be proactive in reducing GHG emissions. Those activities have included efforts to install carbon capture on two coal-fired power plants, with commercial operation expected to begin in 2011 (JMM Ex. 1 at 10-12); a voluntarily agreement made in March 2007 to reduce GHG emissions an additional 5 million tons annually beginning in 2011 through the addition of 1,000 MW of purchased wind power, increases in its forestry investments, and investment in domestic offsets, such as methane capture from agriculture, mines and landfills. Additionally, AEP has committed to invest in innovative generation options such as IGCC technology, demand side management and consumer energy efficiency programs, and in improvements in the efficiency of its existing plants through heat rate/capacity improvements and retirements of less efficient generation. AEP indicated that it supports a national policy of reasonable carbon controls as long as those controls do not impede its ability to provide reliable, reasonably-priced electricity. JMM Ex. 1 at 10-12.

APCo witnesses testified that a national cap-and-trade program for GHG similar to that currently in place for SO<sub>2</sub> and NO<sub>x</sub> is most likely, and that APCo could offset GHG emissions from the Plant with verified emission reductions at other sources. IGCC plant carbon emissions are better than those from a conventional coal-fired plant equipped with state-of-the-art emission controls. Additionally, if it is required, the IGCC plant can separate and sequester CO<sub>2</sub> from the process at a lower cost than conventional technologies. JMM Ex. 1 at 12, 13.

The Commission concludes that APCo is proposing to proceed in a cautious manner while it is meeting its customers' baseload generation needs. The Commission believes that APCo has demonstrated that the need for additional baseload capacity exists now and that it would be more prudent to construct the Plant at this time. The easiest thing in the world, in the short run, would be for this Commission to tell APCo to buy more power and defer the Project. The Commission, however, believes that APCo has undertaken thorough analyses and delaying the construction of the Project for a considerable period of time would render those analyses moot, require additional FEED expenses, in all likelihood subject the Project to expected increases in construction costs, and not be in the long-term interests of APCo, its customers or the State.

In this case, APCo is considering investing an admittedly large sum to construct the Plant to produce electricity for 40 years or more. The Parties and the Commission must consider the direction of future environmental regulation. Given the length of time that the Project will operate, the various bills Congress has considered, the recent United States Supreme Court decision, and the authorization for a mandatory reporting program in West Virginia, the Commission believes APCo's decision to choose IGCC technology, in large part due to the expected future regulation of CO<sub>2</sub> emissions, is reasonable. Nevertheless, given the uncertain nature and extent of CO<sub>2</sub> regulation, the Commission concludes, and urges APCo in the strongest terms, to continue to analyze its decisions about if and when to proceed with the construction of Project and whether to continue with such construction if later information indicates it might not be prudent to continue.

We are not required, nor for that matter permitted, to require an applicant for a certificate to demonstrate that there is absolutely no chance that there are any downside risks from its projects. We can only look to see if it has been reasonably prudent in determining the need for the project, in assessing the risks associated with undertaking the project, and in assessing the alternatives to the project. In this case, the Commission believes that APCo has demonstrated that it has met that burden. To delay the entire process altogether is not only unnecessary, but also not prudent in regard to the immediate need for additional baseload capacity.

#### **6. Plant Modifications to Prepare for CO<sub>2</sub> Capture/SCR.**

As indicated earlier in this Order, CAD recommends that APCo be granted a certificate; however, in its testimony and brief, CAD raised concerns regarding the need to

modify the Project's carbon capture technology and to require selective catalytic reduction (SCR) technology be added to the plant at this time. CAD Brief at 17.

a. Inclusion of CO<sub>2</sub> Capture. CAD argues that the Project design should include equipment to make the Plant carbon capture ready and criticizes APCo for not including those costs in its calculations. CAD estimates that the equipment now will cost from \$80 million to \$200 million, depending on whether full or partial carbon capture is planned. CAD recommended that APCo be ordered to apply to amend its Certificate when the carbon capture costs are more certain. CAD Ex. 1 at 2-4.

Several design modifications can be incorporated at the Project's initial phase to prepare for later full CO<sub>2</sub> capture. Although these design elements increase the plant's initial cost by 5%, CAD contends that they will save more than that in the retrofit cost. CAD witness Mr. Powers argues that taking those steps now will allow the Plant to operate at 5% to 10% higher net output and will reduce the cost of energy used for CO<sub>2</sub> capture following retrofit by 5%. CAD Ex. 3 at 14-17.

The add-on costs for 90% CO<sub>2</sub> capture (also referred to as "full CO<sub>2</sub> capture") at a 600 MW IGCC plant are estimated to be \$180 million. Compressor capacity for the captured CO<sub>2</sub> adds about \$20 million. CAD Ex. 3 at 15. Mr. Powers testified that 20% to 50% levels of CO<sub>2</sub> capture are also possible. CAD Ex. 3 at 17-20. The most significant impact of retrofitting CO<sub>2</sub> capture on an IGCC plant is the loss of energy required to power the carbon capture process. Mr. Powers testified that 15% to 20% partial CO<sub>2</sub> capture would reduce efficiency 2% to 3% and could be accomplished at a relatively moderate incremental cost. CAD Ex. 3 at 18-20. Mr. Powers estimates that it would cost \$78 million to make APCo's Plant ready for partial (20%) carbon capture and \$200 million for full carbon capture. These amounts do not include the costs of CO<sub>2</sub> injection wells, which he estimates at \$2 million per well. CAD Ex. 3 at 20, 21.

APCo argued that it is not prudent to modify the design of the Project to include carbon capture equipment or the SCR technology as recommended by CAD. PC Rebuttal Ex. 1. Modifications to add carbon capture technology at this time would significantly increase the cost of the Plant and would be premature as the development of technology related to CO<sub>2</sub> capture is ongoing. Id. The APCo position is that the uncertainties regarding CO<sub>2</sub> legislation and regulation make it more reasonable to wait until those requirements are certain. Id. at 3. By the time CO<sub>2</sub> regulation is effective, the advances may change the specific design of the preferred CO<sub>2</sub> capture retrofit. Id. at 2.

APCo also argued that it is not prudent to include SCR technology in the Project because that technology is not currently technologically feasible to apply to the IGCC facility and because it can be easily retrofitted when it becomes feasible. Id. at 7. APCo's witness, Dr. Chodak, testified that technological advances are ongoing and argued that, by the time CO<sub>2</sub> regulation is in effect, the design of the preferred CO<sub>2</sub> capture retrofit may change. PC Rebuttal Ex. 1 at 2.

Dr. Chodak disagreed with CAD's suggestion that APCo should install partial CO<sub>2</sub> capture equipment, testifying that such action was premature and that Mr. Power's estimated \$80 million cost for 15% to 20% capture might not be sound. In APCo's estimation, CO<sub>2</sub> capture will increase the cost of electricity by 31% for an IGCC plant using eastern bituminous coal. PC Rebuttal Ex. 1 at 3, 4. Dr. Chodak also testified that there is not yet a process for large-scale CO<sub>2</sub> injection. Even if one accepts CAD's \$80 million estimate to install 20% capture, Dr. Chodak testified that the \$80 million likely would be lost if the plant were later made to achieve 65% capture or 90% capture. Tr. at 548-550. Dr. Chodak testified that building the Plant without CO<sub>2</sub> capture will allow APCo to "walk before it runs." PC Rebuttal Ex. 1 at 6.

More than 90% of CO<sub>2</sub> can be removed today, Dr. Chodak testified, but at some point it is no longer cost effective to remove more CO<sub>2</sub>. Tr. at 216. It is the economics, not the technology to remove CO<sub>2</sub>, that is the limitation. Tr. at 217, 218.

In the Project's design, APCo has essentially "left space" to retrofit the Plant for carbon capture. Dr. Chodak estimates a \$200 to \$300 million retrofit for a very large plant that may have about four million tons of CO<sub>2</sub> to remove. However, when a plant is designed up front this way to be carbon capture capable, it is considered a bolt-on retrofit. Tr. at 219-222. This estimate does not include the cost of drilling sequestration wells. Tr. at 223.

Dr. Chodak admitted that he cannot project when CO<sub>2</sub> pre-combustion capture will become economically viable. Tr. at 230, 231. For AEP's purposes, when and whether the carbon capture becomes economically viable depends on the regulatory framework that emerges. Tr. at 231. Dr. Chodak testified that currently two operating IGCC plants, Indiana's Wabash River Plant and TECO/Polk, do not capture carbon. The proposed \$1.985 billion Duke Energy Edwardsport Plant is also designed only to be carbon capture compatible. Tr. at 233, 234.

In response to CAD's recommendation that APCo oversize certain portions of the Project so that the Plant will be carbon capture ready, Dr. Chodak testified that (i) those modifications would cost \$112 million and (ii) it is not prudent to spend \$112 million without knowing what the carbon capture regulations will require. He also testified that because there are significant performance issues with adding carbon capture to IGCC and pulverized coal plants, technologies are being developed to decrease this reduction in performance. Tr. at 552-555. Dr. Chodak testified that significant research is ongoing regarding separation units and hot gas cleanup, and a breakthrough in either of these technologies would change how to retrofit a plant to capture carbon. Tr. at 565, 566.

Dr. Chodak does not agree with the characterization that the Project is an expensive learning process; rather, he views it as a prudent learning process given the very expensive problem that climate change presents. Tr. at 556-559. The learning experience will benefit the entire AEP system, position APCo to provide least-cost compliance, and allow customers to reap the benefits of CO<sub>2</sub> reductions earlier. Tr. at 559.



The Commission finds APCo's arguments that it is not appropriate at this time to require APCo to make the Project full or partial carbon capture ready to be persuasive. The Commission also agrees that once carbon emissions are regulated there may be a breakthrough in carbon capture technology that would allow for a more economical and efficient way of addressing the carbon emission issue. Until APCo knows what the carbon emission regulations will be, the Commission agrees it will be difficult to determine what level of carbon capture will be needed and how to accomplish it in the most economical fashion. Accordingly, the Commission will not require APCo to make the Project carbon capture compatible, as opposed to carbon capture capable, at this time.

APCo should understand, however, that the Commission supports carbon capture for all the reasons discussed herein, including particularly the ability to commit to use West Virginia coal and to vary the coal mix for the Plant. The Commission will leave it to APCo to decide precisely when it is economically and legally in a position to retrofit the Project to make it carbon capture ready. The Indiana Utility Regulatory Commission in its relatively recent approval of the Duke IGCC project required Duke to report back to the Indiana Commission within six months. That allows Duke to proceed with its IGCC plant as proposed, but directs that the partial CO<sub>2</sub> capture issue be studied. Tr. at 550-552. The Commission hereby gives APCo notice that it must keep the Commission apprised of the status of this decision and file an application for a certificate of convenience and necessity for carbon capture because the Commission believes the retrofit would be a major modification to the IGCC Plant.

b. SCR Technology for NOx Emissions. In addition to his testimony regarding carbon capture, CAD witness Mr. Powers asked the Commission to require the Project to include selective catalytic reduction (SCR) technology to reduce NOx, arguing this will provide operational flexibility at modest cost. CAD Ex. 3 at 21-24. Mr. Powers estimates that installing SCR for both turbines at the Mountaineer IGCC will cost \$6 million to achieve an 80% NOx reduction, or less than 0.3% of the overall Project cost. CAD Ex. 3 at 23.

While it seems like a relatively insignificant amount, particularly given the overall estimated cost of the Project, APCo witness Dr. Chodak argued against the requirement to use SCR technology because the Plant as proposed will comply with all applicable emissions regulations. APCo has also concluded that SCR is not currently a technically feasible option for coal-based IGCC operations because there is uncertainty about the lifespan of a SCR catalyst in a coal-based syngas environment and concerns about potential corrosion and plugging impacts to the heat recovery steam generator. PC Rebuttal Ex. 1 at 6, 7. Dr. Chodak indicated that he believed there are still some things to learn about how SCRs operate with the IGCC technology. He testified that it is prudent to have some operating experience first; moreover, it is not difficult to add this technology to an IGCC plant. Staff witness Perdue also noted that the TECO/Polk plant emits NOx at a low fractional percentage of what the new performance standards are for coal plants. Tr. at 560-563

No Party has indicated that NOx emissions from the Project are projected to violate a law or regulation applicable to APCo. Given that the NOx emissions are projected to be a low fractional percentage of the new performance standards for coal plants, the Commission finds APCo's rationale for not installing SCR technology on the Plant from the start to be the better reasoned position.

#### **7. Proposed Staff Conditions on Project Construction.**

Although Staff ultimately recommends that the Commission certificate the Project, Staff advocates that the Commission impose certain conditions on the Certificate issued in connection with the Project. Specifically, Staff advocates that in addition to any limitations or conditions on the rates and finances (i) the Certificate be conditioned upon a requirement that APCo seek additional approval from the Commission before proceeding if there are any material changes to the scope of the Project; (2) the Certificate not be permanent in nature but rather have a limited "shelf life," specifically arguing that if APCo fails to commence and continue construction within a period of five years from its current estimate of the second quarter of 2008, the Certificate become invalid unless APCo petitions, within that time frame, for approval to extend the shelf life of the Certificate for the Project; (3) APCo be ordered to seek any available federal tax credits or other incentives applicable to the Project and that APCo be ordered to notify the Commission if it receives any allocated tax credits or other incentives related to the project; (4) APCo be ordered to file quarterly progress reports on expenditures, construction progress and any noteworthy development impacting the project; and (5) APCo be ordered to notify the Commission upon substantial completion of the Project. Staff Brief at 4, 5.

APCo responded in its Reply Brief that it has no problem with the conditions as framed, with one exception. APCo suggested that the requirement to seek "any available" tax credits or other incentives should be appropriately limited to "reasonable" or "prudent" efforts. APCo Reply Brief at 24. The Commission agrees with that proposed exception for the reason set forth below in this Order at the discussion of APCo's pursuit of tax credits and incentives.

#### **8. Commission Discussion Regarding Issuance of Certificate.**

The Commission will discuss other financial and rate implications of the Project below, including the provisions of W.Va. Code §24-2-1d that address the public policy interest of the State under certain conditions to encourage the purchase of projected deficient capacity from electric generation situate in the State that burns coal or gas produced in this State.

The Commission concludes, however, that APCo, through its Application, its testimony, and the FEED Study, has provided sufficient evidence to support its decision to meet its anticipated capacity needs by constructing the Project, particularly given the

abundant supply of coal in West Virginia and that the proposed site currently has the infrastructure in place to have coal transported and used at the Plant.

Because APCo does not object to Staff's recommended conditions, with certain modifications, the Commission concludes that APCo should be granted the Certificate to construct and operate 629 MW Integrated Gasification Combined Cycle electric generating unit in Mason County, West Virginia, subject to those Staff recommended conditions, and all as more fully detailed in the Findings of Fact, Conclusions of Law and Ordering paragraphs set forth below.

## **B. COST RECOVERY/PROJECT SURCHARGES**

The Commission has been constantly reminded in this case of the cost of the Project. Much of the prefiled testimony and examination at the hearing touched, either directly or indirectly and to one degree or another, on the cost of the Project. It is impossible for the Commission to consider this Project (i) without being aware of the substantial current estimated cost of \$2.23 billion for the Project, (ii) without an awareness of the increasing number of even routine "run of the mill" utility projects that return to the Commission because the utility failed to guard against or contemplate construction and materials escalations and hence "undershot" the cost of that construction, or, (iii) for those of us who lived through the nuclear plant construction era, without an awareness of the tremendous cost overruns and prudence debates of that era and for that technology.

By the same token, technology does change (and most frequently to a higher cost), construction and materials costs do escalate, energy cost escalations do affect all aspects of products, and societal demands for a clean and safe environmental compliance do impose additional costs as a trade off for that compliance. The question is not whether a planned project will cost more than the project it replaces or supplements, but frequently is the order of magnitude of the higher cost. Counsel for CAD in his opening argument and CAD in its testimony and Brief stressed in their typical lucid manner the absolute and comparative cost of the Project, but by the same token CAD did not suggest that the IGCC technology was something that this State should avoid. It is within the maelstrom of these cost considerations and concerns that the Commission must grapple with the financial and ratemaking implications of the Project.

APCo has proposed an extraordinary project. The Commission has never before considered an application of this scope. In addition to the traditional utility tests for a certificate pursuant to W.Va. Code §24-2-11, including the cost of the Project and whether adequate financing has been proposed, the Commission must take into consideration the Legislature's statutory preference for electric generation projects that use coal as a fuel source, as expressed in W.Va. Code §§24-1-1 and 24-2-1g.

Although the Parties to this proceeding generally support the need for APCo to construct a coal-fired plant to provide additional generating capacity, there is, as one would

expect, virtually uniform opposition to APCo's proposed ratemaking treatment from most of the intervenors. Staff, WVEUG and CAD all argue that "traditional ratemaking concepts" should apply to a project that is, in the opinion of the Commission, anything but traditional. Under the traditional ratemaking approach, APCo's ratepayers would not begin to pay for the Project until it begins providing service to them. In fairness, several of these intervenors have suggested other forms of rate relief that, while forward looking, are not as "progressive" as the Project Surcharges. APCo argues that this \$2.23 billion Project is so extraordinary that ratepayers will both pay more and experience a larger rate increase if APCo does not recover financing or construction costs until the Project is providing service.

The timing and amount of rate increases, particularly those tied to large public utility plant additions, are always difficult issues for the Commission, and the suggested treatment of these increases is one that historically has been limited only by the ingenuity of the utilities, the intervenors and the lawyers and accountants that appear before the Commission. Given the magnitude of the estimated costs for the Project and the Commission's experience in recent years that construction costs generally exceed estimates in certificate proceedings, the Commission's focus in this proceeding has been on consideration of (i) how to finance the Project (a project that we otherwise strongly believe and have ruled should receive the Certificate requested), (ii) how to limit or minimize or in some other way alleviate the impact of the Project on the ratepayer, (iii) how to provide meaningful and ongoing regulatory oversight of the Project and (iv) how to require APCo to reasonably and adequately manage the Project and its costs and at the same time bear its share of the proposed risks of the Project.

The Commission will first address the uncertainties regarding the Project's actual financing and construction costs and then address specific financial issues, including APCo's proposed rate impacts and specific tax issues.

### **1. General Discussion of Construction Costs and Pricing.**

We repeat -- the Project is expensive. In fact, the estimated cost of the Project exceeds the combined cost of all other planned projects in the AEP-East Zone. These projects will in total provide about 2,360 MW of baseload, intermediate and peaking capacity for the AEP East and West zones. Tr. at 170-172; CAD Cross Ex. 1. Mr. Weaver of APCo explained, however, that the Plant, because of its low variable cost of production, would dispatch just after the Cook nuclear facility or a hydro plant and argued that it is not accurate only to compare total estimated project costs, without considering the cost of operation over the life cycle of the plant. Tr. at 172, 173.

APCo last added capacity in 2005 when APCo purchased the Ceredo plant, a 516 MW gas-fired facility, for \$87 million. That cost corresponds to a price of \$167 per kW. This purchase reduced APCo's revenue requirement by \$11 million when the AEP Pool impact is considered. Tr. at 35, 36.

The addition of 629 MW of capacity to APCo's Primary Capacity in the AEP Pool will reduce APCo's Pool-related costs by reducing both the capacity equalization charges and primary energy purchases. The estimated reduction in these costs over the first operating year of the Plant is estimated to provide about \$83 million of cost offsets for West Virginia ratepayers. TRE Ex. 1 at 10; see TRE Ex. 2.

As discussed above, APCo estimates the Plant will cost \$2.23 billion. DEW Ex. 1 at 8. APCo witness, Mr. Jasper, testified that the cost estimate is as reasonable as possible at this time. WMJ Rebuttal Ex. 1 at 1. Because of the unprecedented recent escalation in costs for commodities, manufactured equipment, and labor, under current market conditions, APCo believes it is unrealistic to expect APCo to establish firm pricing. *Id.* at 2. The increased costs of these items apply to any facility - not just the Project. APCo has conducted an extensive FEED process that resulted in thousands of engineering drawings and specifications, a detailed cost estimate at current pricing as of November 2006, and a detailed project schedule. *Id.* APCo indicated that the FEED process mitigated every possible risk that can be mitigated at this time.

The Commission recognizes the innovative and groundbreaking nature of the Project. The Plant must provide additional baseload generating capacity and at the same time be designed or "capable" (if not actually constructed) to meet new environmental requirements for which technology may not yet be viable. Because of these challenges, the planning is far more cumbersome and uncertain than a traditional coal-fired plant. The Commission also understands the complexity and uncertainty about the Project's final cost. APCo has gone to great lengths and efforts to minimize that uncertainty. However, the Commission is not prepared to conclude today that APCo's estimated cost is a reasonable final estimate; instead, the Commission will require the cost estimate to be subject to periodic review as discussed later in this Order.

Cost escalation for utility plant projects is always a concern, and is of particular concern for a project already estimated at \$2.23 billion. Large plant construction costs and the prices for certain commodities, including nickel, copper, cement, iron and steel, have escalated since 2003. APCo provided the average historical annual escalation of costs from 1986 through 2003 and the average annual escalation for the last 40 months. MWR Ex. 1 at 17, 18. According to the United States Bureau of Labor Statistics Producer Price Indices, the annual escalation of power plant equipment and costs has been about seven percent since 2004. MWR Ex. 1 at 18; Tr. at 121.

During the FEED process, GE/Bechtel obtained vendor pricing for equipment and developed the quantities of bulk commodities - such as piping, cable and conduit, concrete and steel - needed for the Plant. Seasoned AEP employees were integrated into the GE/Bechtel project team during the FEED study. WMJ Ex. 1 at 9.

The estimated direct costs of the base plant, a baseline cost estimate with transmission interconnection, is \$2.16 billion based on November 2006 pricing. The estimate includes

\$250 million for escalation and contingency, but because the market has been extremely volatile in recent years, it is impossible to get a reasonable pricing fixed at this time. WMJ Ex. 1 at 15, 16. In sum, the estimated cost of the Plant is:

Direct cost of the Plant,	
based on November 2006 FEED study	\$2,160,000,000
Corporate overheads (about 3%)	<u>70,000,000</u>
	\$2,230,000,000

Tr. at 245-247. Mr. Jasper testified that it is reasonable to conclude that there has been some price escalation since the FEED study was completed, but he testified that the \$2.23 billion figure is still a good estimate. Tr. at 247, 248.

## **2. The Pricing Mechanism under the Contract.**

APCo proposes to enter into a lump-sum turnkey contract to cover substantially all of the Project with one set of guarantees. This approach provides guarantees with higher limits and more comprehensive coverage than if the equipment and systems were supplied by individual vendors. WMJ Ex. 1 at 4, 5.

The Commission and the Parties extensively examined Mr. Jasper about the estimated pricing for the Project. He testified that, under the FEED study and APCo's approach to the contract, the quantities of equipment, material and labor are known, but not the price. He explained that the FEED process did all that it was feasible to do to control the cost of the Project by developing details of the quantities of equipment, materials and labor to be used in the Project. WMJ Rebuttal Ex. 1 at 2, 3. It is not feasible, however, to lock down the unit prices of equipment, materials, and labor for a project of this magnitude. Those will be whatever the market dictates at the time the items are contracted for or their costs are otherwise incurred. Id. The contractual price adjustment mechanism was explained by Mr. Jasper in detail. WMJ Ex. 1 at 15-18.

Under the pricing arrangement, GE/Bechtel, for instance, will be responsible for any overruns in quantities of pipe or labor productivity. Tr. at 251, 252. Mr. Jasper characterized the operation of the pricing arrangement as a "lock box" approach. If the contract, for instance, states that 10,000 feet of pipe are needed at \$10 per foot, but 11,000 feet of pipe are actually used, the Commission's understanding is that GE/Bechtel will pay for the extra pipe. However, if the price for the pipe escalates from \$10 to \$11 per foot, APCo has to make up the price differential. APCo will be able to audit the new bases for pricing, and the contractor is required to demonstrate to APCo that fair, competitive pricing has been obtained. Tr. at 260-262.

GE/Bechtel was selected for the Project because of its past history and experience in the utility, energy and chemical industries. WMJ Ex. 1 at 5, 6. Although APCo proposed a turnkey arrangement for a bulk of the work, APCo will have continual oversight over the

Project. Tr. at 248, 249. APCo also did not include certain work - i.e., coal handling, electrical interconnections - in the contract because it believes it has the background and experience in those areas to manage that construction in house. Tr. at 250.

APCo proposes that GE/Bechtel will act as a single contractor, with joint and several liability for the performance of the contract. They have agreed on the major terms and expect to sign the contract later this year. Under the contract, APCo will wait until all appropriate regulatory approvals have been obtained before giving GE/Bechtel the notice to proceed. WMJ Ex. 1 at 15.

After APCo receives regulatory approvals from Virginia and West Virginia, it will issue a partial, limited notice to proceed, under which GE/Bechtel will fine tune the scope and costs and revise its portion of the plant's cost estimate. WMJ Ex. 1 at 16. Under the proposal, the following cost categories will be updated:

- (1) Major equipment and subcontracts. Major equipment and subcontracts for more than \$1 million will be competitively rebid at the appropriate time.
- (2) Plant equipment and subcontracts. Plant equipment and subcontracts for less than \$1 million will also be competitively rebid at the appropriate time.
- (3) Bulk materials. Actual pricing for bulk materials will be obtained through competitive quotes.
- (4) Construction equipment and construction and start up materials. Actual pricing for construction equipment and construction and start up materials will be obtained through competitive bidding. Gasoline will be obtained through competitive bidding. Gasoline and diesel prices will be adjusted based on prices published by the Department of Energy.
- (5) Craft labor rates. Craft labor rates will be actual corresponding labor rates.
- (6) Non-manual services rates. Actual corresponding rates paid to the support staff personnel will be used for non-manual services rates.
- (7) GE manufactured and proprietary equipment. The parties will agree on how to adjust the price for GE manufactured and proprietary equipment before executing the contract.

WMJ Ex. 1 at 16-18. APCo estimates the substantial completion date for the Project will be at 46 months after full notice to proceed is given to the contractor. WMJ Ex. 1 at 18, 19; WJM Ex. 2.

Mr. Jasper testified that the IGCC plant recently approved in Indiana, a 630 MW GE/Bechtel facility, will use essentially the same technology being proposed for the Project. The final cost estimate for the Indiana plant was \$1.95 billion. Tr. at 254-256. APCo

believes that some of the work that Duke Indiana will do itself poses too great a risk to APCo and its customers in terms of potential interference and risk of claims with the contractor. Tr. at 255, 256.

Mr. Jasper also explained that the FEED process did all that it was feasible to do to control the IGCC Project costs by developing details of the quantities of equipment, materials and labor to be used in the project. WMJ Rebuttal Ex. 1 at 2, 3. The contractual price adjustment mechanism is explained by Mr. Jasper in detail. WMJ Ex. 1 at 15-18. We conclude that CAD's proposed cap provides no control of prices because they may be beyond the control of APCo.

It is the Commission's usual practice to require a utility to petition for approval of major changes in a project's cost or scope, and the Commission will continue that practice in this proceeding. APCo indicates that after it receives regulatory approvals from Virginia and West Virginia, it will issue a partial, limited notice to proceed, under which GE/Bechtel "will fine tune" the scope and costs and revise its portion of the plant's cost estimate. To the extent that the estimated cost of the Project, after the next round of "fine tuning of cost calculations" is made, exceeds the \$2.23 billion estimate in the Application, APCo shall file for an amendment to the Certificate before proceeding.

Staff raises the argument that there is less incentive for APCo to control the construction costs because APCo is essentially "guaranteed" a revenue stream from the ratepayers if the Commission approves the Project Surcharges. *Id.* The Commission concludes that APCo is receiving no such "guarantee." APCo will be required to document, support and justify its Project Surcharges to the Commission. While it is true that customers will have to pay rates which partially reflect the cost of the Project sooner than under "standard ratemaking approaches," the phase-in of rates and the other long-term benefits of the Project to the State, the customers and the other interests in the State, in the opinion of the Commission, offset the downside of paying Project costs sooner rather than later. Furthermore, there is always a risk, regardless of endless prudence, that any utility project can collapse or be abandoned, but the Commission is comfortable that it has taken, or will take, such steps to reduce the impact of such abandonment as are reasonable. The continuing prudence reviews established in this Order include the opportunity to review whether the utility has exercised due diligence and prudence in the construction of its Project.

### **3. Cost Cap & Incentive Plan.**

The Project may well be in the nature of a "first of its size/first of its kind" built in the United States. There obviously are risks to constructing and operating such a facility, particularly at the estimated cost of the Project that likely makes it one of the most expensive power plants in the United States. CAD argued that, without some type of cap on construction costs, the ratepayers would bear all of the risk associated with future cost increases. CAD Ex. 1 at 12-14.



a. CAD Proposal. CAD requested that if APCo decides to proceed with construction of the Project the Commission hold APCo to the cost estimates presented in this case. By the same token, however, CAD indicated that if APCo could build the plant for less than its estimated cost, the Commission should permit APCo to retain 25% of any savings. CAD Ex. 1 at 2-4. CAD proposed a construction cost cap of \$2,236,000,000, a number calculated by adding the \$6 million for the SCR equipment that CAD recommends be included in the Project to APCo's \$2.23 billion estimated construction cost.

CAD's cap would apply only to construction costs, and not to fuel, operation and maintenance expenses, or taxes and tax credits. CAD indicated that the cap could be adjusted to add the equipment costs to make the Plant carbon capture ready, but APCo could not recover any capital costs on expenditures in excess of the cap. CAD Ex. 1 at 12-14; Tr. at 358, 359. CAD admitted that the proposed cap is only effective to the extent it is possible to build the Project at a cost below that cap. Tr. at 358-361.

APCo opposed CAD's recommendation for a \$2.236 billion cap. APCo witness Jasper explained that the FEED process did all that it was feasible to do to control the IGCC Project costs by developing details of the quantities of equipment, materials and labor to be used in the project. WMJ Rebuttal Ex. 1 at 2, 3. It is not feasible, however, to lock down the unit prices of equipment, materials, and labor, which will be whatever the market dictates at the time the items are contracted for or their costs are otherwise incurred. APCo argued that it cannot lock down prices at this time or provide a reasonable level of escalations to apply to the Plant's cost. WMJ Rebuttal Ex. 1 at 2, 3; Tr. at 571, 572. APCo argues that CAD's proposed cap provides no incentive to control such prices because it provides no ability to control them. Recent history has shown that the cost of labor and commodities has escalated at significant and volatile rates. Tr. at 571, 572.

In response to CAD's cost cap proposal, Mr. Eads of APCo testified that limiting the total amount of construction costs that can be reflected in future rates is tantamount to a pre-determination that the costs above the level of that cap have not been prudently incurred, without any evidentiary showing of imprudence and without any opportunity to contest whether the costs are prudent or imprudent. TRE Rebuttal Ex. 1 at 18.

APCo regards CAD's proposed construction cap as unfair and unreasonable from both a practical and regulatory perspective; moreover, APCo also argues that a rate cap is utterly inconsistent with CAD's assertion that it is "advocat[ing] that APCo follow traditional ratemaking." APCo Reply Brief at 8.

b. Staff Position and Proposal. Staff also opposed the cost cap proposal, but for different reasons. Mr. Oxley, the Staff witness, indicated that Staff opposed CAD's "cap and share costs savings" for several reasons, primarily because Staff believes that would be rewarding APCo for doing what is otherwise required to do by statute - provide safe electric service at the lowest reasonable cost. Staff also argued that the rate cap might provide APCo with an incentive to re-assign costs to reduce the project's cost or to reduce

plant costs to produce short-term financial rewards to the detriment of long-term service to ratepayers. Staff Ex. 2 at 1-3; see also Staff Brief at 6, 7.

The Commission does not believe that a cap on construction costs is reasonable. APCo should be able to recover the reasonable costs associated with constructing and operating the Project. It has never been the policy of the Commission that utilities be capped for reasonable costs associated with providing public service. The Commission will not adopt such a position now. It will, however, require APCo to demonstrate that those costs are reasonable.

For the reasons stated by Staff and for the further reason that the rate cap is not a very reliable number at this stage, the Commission will not adopt CAD's proposal to impose a rate cap or to share costs savings based on that rate cap. As we noted earlier, the Commission shares the broad-based concerns about the magnitude and uncertainty of the estimated cost of the Project, particularly because no APCo witness was willing to provide a value for escalation. The Commission understands full well that all utility construction projects face similar difficulties regarding estimations of project cost, but given the \$2.23 billion projected costs of this plant and because it is one of the first times IGCC technology will be used on this large a scale for electric generation, the Commission will do everything in its power to guard against the risk that the Project will experience excessive construction costs.

As noted earlier in this Order, after APCo receives regulatory approvals from Virginia and West Virginia and "fine tunes" the scope and costs and revises its portion of the Plant cost estimate, we expect APCo to advise us of that revised estimate. To the extent that the revised estimated cost of the Project, after that next round of "fine tuning of cost calculations" is made, exceeds the \$2.23 billion estimate in the Application, APCo shall file for an amendment to the Certificate advising the Commission of the higher contract price and must receive further authorization before proceeding further.

The Commission is also aware, through a review of the briefs in the case, that Staff proposed alternate forms of "incentive ratemaking mechanism" during briefing of this case. Staff's different approaches are by and large "Variations on a Theme" using APCo's proposed recovery mechanism. APCo Reply Brief at 19. The Commission has noted a disturbing and recent trend by parties to Commission proceedings to discuss "extra-record" materials in briefs. While APCo indicated that it was "not unappreciative of the Staff's efforts and its ingenuity" (APCo Reply Brief at 19), substantive suggestions must be introduced within the hearing process to be vetted and aired. Raising substantive matters for the first time in a brief is not the correct approach. The Commission agrees that at least the first two Staff alternatives are not merely arguments; they are new substantive positions that should have been articulated during the hearing phase of this proceeding and supported by an evidentiary basis in the record. The approach utilized by Staff allows for no evidentiary exploration of the details and impacts of the proposals. Id. at 20. APCo correctly argues that the deficiency cannot be remedied now. Id.

While APCo correctly characterized Staff proposals, APCo did acknowledge that a special rate case might have merit as a vehicle for dealing with the rate adjustment needed at the time the plant goes into service. If timed properly, that case could serve the same function as the final rate "step" proposed by APCo prior to a base rate case. It might also answer some of the objections raised by several of the Parties that the timing and schedule of an ENEC docket is too short to permit a proper evaluation of the Project costs. The Commission believes that the ENEC proceedings provide sufficient time for review of a great many complex elements and has suggested later in this Order a modification and extension of the time of those ENEC proceedings if the cost of Project appears to be getting out of hand. Using the special base rate case proposed by Staff might provide a great deal more time and would presumably satisfy those objections.

APCo did suggest that, given the time frame of the Project (the in-service date of the Project is still 4-½ years off), ample time remains in which the Parties could discuss the Staff's proposal and determine if they all believe it would be a desirable modification of the Commission Order in this case. Id. at 21. APCO suggests, and the Commission agrees, that if the Parties are able to reach such an agreement (or, for that matter, a full and reasonable agreement on any number of other issues discussed in this Order), they could apply to the Commission for the adoption of a concrete and detailed proposal along those lines, and there would be more than adequate time for an evidentiary hearing on the matter, if one is required. Id. APCo has indicated its willingness to participate in those efforts if it is of interest to the other parties.

#### **4. APCo's Proposed Project Surcharges.**

Obviously, the most contested issue in this case is the request by APCo for the Commission to approve a cost recovery mechanism, through the use of Project Surcharges, for the timely recovery of the West Virginia retail jurisdictional share of the cost of the Project.

a. APCo Proposal. APCo is not proposing any change in rates in this proceeding for its Project Surcharges. TRE Ex. 1 at 10. In "simple terms," APCo is requesting that the Commission approve for use with the Project, with one modification, the continuation of the same type of surcharge mechanism as is used for the 765 kV/Scrubber Surcharges adopted for APCo and WPCo in Case No. 05-1278-E-PC-PW-42T. TRE Ex. 1 at 3. As explained by Mr. Eads, that construction surcharge mechanism provides for annual adjustments of retail rates to provide for the timely recovery of the on-going costs of significant construction projects involving large capital investments made over a time span of several years. Id. This mechanism is currently being utilized effectively for the 765 kV/Scrubber Surcharges, and APCo argues that the mechanism is clearly workable with other large capital intensive construction projects, such as the Project. Id.

APCo proposes that by March 1st of every year, and in conjunction with APCo's annual ENEC filing, APCo would submit revised construction surcharge rate factors

designed to recover the annual revenue requirement associated with the construction projects. Id. at 4. For projects not yet in service, the revenue requirement is based on: (1) the account balance of CWIP as of December 31st of the preceding calendar year for the project; (2) an overall rate of return determined using a thirteen-month average capital structure and cost of capital, including a 10.5% rate of return on common equity (“ROE”), also as of December 31st of the preceding calendar year, and; (3) an allowance for incremental state and federal income taxes. Id. After an annual construction surcharge is implemented in rates, providing APCo with a cash allowance for the financing costs of the project, APCo ceases recording any further AFUDC on the related CWIP balance. Id. CWIP balances in excess of amounts reflected in the surcharges, however, would continue to accrue AFUDC during the construction period. Id.

The Project Surcharge mechanism begins recovery of the Project’s costs in gradual annual increments, currently projected to amount to rate increases of 1.7% in 2009, 3.2% in 2010, 5.3% in 2011, and 2.2 % in 2012, or a total increase of 12.4%. TRE Rebuttal Ex. 1 at 5. The traditional ratemaking advocated by CAD, Staff, and WVEUG, by contrast, is projected to result in a single rate increase of 14.4% after the Project goes into service. Id.

When asked about the Project Surcharges, CAD witness Harris admitted that traditional ratemaking would produce a higher rate increase than the Project Surcharges and would impose it in one step. Tr. at 363. APCo asserts that, in fact, over the 40-year expected life of the Project, the Project Surcharges are projected to result in total customer payments for the Plant’s construction of approximately \$229 million less than traditional ratemaking. TRE Rebuttal Ex. 1 at 5. While there was obvious disagreement of the impact of the Project Surcharges, the Parties generally agreed that the Project Surcharges would produce lower rate increases than traditional ratemaking.

APCo contends that the Project Surcharges would encourage investment and improve APCo’s financial condition through the receipt of cash earnings as opposed to non-cash earnings realized under the traditional AFUDC approach. RVH Rebuttal Ex. 1 at 8. According to APCo, this improvement would have a direct correlation to the cost of capital ultimately paid by the ratepayers. Id. Therefore, the capital cost savings that would result from the improved financial condition of APCo would benefit the ratepayer.

These same public policy objectives have been recognized recently by the Federal Energy Regulatory Commission (FERC), which has held that, although the inclusion of CWIP in rate base is a departure from status quo, such treatment may be appropriate for some projects because “it provides up-front regulation certainty, rate stability, and improved cash flow for applicants, thereby easing pressures on their finances . . . .” Id. at 9 (citing FERC Commissioner Wellinghoff in Docket No. EL-06-50-001).

Staff, CAD and WVEUG objected to the proposed Project Surcharges and made various recommendations for the “proper rate recovery mechanism” to be used if the Certificate for the Project is granted

The amount of net plant typically included in rates is the historic 13-month average plant balance. Without good cause, the Commission usually does not depart from an historic 13-month average rate base in context of a Rule 42T case. See, Hope Gas, Inc., Case No. 93-004-G-42T, Commission Order entered October 29, 1993 at 7. CAD Ex. 1 at 10-12.

APCo is not proposing to incorporate any deferred taxes or accumulated deferred taxes in its Project Surcharge; instead, the final surcharge is based on the year-end CWIP balance. Further, no depreciation expense will be incurred until after the plant goes into service. Mr. Eads testified, however, that APCO is proposing to project a full year of other expenses and stated that if the Plant goes into service by the third quarter of 2012, the final Project Surcharge could be in effect for about 18 months before it was superseded and incorporated into new base rates. Tr. at 324-326.

Mr. Eads agreed that the Project Surcharges change from about \$16 million to \$46 million to \$95 million and finally to \$116.3 million during the construction phase of the Project. These surcharges will be in addition to the expected rate impacts of APCo's ongoing construction of its 765kV transmission facilities and scrubbers. The existing 765 kV/Scrubber Surcharges, separate from the proposed Project Surcharge, will continue in APCo's rates until the next base rate case filed in 2010. APCo expects this 765 kV/Scrubber Surcharges to increase to about \$61.5 million in its next ENEC proceeding, and to increase to about \$68.4 million in 2009, the same year that the first Project Surcharge would go into effect. In 2010, the 765 kV/Scrubber Surcharges would go to about \$73.8 million and the Project Surcharge would be about \$46 million. In 2011 the Project Surcharges would be about \$95 million and the 765 kV/Scrubber Surcharges would be rolled into base rates. Tr. at 326-329.

Mr. Eads conceded that under the proposed Project Surcharges APCo would earn a cash return before the plant is operational, while under traditional ratemaking AFUDC would increase APCo's income on the income statement and increase the Project's electric plant investment. Under traditional cost recovery methodology a regulated utility is also entitled to receive cash through increased rates based on a rate of return in addition to annual depreciation expense on the plant investment. Mr. Eads stated that this only occurs after the utility receives an order that changes the utility's rates and that may be nine to eighteen months after the facility is operational. Tr. at 333, 334.

Mr. Eads testified that although he does not know the exact process that will be used to check the invoices and numbers presented in the ENEC proceeding for the Project under the APCo Project Surcharge methodology, he believes there is a stringent internal and external audit process that will confirm those numbers. He also explained that, while APCo wants the most current numbers available, it will use actual year's ending balance. That means that the rates may not go into effect for six months after the expenditures are incurred, but that will also eliminate the uncertainty of what the numbers might be. Tr. at 337-339.

Mr. Eads indicated that, in his opinion, there are two reasons that justify the modification of the existing surcharge methodology for the final Project Surcharge. First, the fixed costs to operate the Plant, about \$3.7 million per month, are so much greater than the fixed costs to operate the scrubbers, about \$400,000 a month, and that APCo faces a greater risk of under-recovery of the Project costs. Second, when the Project begins providing service, APCo's costs under the AEP Pool will be reduced, and changes in the AEP Pool costs are addressed in APCo's ENEC proceeding, and, therefore, will be passed through to customers by reducing APCo's ENEC expenses. The fixed costs to operate the Project, however, will not be recovered for some time into the future unless the final Project Surcharge is adjusted to reflect those costs. TRE Ex. 1 at 6, as corrected at the hearing. Tr. at 303, 304.

According to Mr. Eads, the ENEC mechanism will immediately pass along the Project cost savings to APCo's customers. He acknowledges, however, that those savings may not be in the form of immediate cash via a rate reduction. Instead, Mr. Eads testified that means the reduction will be reflected in the deferred accounting process that operates in the ENEC. The reduction in the AEP Pool costs, the reduced capacity equalization, and any reduction in primary energy net of the Project's fuel increase will be reflected in the ENEC proceedings' deferred account. Tr. at 316-318. Moreover, a month after the plant goes into service, APCo is proposing an increase in the final project surcharge.

Mr. Eads testified that a number of Project elements would be handled in the ENEC. For example, once the Plant is operational, fuel and consumables will increase the ENEC. The pool payments and primary energy payments will reduce the ENEC cost. Mr. Eads believes that once all elements affecting the Plant and the ENEC are considered, there will be a net reduction in the West Virginia jurisdictional ENEC costs of about \$42.1 million. Tr. at 318, 319.

APCo does not expect construction to begin until sometime after the first quarter of 2008 because APCo needs approval from both this Commission and the Virginia State Corporation Commission. Thus, the Project Surcharges would be filed in conjunction with the 2009 ENEC proceeding and would become effective July 1, 2009.

Mr. Eads testified that the proposed Project Surcharge would gradually phase-in the rate impact of the Project with the dollar and rate increase impact in the years shown below:

\$15.9 million, or 1.7%, in 2009  
\$30.0 million, or 3.2%, in 2010  
\$49.2 million, or 5.3% in 2011

If commercial operations for the Project begin mid-2012, there would be a final net rate adjustment of \$21.2 million, or 2.2%, after AEP Pool cost reductions are considered. In total, the revenue requirement will be about \$116,294,000, or a total 12.4% increase in rates, from the Project. TRE Ex. 1 at 7, as corrected at the hearing. Tr. at 304.

As previously indicated, APCo is not seeking approval of a rate increase in this case, only approval by the Commission of a Project Surcharge mechanism. APCo will request and support the Project Surcharges in future ENEC filings after the Project construction has begun and actual construction costs are known and documented. TRE Ex. 1 at 10.

b. Staff Position and Opposition. Staff opposes the Project Surcharges. In its initial brief, Staff argued that it does not believe that APCo has provided any evidence that it will be harmed if it does not receive cash before the plant is operational. Staff Brief at 2. Staff believes that “cash now” is meaningful to all persons impacted by this decision, including the ratepayers. Id. Staff also argues that the Project Surcharges essentially shift the risk of the Project from APCo to the ratepayers. Staff also questions what would happen if APCo decided to stop construction of the Project after the ratepayers will have paid for most, if not all, of the financing carrying costs of the Project that would have been incurred as of that date. Id. Staff also argues that under the Project Surcharge approach, there is less incentive for APCo to control the construction costs because APCo is essentially guaranteed a revenue stream from the ratepayers during construction. Id.

Staff acknowledges that the Project Surcharges would result in a lower rate base investment and revenue requirements, but it argues that ratepayers would be harmed because the ratepayers would have to pay rates much sooner (and argues that some may pay higher rates who will never receive the benefit of the Project). Id. Staff further argues that the Commission has allowed for the use of construction surcharges or step rates to recover costs of projects, but only in certain limited circumstances, including in APCo’s last base rate case (Case No. 05-1278-E-PC-PW-42T) for the federal mandated pollution control investments and the Wyoming-Jackson transmission line; for Monongahela Power Company’s (Case No. 91-231-E-CN) installation of federal mandated scrubbers; and in cases involving so-called “step rates” for the construction of water treatment plants by West Virginia American Water Company (Case No. 95-0228-W-42T) where, Staff asserts, there were unique operational problems caused by low customer growth and the need to invest substantial capital in the replacement of the plant. Id. at 9-11. Staff does not believe that APCo has demonstrated any of the circumstances under which the Commission has granted a construction surcharge in the past. Id. at 11.

Instead of APCo’s Project Surcharge, Staff recommends an incentive rate recovery mechanism that is slightly different from the traditional rate recovery mechanism found in the Commission’s tariff rules, given the extraordinary costs to construct the project and the extraordinary impact the project will have in increased operation and maintenance (“O&M”) expenses as well as on the capacity settlement payments and primary energy costs under the Interconnection Pool Agreement which will benefit the customers. Id. at 7, 8.

Staff also recommends that the Commission allow APCo to seek timely recovery in rates of the costs of the Project by timing the filing of a base rate case so as to allow rates incorporating the completed Project cost and allowing for rate recognition of the Plant to go into effect at or about the same time the Project is put into commercial operation provided

there is a tracking mechanism in place for the O&M expenses. Id. at 8. While Staff is recommending ratemaking that would qualify as incentive ratemaking under W.Va. Code §24-2-1g, Staff does not believe that APCo has made the showing needed to qualify for incentive ratemaking under that Code section. Id. at 12. Specifically, Staff does not believe that APCo has made the showing that it will comply with the requirement in that section that it use coal produced in West Virginia for no less than seventy-five percent of its fuel requirements. Id.

c. CAD Position and Opposition. CAD also opposes the Project Surcharges. CAD argues that under the Commission's traditional ratemaking approach, utilities are not allowed to charge customers for the cost of facilities while those facilities are being constructed; instead, utilities are permitted to accrue AFUDC. AFUDC represents the carrying costs on monies used to fund the new construction. The cumulative AFUDC amount is added to the total construction cost to derive the ultimate value of the plant to be included in utility's rate base. Under this approach, the shareholder absorbs the risk of building the new utility facilities and provides the funds to construct them. After the facilities are used to provide service to customers, the customers provide a return on and return of the shareholder's capital used in constructing the utility facilities. This practice provides an incentive to the utility and its shareholders to make prudent and cost effective investments. CAD Ex. 1 at 5, 6.

CAD does not believe that the Project meets the Commission's traditional tests for extraordinary rate relief. CAD's Brief at 7. CAD also argues that the Commission has generally recognized three exceptions to the traditional ratemaking approach for new investments. Id. at 9. First, the Commission has granted terminal treatment or recognition of post-test year rate base additions when the investment is "non-revenue producing, non-expense reducing." Id. Second, when investments are made as a result of government-mandated environmental controls, the Commission has allowed special ratemaking treatment, usually in the form of accelerated or interim rate recognition. Id. Third, the Commission has allowed special ratemaking treatment when a utility has demonstrated that without such treatment it will be subject to "extreme financial hardship." Id. at 10.

CAD objects to the Project Surcharges and states that those surcharges will be more costly to ratepayers than traditional ratemaking. Id. at 15. CAD argues that the Project Surcharge would shift the risk exposure of the Project from APCo to the ratepayers.

As fully discussed earlier, CAD proposes that the Commission impose a cap of \$2.23 billion on the total cost of the construction of the Project that could be recoverable in future rate proceedings. CAD Ex. 1 at 12-14; CAD Initial Brief at 18. Under CAD's cap proposal, even if every dollar of the Project construction costs is prudently incurred, if those costs exceed the \$2.23 billion projected cost estimate developed in 2006, the costs will be disallowed. Tr. at 358 (CAD witness Harris). CAD recommended that the cap be coupled with a "shared savings" concept so that if APCo is able to bring the plant on-line for less than



the capped amount, it could retain 25% of the total savings. CAD Initial Brief at 18. CAD acknowledges that such a cap is not a feature of traditional ratemaking. CAD Ex. 1 at 14.

CAD also recommends that APCo be required to take advantage of all applicable tax credits and deductions, including the IRC §199 deduction and that the Commission initiate a task force to examine demand side management/energy efficiency programs for APCo. CAD Initial Brief at 19-21.

d. WVEUG Position and Opposition. WVEUG also recommends that the Commission reject the Project Surcharge approach. WVEUG Brief at 20. In its initial brief, WVEUG argues that the Project Surcharges do not comport to the traditional Commission ratemaking principles because current ratepayers pay in advance for a service they will not receive for a number of years. Id. at 23. WVEUG also argues that the Project Surcharges represent an effort by APCo to shift the substantial financial risk of the Project from APCo and its shareholders to the ratepayers. WVEUG argues that this violates sound ratemaking principles protecting ratepayers from being responsible for construction projects before they are used and useful. Id. at 24.

WVEUG argues that the Project Surcharge would result in substantial net present value harm to ratepayers, in addition to the APCo's already scheduled increases from its current construction surcharge and base rate filings. Id. at 27. WVEUG asserts that the West Virginia ratepayers would be forced to shoulder the burden for benefits that would accrue to the entire AEP system. Id. at 29.

WVEUG also believes that the Project Surcharge approach is flawed because it does not comport with W.Va. Code §24-2-1g; because the Project does not comport to the same circumstances as those which gave rise to the existing construction surcharge; and because it does not provide for sufficient opportunity for review of costs. Id. at 30-34. WVEUG does not believe that APCo has a financial need for the dramatic change in ratemaking. Id. at 35. WVEUG appears to support the traditional form of rate recovery for the IGCC facility. Id. at 36. WVEUG argues that the Commission has historically limited the use of special ratemaking treatments of this nature to the three special circumstances described by CAD and Staff.

e. APCo Response and Clean Coal Statute. CAD, and, to a lesser extent, Staff, and WVEUG consider several bases upon which the Commission has acted in certain other cases to justify departures from the traditional ratemaking paradigms. CAD Brief at 7-12; Staff Brief at 9-11; WVEUG Brief at 20-25 and 30-37. APCo in its brief, however, argues that the Project is far from conventional and warrants special treatment. APCo Reply Brief at 10.

APCo argues that these various departures from "traditional ratemaking" are in no way exhaustive of the legitimate bases available to the Commission in assessing each new and different case that comes before it and determining, in a particular set of circumstances, what

ratemaking solution is best suited to that case. Id. Just as the Commission determined in the various cases cited by CAD, Staff, and WVEUG, that, for different reasons, departures from traditional ratemaking were warranted, APCo believes the Commission possesses the ability to reach the same conclusion in other circumstances for other reasons. Id. APCo states that the ratemaking authority conferred on the Commission by statute is a broad and flexible power and the only limitations on its exercise are constitutional and statutory limitations, as interpreted authoritatively by courts of competent jurisdiction. Id. at 11.

APCo points out that none of the three particular bases for a departure from traditional ratemaking considered by CAD, Staff, and/or WVEUG (and deemed by them to be inapplicable here) is the basis on which APCo relies in the instant proceeding. Id. One of those bases devised and relied on by the Commission for a departure from a traditional ratemaking convention (i.e. the use of year-end rate base value rather than an average value) is applicable to investments in facilities which are “non-revenue-producing” and “non-expense-reducing.” CAD Brief at 9. The Plant obviously will both produce revenues and decrease expenses by generating electricity for sale and improving APCo’s capacity position, thereby decreasing its capacity payments and increasing its entitlement to system sales profits under the AEP-East Pool Agreement. Another basis relied on by the Commission to depart from strict traditional ratemaking and to allow special ratemaking treatment (as CAD puts it, “usually in the form of accelerated or interim rate recognition”) has been in instances involving, again quoting CAD, investments “made as a result of government-mandated environmental controls.” CAD Brief at 9, 10; Staff Brief at 10, 11; WVEUG Brief at 33. APCo does not argue that construction of the Project is required by a current governmental mandate. A third basis relied on by the Commission to depart from traditional ratemaking has been to avoid and/or remedy instances of financial hardship to a public utility. CAD Brief at 10; WVEUG Brief at 35, 36. APCo readily acknowledges that it is not in, and is not projecting that it will be in, a condition of extreme financial hardship. DEW Rebuttal Ex. 1 at 5.

APCo notes that only a modest development in any of the three foregoing bases (which no Party disputes are acknowledged and precedential justifications for the Commission departing from traditional ratemaking conventions) would be needed for the Commission to employ any of them in justification of the mechanism proposed by APCo. (The mechanism itself, of course, is nothing more than a slight modification of the construction surcharge mechanism approved by the Commission in Case No. 05-1278-E-PC-PW-42T to allow interim recovery in ENEC proceedings of costs of APCo’s FSD retrofits and the 765 kV Wyoming-Jacksons Ferry transmission line project. TRE Ex. 1 at 3-6.).

All Parties agree that the Commission has regularly required the use of the “traditional” Rule 42 methodologies and principles as the rate recovery mechanism for utilities in West Virginia. The traditional form of rate recovery is proven as an appropriate method for both the utility and ratepayer to recovery utility costs under ordinary and normal circumstances, and the Commission will continue to rely upon Rule 42 as its rate recovery

process during such circumstances. However, APCo argues that at times, the Commission has been, and will be, confronted with circumstances that justify a departure from the traditional rate recovery mechanism.

Notwithstanding the extensive briefing about the limited exceptions to traditional ratemaking, the principal basis on which APCo is relying for the approval of its proposed Project Surcharge mechanism is the West Virginia Legislature's determinations about the importance of the continued use of coal to generate electricity in an environmentally acceptable manner and its authorization to the Commission to implement rate-making allowances for electric utility investments in, among other things, clean coal technology facilities, if the Commission determines that to be in the public interest. W.Va. Code §24-2-1g.

A review of that statute is instructive. In 1990, the West Virginia Legislature adopted W.Va. Code §24-2-1g, generally referred to as the Clean Coal Statute. That section specifically grants the Commission the authority to make ratemaking allowances for investment in clean coal and clean air technology. Although there have been references to the Clean Coal Statute in other Commission proceedings (such as Monongahela Power Company, Case No. 91-231-E-CN), the Commission believes this case for the Project is a case of first impression under the Clean Coal Statute. The specific language of that section provides in pertinent part, the following charge to the Commission:

(b) Upon a finding that it is in the public interest of this state ... the public service commission shall authorize rate-making allowances for electric utility investment in clean coal and clean air technology facilities ... located in West Virginia which shall provide an incentive to encourage investments in such technology.

(c) For purposes of this section a qualified clean coal or clean air technology facility must use coal produced in West Virginia for no less than seventy-five percent of its fuel requirements.

(d) The public service commission shall determine, at such time and in such proceeding, form and manner as is considered appropriate by the commission, the extent to which any electric utility investment or purchase of power qualify for incentive rate making pursuant to this section.

To support its requested Project Surcharge approach in the Application, APCo specifically relied upon the Clean Coal Statute and the discretion granted to the Commission to authorize rate-making allowances for electric utility investments in clean coal technologies. W.Va. Code §24-2-1g; APCo Reply Brief at 17; DEW Rebuttal Ex. 1 at 5; TRE Rebuttal Ex. 1 at 13.

In fact, according to APCo, IGCC technology is the only power generation technology with proven capability to capture CO<sub>2</sub>. Emissions of CO<sub>2</sub> from an IGCC plant are comparable to those from a supercritical pulverized coal facility equipped with state-of-the-art emissions control equipment, and much lower than from a conventional pulverized coal plant equipped with state-of-the-art emissions controls.

The Project is designed to remove more than 99.5% of the SO<sub>2</sub> and 90% of the mercury and control nitrogen oxides to 15 ppm. An IGCC facility can be expanded to produce feed stock for chemicals, fuels and other products. A typical pulverized coal plant cannot do that.

IGCC technology has the potential to control CO<sub>2</sub> emissions at a significantly lower cost than conventional technologies; requires about one-third less water than a pulverized coal plant; generates less solid waste than a conventional coal plant; and has greater fuel flexibility than conventional coal plants. CO<sub>2</sub> capture equipment will not be installed at APCo's Plant until the CO<sub>2</sub> regulations are known.

Contrary to Staff's assertions, APCo has given assurances in the record that it will comply with requirements of W.Va. Code §24-2-1g(c) that a Clean Coal generating facility use West Virginia coal for at least 75% of its fuel requirement to qualify. Tr. at 513 (APCo witness Waldo).

The Clean Coal Statute provides that the State's additional electric generating capacity should be fueled by coal or natural gas when it is reasonable to do so. APCo has proposed one of the nation's first large-scale uses of IGCC technology to generate electric power, and the Commission expects APCo's project to spur similar investment and innovation in electric generation stations of various sizes across the country.

The Project cost, however, causes APCo to insist that the Project is too risky to build under traditional ratemaking principles. APCo, instead, has proposed the Project Surcharge approach in order to generate some cash while the Plant is being constructed. APCo argues that its proposal provides an incentive to construct the expensive Plant. DEW Rebuttal Ex. 1 at 5, 6; TRE Rebuttal Ex. 1 at 13.

APCo does not expressly or entirely rely upon any of the three bases for a departure from traditional ratemaking considered by CAD, Staff, and/or WVEUG (although the magnitude of the construction is clearly the dominant factor in the analysis that the Commission used to approve certain step rate increases that the Commission authorized for West Virginia American Water Company cases based on completed construction of certain major treatment plant improvements or regional treatment plants). As previously discussed, the Plant will produce revenue and reduce APCo's system capacity payments. APCo does not contend that the Project is required by a current governmental mandate. Moreover, APCo readily acknowledges that it is not in, and is not projecting that it will be in, extreme financial hardship. DEW Rebuttal Ex. 1 at 5.

APCo does, however, argue that the proposed Project is far from conventional. APCo Reply Brief at 10. This Commission does not accept that the reasons the Commission has previously granted for exceptions to traditional ratemaking are the only reasons available to the Commission. Id. The Commission can depart from traditional ratemaking and determine whether a different ratemaking solution is best for particular facts. Id. The Commission's statutory ratemaking authority is a broad and flexible power and the only limitations on its exercise are constitutional and statutory principles, as interpreted by courts of competent jurisdiction. Id. at 11.

WVEUG, on the other hand, argues that W.Va. Code §24-2-1g does not define "rate incentive" or "ratemaking allowance" and that the APCo proposed surcharge is too drastic a departure from traditional ratemaking to fall within the Clean Coal Statute. WVEUG also argues that surcharge alternative to traditional ratemaking arose during the settlement of a case with vastly different circumstances and that mechanism should not be extended to the facts of this proceeding. WVEUG Initial Brief 30-36; see also WVEUG Ex. 1 at 3-5. For the reasons just stated, the Commission disagrees.

#### **5. Commission Position on Project Surcharges.**

The Commission does not accept the arguments of WVEUG, Staff and CAD. The Commission has been granted specific authority from the Legislature under the Clean Coal Statute to consider various ratemaking alternatives, depending upon particular facts and circumstances. The Commission's has been given express authority to determine the "manner and form" and the "extent to which" any electric utility investment qualifies for incentive ratemaking under the Clean Coal Statute. As all of the Parties indicate, the Commission has used rate surcharges and step rates increases to assist utilities in the recovery of the demonstrated cost of construction in various instances, usually relatively high cost projects. See, e.g., Monongahela Power Company, Case No. 91-231-E-CN; and West Virginia American Water Company, Case No. 95-0228-W-42T (Commission Order of January 16, 1996).

The Commission has also recognized in the past that a current rate component for the financing carrying cost of CWIP helps to improve a utility's financial ratings as it substitutes cash earnings for non-cash. This fact alone could lead to lower rates in the future for APCo customers because of higher credit ratings and lower cost of debt. Just as important, however, a CWIP allowance offsets the AFUDC construction cost of a new project and thus lowers the final cost of the project. This leads to a lower rate base in the future and in a more tangible way leads to lower rates than simply the likelihood of lower debt costs in the future.

In addition, while it is not an issue during construction, the Commission notes that many of the benefits associated with the Plant going into service will be automatically flowed-through to customers without them having to wait for APCo to file a base rate case. The benefits of reduced purchased power costs, increased system sales revenues and reduced capacity equalization payments are part of the ENEC calculation. This pass-through of

certain benefits of capacity additions without the regulatory lag of a normal rate case is part of the legitimate concern that APCo addressed regarding "regulatory lag" that it would experience under normal base rate ratemaking before it could begin to recover a return on rate base, depreciation and operating costs associated with the Project once it come online. The regulatory lag that helps to keep the ultimate costs of so-called traditional ratemaking down in the present value studies presented by the Parties may be unfair in this case when the ENEC benefits of the \$2 billion plus Project are going to credited to the benefit of customers starting in the first month that the Plant goes on line (assuming deferred ENEC accounting). In this case, based on the magnitude of the Project, it seems unfair to the Commission that APCo should have to wait for 6 to 18 months (depending on our treatment of Rule 42 requirements) before it can start recovering the rate base, depreciation and O&M costs of the Plant after the construction phase is completed and it goes on-line.

The Commission specifically rejects WVEUG's arguments that the express provisions of W.Va. Code §24-2-1g granting discretion to the Commission under that statute constitute a limitation on the Commission's ability to allow surcharges for Clean Coal Technology inasmuch as the Commission has approved surcharges and step rates based on the completed cost of construction under its general jurisdiction and authority for water projects that carry price tags a fraction of the tag for the Project. Those latter project surcharges were approved by the Commission under our general statutory authority. The Commission believes that it has the general authority to grant construction surcharges for large projects.

The Commission also agrees that W.Va. Code §24-2-1g provides an independent basis for rate incentives, separate and apart from the special circumstances and other exceptions relied upon by the Parties, and we believe that APCo has made a persuasive case that a departure from traditional ratemaking is appropriate in this proceeding under W.Va. Code §24-2-1g. The Commission finds no need to parse through each of the Parties' arguments regarding the three exceptions from traditional ratemaking (although clearly there is room for argument in some of those instances that the Commission has the authority to undertake the actions is taking in this case). The Commission believes that it also has specific authority to do so for Clean Coal Technology.

We thus conclude that (i) the Clean Coal Statute applies in this case; (ii) the Project meets the statutory requirements for Clean Coal technology; and (iii) W.Va. Code §24-2-1g provides a separate and sufficient independent basis for approving the Project Surcharges. We also think it is appropriate to consider whether it is in the public interest to grant the Project Surcharges that APCo has requested.

## **6. The Project, Surcharges and the Public Interest.**

a. APCo Position on Public Interest. APCo argues that statute provides a wholly adequate and independent justification for APCo's proposed rate recovery mechanism. APCo Reply Brief at 17.

The IGCC facility is clearly a clean coal technology facility. The record establishes that beyond dispute. PC Ex. 1 at 3; Staff Ex. 3 at 7; Tr. at 350, 351 (CAD witness Harris). Only WVEUG has no opinion on whether burning syngas produced from coal is a clean coal technology because W.Va. Code §24-2-1g does not provide a definition of clean coal technology facilities. Tr. at 431-433. It only remains for the Commission to determine whether the Project Surcharges proposed by APCo are sensible, reasonable and worthy of adoption in the public interest. And the mechanism that APCo proposes definitely provides an incentive for the construction of the facility. DEW Rebuttal Ex. 1 at 5, 6; TRE Rebuttal Ex. 1 at 13.

The Project Surcharges will appear as a demand charge for customers subject to a demand charge; as a kilowatt-hour charge for customers, including residential customers, billed by the volume of energy used; and will vary for special contract customers, based upon the specifics of each contract. TRE Ex. 1 at 11.

If the plant is constructed within the expected time frame and cost, residential bills, based on using 1,000 kWh per month, are estimated to change as follows:

<b>Effective Date</b>	<b>Incremental Monthly Bill Increase</b>	<b>Cumulative Monthly Bill Increase</b>
7/1/2009	\$1.05	\$1.05
7/1/2010	\$1.99	\$3.04
7/1/2011	\$3.26	\$6.30
7/1/2012	\$1.41	\$7.70

TRE Ex. 1 at 11.

Mr. Eads testified that if the Project begins operating by mid-2012, APCo would likely file a general rate case in early 2013, using the historic test year for the 12 months ended December 31, 2012, and incorporating the Project's costs in base rates. When the plant's costs are reflected in base rates, the Project Surcharges would cease.

The final Project Surcharge will also include an estimate of Plant's first 12 months of operating costs. APCo believes it will have good estimates of depreciation, payroll labor, and the number of employees. While some of the operating costs may be more difficult to estimate, APCo does not believe they are incapable of being estimated. Tr. at 314-316.

APCo argued that the Project Surcharges allow for recovery of the Project costs in gradual annual increments, or a total of 12.4% for the Project. Under the traditional ratemaking approach advocated by CAD, Staff, and WVEUG, the projected result is a single rate increase of 14.4% after the Project is placed in service. TRE Rebuttal Ex. 1 at 5. APCo

also argued that during the 40-year expected life of Project, APCo's Project Surcharge mechanism is projected to result in total customer payments of about \$229 million less than traditional ratemaking. TRE Rebuttal Ex. 1 at 5.

APCo further contends that the Project Surcharges encourage investment and improve the utility's financial condition through the receipt of cash earnings, as compared to the non-cash earnings of the traditional AFUDC approach. RVH Rebuttal Ex. 1 at 8. This cash improvement would reduce APCo's cost of capital that is ultimately paid by the ratepayers. Id.

b. CAD Position on Public Interest. CAD on the other hand testified that, under traditional ratemaking, the Project's revenue requirement to be included in rates will be higher than under APCo's proposal (\$125,054,000 vs. \$108,251,000). Mr. Harris testified, however, that APCo's proposed ratemaking treatment is more costly to ratepayers in the long run. Specifically, CAD argued that under APCo's proposal, customers will be paying a total of \$156,825,000 in surcharges from 2009 through 2011, before the Project even begins providing service in 2012. While the final revenue requirement is about \$16.8 million lower under APCo's proposal, this relatively small difference does not outweigh the costs of the cumulative effect of the Project Surcharges imposed upon customers during construction. CAD Ex. 1 at 6, 7.

Mr. Harris further testified that under a present value analysis, the value to a customer in 2009 of the \$16.8 million difference at a 10% discount rate is \$12.2 million. In other words, paying \$12.2 million in 2009 is the equivalent value of paying \$16.8 million in 2012. CAD Ex. 1 at 6, 7. Mr. Harris also testified that APCo estimates the present value of its proposed ratemaking treatment over the life of the Plant at about \$911.8 million, whereas the present value under traditional ratemaking treatment is about \$789.3 million. Thus, CAD contends that APCo's analysis reflects that the Project Surcharges are more expensive for ratepayers.

CAD argues that APCo's comparative analysis underestimates the impact of the different ratemaking treatments by using an extremely low discount rate - an overall cost of capital of 7.75%. CAD Ex. 1 at 6, 7. Mr. Harris testified that the financial resources available to APCo to obtain cash today are much cheaper than the options available to APCo's ratepayers and that a higher rate should be used as a proxy for customers applicable interest rate. CAD Ex. 1 at 6, 7.

Mr. Harris revised APCo's present value analysis using discount rates of 15% and 20%, based upon interest rates for personal loans and credit card, respectively, and provided the following chart to show the difference:



	<b>APCo's proposed ratemaking</b>	<b>Traditional Ratemaking</b>	<b>Difference</b>
<b>Total revenue requirement</b>	\$2,265,026,076	\$2,442,689,303	\$177,663,227
<b>Company Discount Rate (7.75%)</b>	\$890,326,345	\$789,228,055	-\$101,038,290
<b>15% Discount Rate</b>	\$502,865,773	\$370,935,843	-\$131,929,930
<b>20% Discount Rate</b>	\$372,260,499	\$242,348,451	-\$129,912,048

CAD Ex. 1 at 9, 10.

CAD believes the risks to the average residential ratepayer are (i) higher costs that the customer pays up front versus paying more later and (ii) the risk that construction may start on the Plant, but never be completed.

As to the risk of paying higher versus lower costs by paying the Project Surcharges before the Plant is operational, the Commission can only conclude that “there is plenty of testimony to go around.” The Parties obviously feel strongly both ways. See, APCo Reply Brief at 22. The Commission understands the arguments about paying more now versus paying more over the life of the Project. The Commission is not persuaded that the credit card rate or personal loan rate is the correct discount. The Commission is more persuaded by the argument about the phasing in or gradual increase of the rate impact over time, even in an instance where it might be done before the Plant is on line.

As discussed earlier, the Commission finds that the regulatory lag that helps to keep the ultimate costs of traditional ratemaking down in the present value studies presented by the Parties is particularly unfair when the ENEC benefits of the Project are going to be credited to the benefit of customers starting in the first month that the Plant goes on line (assuming deferred ENEC accounting). Given this unfairness, the Commission would be inclined to adopt a rate recovery mechanism that allowed the rate impact of the Project to coincide more closely to the in-service date of the Project even if we were not allowing a CWIP-related surcharge.

Moreover, whether the discount rate used is 7.75% or a higher number, the present value benefit of “traditional ratemaking” is heavily impacted by the assumed regulatory lag between the in-service date of the Project and the date when customers would begin paying for the Project in rates. As discussed earlier, APCo raises legitimate concerns that, with a project of this magnitude, and considering the ENEC benefits that will be reflected in rates

through an expedited ENEC proceeding (rather than a base rate case), some ratemaking adjustment to eliminate the traditional regulatory lag would be appropriate. Mr. Eads testified the present value benefits of “traditional ratemaking,” which are in excess of \$100 million at any discount rate evaluated by him or Mr. Harris, assume a “conservative one-year lag between the date the plant was placed in service and the date base rates would be implemented under Rule 42 rate case procedures.” TRE Rebuttal at 8. He then presented an updated present value analysis assuming rates covering the costs of the plant could be implemented coincident with the in-service date of the Plant. This analysis demonstrated that at a 7.75% discount rate the net present value benefit to customers, if there were no CWIP-related surcharge mechanism, would be only approximately \$8 million. *Id.* at 8, TRE Rebuttal Exhibit 3 at 4-6. Thus, it would be incorrect to assume that “traditional ratemaking” results in the present value “benefits” to customers ranging from \$101 million to \$132 million as reflected in Mr. Harris’ Exhibit.

As to the risk that Congress may not adopt CO<sub>2</sub> regulation or that the Plant has a fatal design and APCO decides not to continue construction, CAD contends that APCo’s proposal shifts all of the risk to the ratepayers, who will have paid millions of dollars without ever having been provided any electricity. Such a risk is very hard to quantify. Tr. at 365, 366.

c. WVEUG Position on Public Interest. WVEUG’s Mr. Kollen also testified that the Project’s direct cost increased nearly \$1 billion in little more than one year, so he believes the estimated cost and projected ratemaking impacts are significantly understated. WVEUG Ex. 1 (Kollen Direct at 4). APCo has addressed its calculation of the Project and the methodology that it will use in for costing that Project. Mr. Kollen registers his opinion that the Project Surcharge approach is more expensive to ratepayers on a net present value than the normal method of capitalizing the carrying costs on CWIP in the form of AFUDC.

Mr. Kollen makes the further argument that, although APCo’s proposed Project Surcharge recovery mechanism would allow for a gradual increase in rates over time, he does not agree that APCo’s approach would necessarily be less of a shock to ratepayers than a traditional cost recovery mechanism. His basis for that statement is that currently APCo has a series of expected rate increases related to 765 kV/Scrubber Surcharges and a base rate case filing in 2010. Mr. Kollen testified that APCo has estimated a 13% increase in rates in the 2010 base rate case, thus, having another 14% increase for the Plant a couple of years later is effectively a gradual series of rate increases in his opinion. Tr. at 437, 438. The APCo construction surcharges are in place and approved by the Commission. The base rate case is not and it there is no evidence that such a rate increase will be sought or for that matter achieved.

Mr. Kollen testified that APCo has shown no financial distress or dire need to justify exceptional ratemaking treatment. WVEUG Ex. 1 at 9. In the opinion of the Commission, the effort to argue that there must be financial distress in order to undertake the Project Surcharges is a red herring. While the Commission has said that financial distress can be one circumstance that might warrant the imposition of exceptional ratemaking and construction

surcharges, that is not a sine qua non for the granting of construction surcharges. No such showing was made in many of the step rates or surcharges that were granted.

Mr. Kollen listed a litany of other matters and explanations of concern to the Commission. He testified that the Parties should have continued review of the prudence and economics of the project; the Commission should direct APCo to pursue alternative financing options to reduce cost to ratepayers, such as environmental control bonds; APCo's proposal harms ratepayers and results in intergenerational inequities; and APCo misstates its ultimate rate impact of the proposed surcharge. WVEUG Ex. 1 at 10-23.

d. Staff Position on Public Interest. Staff's Mr. Oxley testified that a construction surcharge or step rate results in a lower rate base investment and revenue requirement, but the customer is harmed because the customer pays the increased rates much sooner and some may pay the higher costs without ever receiving any benefit from project. Mr. Oxley also stated that the present value of the annual revenue streams from APCo's proposed approach exceeds the present value under traditional ratemaking by more than \$100,000,000. Under another calculation that APCo provided, the present values for step rates exceed traditional ratemaking by about \$6,000,000. Staff. Ex. 1 at 7-9.

Mr. Oxley testified that APCo has not shown it is in financial distress or is otherwise in need of extraordinary rate treatment, so he prefers traditional ratemaking for the Plant. Staff. Ex. 1 at 10, 11.

Mr. Oxley testified that, under either APCo's proposal or traditional ratemaking, the Commission could allow some level of estimated O&M expense so long as there is an appropriate way to estimate those costs. Tr. at 381-383.

Mr. Oxley agrees that once the Plant is providing service and is reflected in the AEP pool, APCo's capacity equalization payments and primary energy payments to the pool will be reduced. When the plant begins providing service, APCo is not entitled to accrue AFUDC.

Mr. Oxley testified that APCo's proposed surcharge methodology will result in a lower rate base when the plant is placed into service, which means a lower revenue requirement for APCo's customers. This is be offset, however, by the fact that customers will be paying the surcharge earlier. Tr. at 386, 387. There are other APCo increases related to the scrubbers and a general rate case will be filed in 2010. Thus, APCo customers will see, not just the 12% to 14% increase related to the Plant, but perhaps a 30% increase, when all of the proposed rate increases are considered. Tr. at 388-390.

Mr. Oxley testified that APCo is not in financial distress. APCo has a positive net income and its return on equity has averaged 13.8% for the past five years. APCo can cover its fixed obligations several times over with the cash provided from its operations. Tr. at 391, 392.

e. APCo Response on Public Interest. APCo witness Mr. Waldo countered that there was no attempt to prove financial distress by APCo and a finding of financial distress is not necessary before the Commission can approve APCo's Project Surcharge. He stated that financing the Project without interim rate relief would produce negative financial impacts that would jeopardize APCo's ability to move forward with Project. Mr. Waldo testified that W.Va. Code §24-2-1g allows the Commission, upon finding it is in the public interest, to authorize ratemaking allowances for electric utility investment in clean coal and clean air technology facilities located in West Virginia. DEW Rebuttal Ex. 1 at 5. We agree.

Mr. Waldo testified that if any uncertainty exists as to APCo's ability to recover the plant's cost after it goes into service, the Project could be viewed as too risky and APCo's ability to proceed with its construction (and all of the good to come from the Project) could be jeopardized. The Project will increase APCo's assets by almost 55%. Tr. at 44-46. APCo's investment in a power plant has never been disallowed by this Commission, the Virginia Commission, or by the Federal Energy Regulatory Commission. Tr. at 46. Although APCo has been able to recover all of its invested costs and operating costs to date, Mr. Waldo stated that Wall Street's analysis will focus on the future. Tr. at 46, 47.

If APCo decides it would not be prudent to continue with construction and/or put the Plant into operation after its customers have paid APCo's Project Surcharge, Mr. Waldo testified that APCo would be willing to come back to the Commission to determine, in concert with the other parties and the Commission, what should be done. Tr. at 514.

He stated that AEP's strategy is to maximize utility company cash flow and minimize regulatory lag. Tr. at 68. APCo's cost recovery mechanism in this case is a continuation of this policy. Id.

APCo witness Ms. Hawkins also testified that APCo is not relying on "financial distress" as a basis to support its proposed rate recovery mechanism. Ms. Hawkins stated that building the Plant without having APCo's proposed cost recovery mechanism in place would result in negative financial impacts on the utility, such as APCo's financial ratios and credit metrics would deteriorate if traditional ratemaking was used. RVH Rebuttal Ex. 1 at 3, 6. Ms. Hawkins testified that the negative impacts would lead to investors demanding a greater reward for the risk they take investing in APCo. RVH Rebuttal Ex. 1 at 7.

She also testified that APCo's proposed rate recovery mechanism would reduce financial instability, encourage investment and support APCo's financial condition. RVH Rebuttal Ex. 1 at 8. Other jurisdictions, including FERC, have recognized the benefits of rate mechanisms similar to APCo's Project Surcharge. RVH Rebuttal Ex. 1 at 8, 9.

Ms. Hawkins asserts that although APCo will recover tax revenue sooner than under traditional ratemaking, APCo's approach does not accelerate income tax payments to the significant detriment of ratepayers. If the rate of return is used as the discount rate in a

present value computation, then customer payments would have the same present value under APCo's proposal or traditional ratemaking. RVH Rebuttal Ex. 1 at 11-13.

Using pro forma calculations, Ms. Hawkins compared the ratios of APCo's FFO (funds for operations), interest expense and debt balances under the different forms of cost recovery:

FFO Interest Coverage	2008	2009	2010	2011
Proposed	3.19	2.93	3.20	3.25
Traditional	3.19	2.88	3.03	2.89
Change	0.00	-0.05	-0.17	-0.36

FFO to Total Debt	2008	2009	2010	2011
Proposed	11.9%	10.6%	12.5%	13.1%
Traditional	11.9%	10.3%	11.5%	11.0%
Change	0.0%	-0.3%	-1.0%	-2.1%

RVH Rebuttal Ex. 1 at 5.

Ms. Hawkins testified that for 2006, APCo's FFO interest coverage was 3.3 times. APCo's retained earnings for year ending 2000 was about \$121 million and for the year ending 2006 was \$805 million, a more than four fold increase. She stated that there have been minimal dividend payments beginning 2004, 2005 and 2006, since the scrubber projects were undertaken because APCo has kept retained earnings to offset the capital spending. Tr. at 611-613.

Mr. Eads asserts that traditional ratemaking to recover the cost of the Plant is not acceptable to APCo. TRE Rebuttal Ex. 1 at 12. Mr. Eads argued that the potential for an under-recovery of about \$275 million during the first years of the plant's operation, coupled with the ENEC mechanism that returns to customers all the cost savings attributable to the plant, justifies an alternative ratemaking arrangement, which is authorized by W.Va. Code §24-2-1g TRE Rebuttal Ex. 1 at 13.

Mr. Eads does not agree that APCo's Project Surcharge shifts risk away from shareholders to customers. APCo is the only entity providing capital to build new electric assets to serve the customers, and customers paying the surcharge are not investing in the plant. Instead, they are buying down the level of future payments. TRE Rebuttal Ex. 1 at 10.

In response to Mr. Kollen's present value analyses, Mr. Eads testified that APCo included a very conservative one-year lag between the date the plant will be placed in service and date increased base rates will be implemented under Tariff Rule 42 rate case. He stated that the lag period provides an opportunistic transfer of value from APCo to the customers. In other words, the supposed benefit to customers of traditional cost recovery is really APCo's inability to receive timely recognition in rates of the Plant costs under the traditional cost recovery method. If increased rates went into effect the same time as the plant began operating, the difference in present value would only be about \$8 million. TRE Rebuttal Ex. 1 at 8. Again, the Commission believes that the success of this argument depends to some extent on what assumptions (and possibly what result) is needed for the argument.

In response to Mr. Kollen's criticism that the Plant's estimated revenue requirement did not include a rate base adjustment for fuel and material and supplies inventories, Mr. Eads explained that APCo did not include those cost because the utility was concerned it would be interpreted as request to further modify the current construction surcharge methodology. For information purposes, Mr. Eads testified that APCo estimates that the total rate base effect of fuel and material and supply inventories would be \$10 million to \$20 million, respectively, or \$30 million total. When added to rate base, this would increase the annual West Virginia revenue requirement by less than \$1 million. TRE Rebuttal Ex. 1 at 14-16.

Mr. Eads states that if APCo receives any tax adjustments related to the Plant, APCo will likewise adjust the Project Surcharge. TRE Rebuttal Ex. 1 at 20, 21.

APCo proposes to estimate the first full year of expenses of the Plant until there's a rate case. Tr. at 633. The Project Surcharge does not have a true-up mechanism, but APCo would not object to one. Tr. at 633; see also Tr. at 639.

If the Commission approves APCo's Project Surcharge, Mr. Eads testified that APCo could be asked to provide information regarding how it calculated the final surcharge three to six months prior to the final surcharge effective date if the Commission believes it is appropriate. Mr. Eads believes four months is a reasonable amount of time in which to provide this information. Tr. at 643-645.

APCo intends to use traditional financing mechanisms for project funding including short-term debt, long-term debt, retained earnings and equity contributions to finance the project. APCo will seek low-cost tax-exempt financing to the extent it is available. The utility does not plan to issue additional mortgage bonds, but will consider it if market conditions are such that it is the only feasible option. RVH Rebuttal Ex. 1 at 10. Ms. Hawkins testified that the IGCC Project's financing will be more expensive than traditional utility financing. RVH Rebuttal Ex. 1 at 11.

Pursuant to W.Va. Code §24-2-1g, the Commission finds that it is in the public interest to approve a Project Surcharge mechanism as a ratemaking allowance to provide an

incentive to construct the IGCC facility as a clean coal and clean air facility. This approval is conditioned upon APCo giving assurances and undertakings that the Project will use coal produced in West Virginia for at least 75% of the Plant's fuel requirements, as required by W.Va. Code §24-2-1g.

The Commission also believes the unusual circumstances in this case justify authorizing APCo to seek rate recognition for the Project in a base rate case once the Project is placed into service, but generally the better practice is to follow the traditional Rule 42 rate recovery methods for most projects.

## **7. Summary by Commission of Public Interest.**

Staff, CAD and WVEUG have examined in their respective briefs specific instances where the Commission was justified in its departure from traditional ratemaking and have argued that none of those circumstances apply in this case. APCo has noted in its Reply Brief each one of the three basic exceptions to traditional ratemaking discussed by one or more of the Parties that could, with slight modifications, be a basis for approving the proposed ratemaking.

There is one significant factor that the Commission believes directly impacts our decision in this case. APCo urges that the Commission consider the specific provisions of W.Va. Code §24-2-1g for approval of the Project Surcharges and argues that this statute provides an independent basis, separate and apart from the three circumstances discussed by the Parties, to provide a basis to apply different ratemaking concepts in the instance of the Project. The Company has pointed to W.Va. Code §24-2-1g as its basis for the Commission's approval of its proposed construction surcharge and it argues that this statute provides an entirely independent basis from those discussed by the other parties for departure from traditional ratemaking. The Commission agrees that W.Va. Code §24-2-1g provides an independent basis apart from the other exceptions relied upon by the Parties and that APCo has made a persuasive case that it is applicable here. Therefore, the Commission finds no need for APCo to "fit" its proposed surcharge into one of the three exceptions from traditional ratemaking.

There seems to be some confusion that the purpose of the Surcharge is to shift risks from APCo to the ratepayers. The Commission does not view the Surcharge as shifting risk. APCo is acquiring the necessary debt and equity capital to construct a Project in excess of \$2 billion. None of that capital is being contributed by customers and APCo remains at risk for future recovery of the capital invested in the project. Instead of shifting risk from APCo to the customers, something that customer contributions of capital might be considered to do, the Commission finds the annual CWIP-related surcharge mechanism to be a reasonable method of reflecting the ongoing costs of the capital invested in the Project on a phased-in basis. The amounts paid by customers represent an offset to what would otherwise be significant amounts of AFUDC that would accumulate in the absence of the CWIP-related surcharge and that would require higher allowances for return and higher depreciation

expenses in the future. Moreover, as explained regarding the regulatory-lag of so-called "traditional ratemaking," there is a basic fairness to allowing a more timely recovery of Project-related costs when significant benefits of the Project after it goes into service (approximately \$42 million per year to West Virginia customers) will be reflected in ENEC rates which do not have the same level of regulatory lag that occurs with traditional Rule 42 historic test-year and average rate base ratemaking.

The Commission believes that it is in the public interest of the State of West Virginia for the IGCC facility to be constructed and to authorize certain rate-making allowances for the investment. The Commission has reviewed and considered both the advantages and disadvantages of the proposed construction surcharge offered by the Parties, and the recommendations for alternative forms of rate relief, including traditional ratemaking and a construction cap. The Commission does not believe that traditional rate relief is a proper rate recovery mechanism for a project of this magnitude. Because the costs are so high, subject to the ongoing project cost and budget review and continuing prudence review as herein described, it is reasonable to allow APCo to recover its carrying costs during the construction of the IGCC facility to protect its financial stability for this and other projects.

The Commission has regularly required the use of the traditional ratemaking methodologies and principles as the rate recovery mechanism for utilities in West Virginia. The traditional form of rate recovery is proven as an appropriate method for both the utility and ratepayer to recovery utility costs under ordinary and normal circumstances and the Commission will continue to rely on these methodologies as its rate recovery process during such circumstances. However, at times, the Commission has been, and will be, confronted with circumstances that justify a departure from the traditional rate recovery mechanism. The Commission does not believe that it is limited in its ratemaking treatment to only those three special circumstances recited by CAD, Staff and WVEUG, and no Party has cited authority to limit our right to adopt other rate treatments. The sheer magnitude of the cost of the Project warrants examination of special rate treatment of the Project and the adverse impact that historical ratemaking can have on the implementation of all rates impact after the Project becomes operational.

It is in the public interest of the State of West Virginia for the IGCC facility to be constructed and to authorize certain rate-making allowances for the investment. The Commission has reviewed and considered both the advantages and disadvantages of the Project Surcharge offered by the Parties and the recommendations for alternative forms of rate relief, including traditional ratemaking and a construction cap. The Commission does not believe that traditional ratemaking principles are necessary or appropriate for a project of this magnitude. Because the estimated Project costs are so high, it is reasonable to allow APCo to recover its carrying costs during the Project's construction to protect APCo's financial stability for this and other projects. In recognition though of the extraordinary costs of this project, the Commission shall require status reports on project costs and budget milestones twice a year from APCo. Furthermore, the Commission shall closely monitor the Project budget and may modify the surcharge filing and/or timing requirements if necessary.



APCo must keep the Commission informed about the status of the construction cost of the Project on an ongoing and regular basis. The Commission will examine construction costs closely if the Project costs begin to escalate and exceed the estimated cost. Specifically, the Commission will require APCo at least semiannually to update the Commission about the status of the costs of the Project as the construction progresses (such updates can be in part satisfied as a part of any Project Surcharge process discussed in this Order) and will require that APCo's CWIP-related rate recovery through the Project Surcharges to go into effect on July 1 of each year, based on actual Project CWIP as of the previous December 31, be limited to the amount finally certified as the estimated construction cost in this case (being either the \$2.23 billion or a higher amount if approved by the Commission in any subsequent amendment to the Application for the "fine tuning" of that estimate) unless the Commission specifically finds that APCo has demonstrated the reasonableness and prudence of any construction cost escalation. The Commission finds that by requiring an actual amendment to the construction certificate under certain circumstances, coupled with a requirement for detailed explanations of adherence to project budgets and milestones, we will be able to adequately evaluate the ongoing and expected final construction cost in a timely manner.

The Commission shall require APCo to adopt budgets and milestones for progress during the construction and to keep the Commission advised how construction is progressing as compared to those budgets and milestones. We cannot stress too strongly our concern about keeping costs within budget. During deliberations of this proceeding, the Commission considered altering the requested timing of the Project Surcharge implementation dates because of the opinions expressed by the Parties that the ENEC schedule made that timeline too tight. While we are willing to approve the timing requested by APCo in this case, if the costs begin to escalate or budgets and milestones are not met, the Commission will consider a request by the Parties for a schedule that puts the surcharges on an October 1 schedule, if the Commission determines that additional time is needed to evaluate the prudence of APCo's construction in the face of escalating construction costs, budget overruns or missed project milestones. While this may cause a slightly larger build-up of AFUDC than a July 1 surcharge schedule, it would give the Commission from March until September to review the status of the Project and the "prudence" of the management of the Project.

However, if the Commission perceives that the construction costs are escalating too rapidly, or that APCo cannot support the prudence and reasonableness of such costs, the Commission may delay additional Project-related rate increments related to such escalated costs to the final rate allowance established when the Project goes into service. The actual level and timing of Project cost recovery will depend on APCo's ability to maintain construction milestones within the budgets that will be established for the Project. Certificated construction costs and any modifications to those costs that APCo can demonstrate are reasonable and prudent will be entitled to be included in the CWIP-related surcharge that will be implemented each year.

Taking into consideration all of the arguments against and in favor of the Project Surcharges, the Commission believes that APCo has met the applicable requirements for approval of the proposed construction surcharge mechanism. The Commission believes that pursuant to this legislative directive, it can provide incentives and authorize rate-making allowances for clean coal and clean air electric utility facilities. APCo has spent a considerable amount of time and resources to determine the best type of facility to meet its baseload capacity needs and, at the same time, comply with current and future environmental requirements. This effort is demonstrated in the FEED study performed by APCo and GE/Bechtel that has been provided in this proceeding. The Project will enable APCo to continue to use West Virginia coal for the expected life of the plant and to do so in a way that will provide superior thermal efficiency and will enable significant reductions over the environmental impacts of conventional coal combustion and adaptability to comply with the constraints imposed by future environmental regulation. As such, the Commission believes that the Project is a clean coal and clean air technology facility.

The Project Surcharge mechanism, along with the continuing oversight as proposed by the Commission, will provide adequate review of its expenses during the annual ENEC proceeding to ensure that APCo's expenses are prudent and can be recovered through rates. Such review will also provide an incentive for APCo to keep its expenses and costs to a minimum, as CAD wishes.

Therefore, pursuant to W.Va. Code §24-2-1g, the Commission finds that it is in the public interest to approve a construction surcharge mechanism, subject to the qualifications herein described, as a ratemaking allowance to provide an incentive to construct the IGCC facility as a clean coal and clean air facility. Such approval is conditional upon the use of coal produced in West Virginia for no less than seventy-five percent of the IGCC fuel requirements, as required by W.Va. Code §24-2-1g.

## **8. Continuing Prudence Review.**

Although the Commission has determined that it is in the public interest to provide incentive ratemaking allowances, this determination must be counterbalanced by ensuring that the customers do not absorb imprudent or unreasonable costs. To accomplish this balance, the Commission will invoke its authority provided by W.Va. Code §24-2-11b, which provides in pertinent part:

- (a) If, in granting a certificate of convenience and necessity for the construction of an electric utility generating plant, a facility to comply with the Federal Clean Air Act, as amended, or transmission line, the commission determines that the completion date for such plant or line is more than one year from the date of the order granting the certificate, the commission may require that such construction project be subject to continuing prudence review pursuant to this section.

It cannot be disputed that this electric utility generating plant will assist and better position APCO in complying with existing and future clean air standards. Indeed, this is one of the factors underlying the Commission's decision to allow the plant's construction. The statute also provides that

[t]he commission shall specify, either by rule or for a specific certificated project, the frequency of each prudence review, the rate-making treatment to be afforded partially completed projects, and such other terms and conditions as it determines are reasonable.

W.Va. Code §24-2-11b (c).

W.Va. Code §24-2-11b (continuing prudence review) and §24-2-1g (rate incentives) were enacted in 1990 third extraordinary session of the Legislature as parts of the same bill. In the Legislative findings and declarations contained in W.Va. Code §24-2-1g, the Legislature observed that:

the prudence of the construction of such facilities may be affected by changing conditions during the extended interval between finalization of plans and completion of construction.

Therefore, the linkage of rate incentives and continuing prudence review was not only contemplated by the Legislature but also is fully consistent with the responsibility of the Commission to ensure fair regulation of utilities in the interest of the consuming public while ensuring that rates and charges for utility services are just and reasonable. See, W.Va. Code §24-1-1(a) (1) and (4).

Pursuant to this legislative authority, the Commission shall specify the prudence review to occur following the issuance of this order for this Project. Since the Commission will be involved in the ongoing prudence review of the Project, the Commission advises the parties that it may modify the procedures as required. Prudence review should not be limited to just one particular mechanism, for example, only reviewing costs within the context of an ENEC proceeding. Rather, prudence review should be dynamic and capable of adapting to whatever process is needed to ensure reasonable costs. Accordingly, the following processes and procedures are initially established:

1. During the hearing, APCO stressed that it was unable to lock down prices. WMJ Rebuttal Ex. 1 at 2-3; Tr. at 571, 572. Furthermore, no APCO witness was willing to provide a value for cost escalation. As previously discussed in this Order, after APCO receives necessary approvals from West Virginia and Virginia, APCO will "fine tune" its estimate. The Commission expects APCO to provide it with a revised Plant cost estimates that must be filed no later than January 1, 2009. If the revised estimates exceed the current \$2.23 billion estimate, APCO must file an amended application requesting further Commission authorization before proceeding further.

2. Beginning September 1, 2008 and on September 1<sup>st</sup> of each year thereafter, as well as with each future ENEC filing, beginning March 1, 2009, APCO shall submit semiannual reports that show construction progress as compared to cost budgets and milestones (the Commission previously directed APCO to develop budgets and milestones). The Commission, in its discretion, may modify existing ENEC procedures or initiate future proceedings as necessary to consider these filings.

3. Rate recovery through the Project Surcharges shall be limited to certificated construction costs and any modifications to those costs which APCo can demonstrate are reasonable and prudent. Any cost recovery beyond that associated with the final certificated construction cost estimate, or Commission-approved escalations, shall be the subject of a base rate case or other appropriate proceeding.

4. The Commission notifies the Parties that it will modify or create procedures needed to review all costs, including ongoing construction costs and the costs of a partially-completed Project, to ensure that the consuming public does not bear unreasonable costs.

#### **9. APCo's Pursuit of Tax Credits and Incentives.**

As part of the federal Energy Policy Act of 2005 (2005 Act) federal tax incentives were made available to IGCC projects. The intent of the 2005 Act was to provide support for a limited, but adequate number of projects to reduce the future costs of similar technology. That is, Congress hoped that repetition of the technology would lower the cost of future projects. DEW Ex. 1 at 11.

APCo filed for certification to qualify the Project as an IGCC facility using bituminous coal with the federal Department of Energy on June 29, 2006, and the federal Energy Department certified APCo's proposed Mountaineer Project. DEW Ex. 1 at 10, 11.

APCo then applied to the Internal Revenue Service on September 27, 2006, requesting the full credit amount allowed pursuant to IRS Notice 2005-24, or \$133.5 million. DEW Ex. 1 at 10. If there are more requests than available credits, the final tiebreaker for equally qualified projects is the ratio of nameplate generating capacity to the amount of credits requested, per IRS Notice 2006-24. On November 29, 2006, the IRS denied AEP's request for tax credits because the Plant was not one of the projects with the highest nameplate generating capacity. DEW Ex. 1 at 11.

APCo's Mr. Kelley indicated that these federal tax credits may still become available because Tampa Electric has canceled its IGCC project and has notified the IRS that it is forfeiting that project's \$133.5 million in tax credits. Under the statute and rules for advanced coal projects, the IRS is required to reallocate the forfeited credits to other qualifying projects, and APCo intends to seek Tampa's forfeited credits for the Project. MJK Rebuttal Ex. 1 at 3, 4.

Unfortunately, in June 2007, the IRS announced that all available tax credits for such projects had been allocated in 2006. As of October 31, 2007, the IRS had not formally revoked the Tampa project's credits, but an IRS representative informed APCo that no applications for IGCC project credits would be considered in the 2007 through 2008 allocation round. MJK Rebuttal Ex. 1 at 3, 4. APCo indicated at the hearing that it intends to seek the credits forfeited by the Tampa project, either by virtue of its previous certification by the Energy Department as a priority project if permitted by IRS, or by refiling its application for an allocation of tax credit if necessary.

APCo is also continuing to meet with staffs of legislators, legislative committees and other parties to advocate for an expansion of the Advanced Coal Project credits in future legislation. If future legislation allows those credits, then APCo hopes to be awarded a credit for the Project. DEW Ex. 1 at 11, 12.

Additionally, there are or may be other tax credits available. For example, Internal Revenue Code Section 41 allows a tax credit against federal income tax for qualified research activities. The State of West Virginia provides a tax credit, as an offset against state B&O tax, for industrial expansion and revitalization for certain research and development related expenditures in West Virginia. See W.Va. Code §11-13D-1 et seq. West Virginia also allows an economic opportunity tax credit computed based on the qualified investment times a percentage based upon the life of the asset times a percentage based upon the number of new jobs created. See W.Va. Code §11-13Q-1. This credit is allowed as an offset against West Virginia B&O tax, corporate net income tax and the business franchise tax. MJK Rebuttal Ex. 1 at 5. Mr. Kelley testified that there are limitations on these credits, and he outlined other potential West Virginia tax incentives. He testified that APCo will apply for any of the available federal tax credits and West Virginia tax credits and other incentives. MJK Rebuttal Ex. 1 at 5, 6.

APCo has stated that it has no objection to the recommendation that it seek any available federal tax credits or other incentives applicable to the Project so long as it is not an absolutely unqualified standard and will be prepared to justify in future proceedings its course of action in seeking or not seeking any particular credit or incentive. See discussion about IRS Code §199 below; APCo Reply Brief at 23.

Given the projected cost of the Project, the Commission believes that it is reasonable for APCo to continue to work diligently to pursue tax credits and/or other incentives to reduce the rate impact of the project. To that end, and as indicated earlier, the Commission will condition its granting of a Certificate upon APCo continuing to pursue all reasonable and prudent tax credits and other incentives available to reduce the impact of the project costs to APCo's customers.

## **10. Discussion of IRS Code §199 Deductions for Project.**

Both CAD and WVEUG argue that the Commission should require APCo to use the IRS Code §199 (IRS Code §199) deduction after the Plant is in operation. APCo witness Kelley has discussed the flaws with this deduction, including the uncertainties regarding how this deduction would apply to the operation of fully integrated utilities (such as APCo). MJK Rebuttal Ex. 1 at 8; Tr. at 597.

The deduction is not a tax rate reduction, but instead is a “special deduction” which may or may not be available, depending on particular facts and circumstances. MJK Rebuttal Ex. 1 at 9. Furthermore, the evidence given at the hearing indicated that this is not a popular deduction with Congress and there has been legislation introduced to repeal it. Tr. at 597. The deduction cannot even be quantified until the Plant is operational. Tr. at 466 and 597. With all of the uncertainties surrounding this deduction, including the actual deduction that could be taken, APCo argued that the Commission should not at this time require APCo to utilize it. At the least, APCo argues that the Commission should refrain from deciding the application of IRS Code §199 until it can be determined what, if any, deduction could be gained from it once the plant is in operation.

WVEUG's Mr. Kollen testified that IRS Code §199 could allow a deduction that will benefit ratepayers when the Project becomes operational. WVEUG Ex. 1 at 21, 22; Tr. at 445-447, 465-467. AEP agreed with Mr. Kollen's testimony that the deduction will not be applicable until the Plant goes into service but otherwise disagreed with Mr. Kollen's interpretation. MJK Rebuttal Ex. 1 at 8-14.

Because the IRS Code §199 deduction will not be applicable until the Plant goes into service, Mr. Kelley testified that this issue need not to be addressed yet. Tr. at 596-599. The Commission agrees with that position, but reminds APCo that it must take advantage of all available reasonable and prudent credits and incentives, including IRS Code §199 if it is available.

## **11. Demand Side Management Task Force.**

CAD recommended that the Commission require APCo to participate in a task force to determine whether APCo should more aggressively seek energy savings from energy efficiency measures. CAD Ex. 1 at 3, 4; CAD Initial Brief at 19-21. AEP includes demand side management and consumer energy efficiency programs in its evaluations of how to achieve its capacity generation requirements. JMM Ex. 1 at 10-12. APCo does not object to CAD's request that the Commission initiate such a task force. SCW Rebuttal at 14.

The Commission will establish a Task Force to consider APCo's participation in demand side management and consumer energy efficiency programs. At a minimum, the Task Force shall include representatives of CAD, Staff and APCo. The other parties to this proceeding shall also be invited to participate. The Task Force shall publish notice one time

statewide of the opportunity for others to participate in the Task Force. The Task Force shall forward the notice to the Commission's Executive Secretary, who shall submit the notice to newspapers across the state for publication. CAD shall organize and chair the first meeting of the Task Force. The Task Force shall file, at a minimum, an annual report as part of APCo's ENEC proceedings. The Commission encourages the Task Force members to work creatively and to propose specific programs and requirements for APCo and its customers.

## **12. Proceedings before the Virginia State Corporation Commission.**

The Commission notes that APCo must obtain approvals from our counterpart in Virginia (Virginia State Corporation Commission or VSCC) for construction of the Project and appropriate rate treatment for the Project. Clearly, since APCo's presence in Virginia is approximately the same as its presence in West Virginia, each State's views of the need for the Project and the approvals or conditions placed on construction and/or rate treatment will be critical components of a final decision for proceeding to construction. We recognize that even if the VSCC authorizes APCo to go forward with the Project, its ratemaking or other conditions may be different than those established by this Commission. Such differences between West Virginia and Virginia may be easily accommodated by appropriate accounting mechanisms. APCo shall file, for informational purposes, a copy of any Orders which it receives related to this project from the VSCC and inform the Commission of the accounting mechanisms that it will use in Virginia and West Virginia if such will easily reconcile any differences between the two State approvals. However, if the differences are so significant as to be irreconcilable by appropriate State-specific accounting, or if the accounting required will be detrimental to West Virginia customers, we direct APCo to inform the Commission of those differences and seek any modifications or clarifications that are necessary to fully reconcile the conditions, ratemaking and accounting conditions imposed by this Order as compared to those established by the VSCC.

## **V. FINDINGS OF FACT**

1. On January 11, 2006, APCo filed an Application for a Certificate to construct a 629 MW IGCC electric generating unit near New Haven, in Mason County, West Virginia, on about 70 acres that APCo owns. APCo's Application at 1; additional information filed by APCo on May 1, 2006, in support of Application at 9.

2. APCo published notice of the Project's expected rate impact and the hearing date and time. No members of the public appeared to speak either for or in opposition to the Project during the public comment portion of the evidentiary hearing conducted by the Commission.

3. On December 10, 11, and 12, 2007, the Commission conducted three days of evidentiary hearings involving a transcript of nearly 650 pages and 28 prefiled direct and rebuttal testimonies and exhibits of twenty witnesses, consisting of more than 800 pages of additional record evidence.

4. The Plant's location adjacent to APCo's Mountaineer power plant is bordered on the north by an existing coal storage area, to the west by an existing coal conveyor and railroad, to the east by a rail spur and the Ohio River, and to the south by the Mountaineer plant. Application at 1-5 and attachments; additional information filed by APCo on May 1, 2006, in support of Application at 9.

5. Coal can be delivered to the Plant by conveyor from a mine on site. APCo's Mountaineer Plant also has a barge unloading structure that can be used, and coal can be delivered by rail if needed. MWR Rebuttal Ex. 1 at 4.

6. The current estimated cost of the Plant is \$2.23 billion, including \$250 million for escalation and contingency. DEW Ex. 1 at 8; WMJ Ex. 1 at 15, 16. APCo's cost estimate is as definitive as possible at this time. WMJ Rebuttal Ex. 1 at 1.

7. APCo designed the Plant so it could be adapted to carbon capture. Tr. at 219-222.

8. At the peak of construction, there will be 1,400 workers working on the Project, and there will later be 125 full-time employees. See, Application, Ex. A.

9. APCo is not seeking to provide new service or to expand its service area, but proposes to increase its generating capacity to meet its existing and future public service responsibilities. Application at 2.

10. APCo owns 6,415 MW (winter rating) of generating capacity. APCo's highest hourly summer and winter peaks were 6,395 MW during the summer of 2006 and 8,003 MW in February 2007. APCo, on a stand alone basis, does not own sufficient generation to meet its own customers' present peak demand. DEW Ex. 1 at 3, 4.

11. APCo is the projected most capacity-deficient member of the AEP-East Pool in both absolute terms (a 935 MW capacity deficiency) and relative percentage terms (a 12.4% capacity deficiency). APCo has an obligation under the Pool Agreement to add new baseload capacity. SCW Ex. 1 at 33, 34 and 57, 58; SCW Ex. 9.

12. Because it has a capacity deficit, APCo is required to make annual capacity equalization payments of close to \$150 million per year into the AEP Pool. Tr. at 32-34.

13. PJM requires an installed reserve margin level of 15% for generation capacity. SCW Ex. 1 at 29, 30 & Ex. Nos. 8-A & 8-B. APCo's generation capacity position is expected to be short 1,278 MW by summer 2008 and 1,418 MW by summer 2012. SCW Ex. 1 at 32. APCo's anticipated 2011 through 2012 winter season reserve is expected to be in a 663 MW deficit position. SCW Ex. 1 at 58.



14. Long-term load and demand forecasts project the AEP-East Zone to be 687 MW deficient by the year 2012. SCW Ex. Nos. 1, 2, 4-A, 4-B, 4-C, 4-D, and 6-A; SCW Ex. 1 at 31-33; SCW Ex. 8-A. AEP-East is projected to become deficient in meeting PJM's minimum reserve requirement in 2012. SCW Ex. 1 at 31, 33.

15. The AEP-East Zone requires new baseload generation to offset anticipated load growth and the prospects of potential coal-unit retirements. SCW Rebuttal Ex. 1 at 8.

16. The "Supply-Demand Forecast for Electric Utilities" submitted to the West Virginia Legislature each year by the Commission reflected that APCo's capacity deficiency in West Virginia is expected to grow and the AEP-East Zone installed capacity reserve margin is expected to decline. Staff Ex. 3 at 2-4.

17. AEP's generating plants, including APCo's units, are aging and face increased environmental requirements that affect their capacity and expected operating life. MWR Ex. 1 at 5.

18. Although APCo and AEP have made significant investments in the coal-fired generation fleet and are diversifying the generation fleet, new technologies are needed to replace aging capacity and meet growing demand and increasing environmental requirements. Id.

19. The IGCC technology is a clean-coal technology that will enable APCo to continue to use native coal for the Project's expected life in a way that will provide superior thermal efficiency, will enable APCo to achieve significant reductions over the environmental impacts of the conventional coal combustion and will facilitate compliance with the constraints imposed by expected future environmental regulations. MWR Ex. 1 at 5, 6 & 15, 16; PC Ex. 1 at 3, 4 & 6-9.

20. The IGCC processes are relatively new to large-scale electric generation projects, but they have been commercially proven in IGCC plants in the chemical and energy industries and in a few commercial electric generation plants. Tr. at 99.

21. Although carbon capture technology is not yet scaled to the size of APCo's proposed Project, it is proven technology. Tr. at 81, 82.

22. An IGCC facility operating with carbon capture technology loses about 10% to 15% of its output. In the case of APCO's proposed Plant design, that would be about 80 MW. Tr. at 82; see also Tr. at 552-555. Adding carbon capture to a generating plant that uses pulverized coal reduces the output by 30%. Tr. at 80, 565, 566.

23. The TECO/Polk plant emits NOx at a low fractional percentage of the new performance standards for coal plants. Tr. at 560-563. The Project's design incorporates the

innovations and changes developed during the ten years that TECO/Polk has operated. PC Ex. 1 at 4.

24. IGCC plants can use a variety of fuels, and APCo's Plant is designed to burn eastern bituminous coal with a range of variables (sulfur, ash, chlorides, etc.). PC Ex. 1 at 3-6.

25. CO<sub>2</sub> emissions from an IGCC plant without carbon capture technology are comparable to emissions from a supercritical pulverized coal facility equipped with state-of-the-art emissions control equipment. PC Ex. 1 at 6, 7; PC Ex. 3. An IGCC facility also can be expanded to produce feed stock for chemicals, fuels and other products, whereas a typical pulverized coal plant cannot. MWR Ex. 1 at 16; PC Ex. 1 at 6.

26. IGCC is the only power generation technology with proven capability to capture CO<sub>2</sub>. Currently, there is neither a regulatory requirement to capture CO<sub>2</sub> nor an economic incentive to do so. JMM Ex. 1 at 7; PC Rebuttal Ex. 1.

27. The Plant is designed to be compatible with CO<sub>2</sub> capture equipment, but the equipment will not be installed until the CO<sub>2</sub> regulations are fixed or known. PC Ex. 1 at 8; MWR Rebuttal Ex. 1 at 2, 3. By the time CO<sub>2</sub> regulation is effective, technological advances in CO<sub>2</sub> capture technology may eclipse any design now specified. PC Ex. 1 at 8; PC Rebuttal Ex. 1 at 2.

28. IGCC technology has the potential to control CO<sub>2</sub> emissions at a significantly lower cost than conventional technologies. MWR Ex. 1 at 15, 16. IGCC carbon removal that occurs before combustion instead of after is far more efficient and uses much less energy. MWR Rebuttal Ex. 1 at 3. The IGCC process requires about one-third less water than a pulverized coal plant, generates less solid waste than a conventional coal plant, and has greater fuel flexibility than conventional coal plants. MWR Ex. 1 at 16; PC Ex. 1 at 6; see also JMM Ex. 1 at 12, 13.

29. The Project is designed to remove more than 99.5% of the SO<sub>2</sub> and 90% of the mercury and control nitrogen oxides to 15 ppm. PC Ex. 1 at 8.

30. It is not technologically feasible to add SCR technology (to reduce NO<sub>x</sub> emissions) to an IGCC facility currently. PC Ex. 1 at 7. There is uncertainty about the lifespan of a SCR catalyst in a coal-based syngas environment, and there are concerns about potential corrosion and plugging impacts to the heat recovery steam generator on an IGCC facility. PC Rebuttal Ex. 1 at 6, 7.

31. The cost to add carbon capture technology to an IGCC plant is about 10% less than the cost to retrofit a pulverized coal facility with carbon capture technology and about 25% less to retrofit a natural gas combined cycle plant. MWR Rebuttal Ex. 1 at 2, 3.

32. The Clean Air Act of 2005 calls for regulation of sulfur dioxide, nitrogen oxide, particulate, and emissions (collectively, hazardous emissions). IGCC technology, even without carbon capture, appears to address the regulated EPA hazardous emissions at least as well as, or better than, a new pulverized coal technology power plant. Staff Ex. 3 at 12, 13.

33. IGCC pre-combustion carbon capture technology is more advanced than the technology to retrofit an existing coal-fired plant, and refinement of carbon capture technology should improve the technology and lower its cost. Staff Ex. 3 at 12, 13.

34. The initial investment in a generation plant using natural gas, either combined cycle or combustion turbine technology, is lower than the initial cost for an IGCC facility. Natural gas plants are dispatched, based on variable costs, not embedded capital costs; however, natural gas plants typically serve as “peak” or “intermediate” capacity resources and would not satisfy APCo’s and AEP-East’s need for additional baseload capacity. The life cycle cost of electricity from an IGCC facility is on par with, or below, that of a natural gas combined cycle plant. MWR Ex. 1 at 6; SCW Rebuttal Ex. 1 at 3, 4.

35. APCo performed a detailed risk analysis, evaluating six resource portfolios that considered eight risk factors – natural gas prices; coal prices; SO<sub>2</sub>, NO<sub>x</sub> and CO<sub>2</sub> allowance prices, respectively; regional energy prices; load requirements; and generating unit outage rates. SCW Rebuttal Ex. 1 at 12; SCW Rebuttal Ex. 15.

36. The expected higher allowance prices for CO<sub>2</sub> would result in CO<sub>2</sub> reduction technology becoming economically justified sooner. SCW Rebuttal Ex. 1 at 14.

37. The initial engineering, procurement and construction capital costs of an IGCC plant are about 20 to 30 percent higher than a pulverized coal unit. If environmental regulations are considered, an IGCC plant’s overall estimated cost of electricity is about 9% less. MWR Ex. 1 at 17.

38. APCo performed a detailed FEED study that resulted in thousands of engineering drawings and specifications, the acquisition of over 90% of the current pricing for bulk quantity materials - such as piping, cable and conduit, concrete and steel - and equipment from vendors, a detailed cost estimate at current pricing as of November, 2006, and a detailed project schedule. WMJ Ex. 1 at 9 and WMJ Rebuttal Ex. 1. The FEED process determined the estimated cost of certain bulk quantities for the Project and is designed to mitigate every risk that can be mitigated at this stage of the Project. Id.

39. Because of the escalation for commodities, manufactured equipment, and labor, the engineering, construction and procurement (EPC) market does not support firm pricing in a construction contract for a project that will be completed years into the future. WMJ Rebuttal Ex. 1 at 1; Id. at 2. The increased costs of these items apply to any facility - not just the Project.

40. Costs are likely to escalate if the Project is postponed because of increases in construction costs and the substantial FEED work that would need to be performed again. SCW Rebuttal Ex. 1 at 8; Tr. at 492, 493.

41. Passage of greenhouse gas (GHG) legislation is becoming more probable. SCW Rebuttal Ex. 1 at 9; JMM Ex. 1 at 7; Tr. at 351-353

42. As a means of addressing GHG emissions, AEP is installing carbon capture equipment on two coal-fired generation plants; adding wind-powered generation; increasing forestry investments; increasing its participation in domestic offsets such as methane capture from agriculture, mines and landfills; investing in innovative generation options, such as IGCC technology; evaluating demand side management and consumer energy efficiency programs; and retiring less efficient generating capacity. JMM Ex. 1 at 10-12.

43. The add-on costs for full CO<sub>2</sub> capture (90%) at a 600 MW IGCC plant are estimated to be \$180 million. Compressor capacity for the captured CO<sub>2</sub> adds about \$20 million. CAD Ex. 3 at 15. It would cost \$78 million to make the Plant ready for partial carbon capture (20%). Id. at 20, 21.

44. Staff recommended the following conditions to the APCo Certificate:

1. Require APCo to seek additional approval from the Commission before proceeding if there are any material changes in the Project's scope.
2. Require APCo to commence and continue construction within five years of its current estimate, being the second quarter of 2008. If APCo fails to do so, invalidate the Certificate unless APCo obtains the Commission's approval to extend that time frame.
3. Require APCo to seek any available federal tax credits or other applicable incentives for the project and to notify the Commission if APCo receives any allocated tax credits or other incentives.
4. Require APCo to file quarterly progress reports on expenditures, construction progress and any noteworthy development impacting the IGCC plant.
5. Require APCo to notify the Commission upon substantial completion of the Project.

Staff. Ex. 1 at 11, 12.

45. APCo accepted Staff's conditions, with one exception, and asked that the requirement to seek "any available" tax credits or other incentives be limited to "reasonable" or "prudent" efforts. APCo Reply Brief at 24.

46. Adding APCo's 629 MW of capacity in the AEP Pool will reduce APCo's capacity equalization payments and reduce the amount of energy APCo buys from the Pool. During the Plant's first year of operating, these reductions are estimated to provide about \$83 million of cost offsets for West Virginia ratepayers. TRE Ex. 1 at 10; see TRE Ex. 2.

47. The estimated cost of APCo's Project is derived as follows:

Direct cost of the Plant,	
Based on November 2006 FEED Study	\$2,160,000,000
Corporate overheads (about 3%)	<u>70,000,000</u>
	\$2,230,000,000

48. APCo's proposed lump-sum turnkey contract will cover substantially all of the Project with one set of guarantees. This approach provides guarantees with higher limits and more comprehensive coverage than if the equipment and systems were supplied by individual vendors. WMJ Ex. 1 at 4, 5.

49. APCo will be able to audit the new bases for pricing, and the contractor is required to demonstrate to APCo that fair, competitive pricing has been obtained. Tr. at 260-262.

50. GE/Bechtel was selected for the Project because it has a past history and experience in the utility, energy and chemical industries. WMJ Ex. 1 at 5, 6. GE/Bechtel will act as a single contractor, with joint and several liability for the performance under the contract.

51. APCO did not include certain work within the scope of the contract with GE/Bechtel, i.e., coal handling and electrical interconnections – for which it has the background and experience to manage. Tr. at 250.

52. After APCo receives regulatory approvals from Virginia and West Virginia. APCo will issue a partial, limited notice to proceed, under which GE/Bechtel will fine tune the scope and costs and revise its portion of the Plant's cost estimate. WMJ Ex. 1 at 16.

53. APCo requested an annual Project Surcharge, similar to the surcharge mechanism recently adopted for APCo and WPCo in Case Number 05-1278-E-PC-PW-42T, so that APCo could recover carrying costs associated with the significant capital required to construct the Project. TRE Ex.1 at 3. APCo is not proposing any change in rates in this proceeding, only approval of the Project Surcharge mechanism. TRE Ex. 1 at 3-5, 10.

54. By March 1st of each year, and in conjunction with APCo and Wheeling Power's annual Expanded Net Energy Cost (ENEC) filing, APCo will file revised Project Surcharge rate factors designed to recover the annual revenue requirement associated with the Plant's construction balance as of December 31 of the preceding year. The revenue requirement will be based on the following:

- 1) The West Virginia jurisdictional share of the account balance of Construction Work in Progress (CWIP) for the Plant, as of December 31st of the preceding calendar year; times
- 2) An overall rate of return determined using an average capital structure during the preceding calendar year. This overall rate of return will be based on average debt costs during the preceding year and a 10.5% rate of return on common equity; plus
- 3) Applicable taxes on the revenue requirement as calculated from 1) and 2), above.

Rates to reflect the above-calculated Project Surcharge will become effective on July 1 of each year, following the March filing, unless otherwise directed by the Commission.

55. Absent the Project Surcharges, APCo would capitalize an Allowance for Funds Used During Construction (AFUDC) on the total monthly Project balances during construction. The AFUDC would be revenue to APCo and would impact its net income identically to the impact of the Project Surcharges. However, the income from AFUDC does not represent cash whereas the income from the Project Surcharges provides positive cash flow to APCo. Because APCo would be receiving a recovery from customers for the carrying cost of its capital invested in the Project during the construction phase, it would not capitalize its cost of capital and the ultimate investment in the Project will be lower than it would have been with capitalized AFUDC.

56. When an annual Project Surcharge is implemented in rates (providing APCo with cash for the Project's financing costs), APCo will cease recording AFUDC on the related CWIP balance. Id.

57. CWIP balances in excess of amounts reflected in the Project Surcharges, however, continue to accrue AFUDC during the construction period. Id.

58. The Project Surcharges will be adjusted annually during the construction phase of the Plant. APCo will propose a final Project Surcharge to be effective on the first day of the month immediately following the month the Plant goes into service. In addition to the rate of return and applicable taxes associated with the Plant investment, the final surcharge would also incorporate depreciation, property taxes and the ongoing operating costs related to the Plant that would not otherwise be reflected in an ENEC proceeding. Those operating

costs and credits (fuel costs, capacity related credits, etc.) that are reflected in annual ENEC filings would not be part of the final Project Surcharge calculation.

59. APCo projects gradual increases under the Project Surcharges on residential customers using 1,000 kWh per month. The expected percentage increases total 12.4% by July 1, 2012. TRE Rebuttal Ex. 1 at 5, 11.

60. During the Plant's 40-year expected life, APCo's Project Surcharge mechanism is expected to result in total customer payments for the Plant's construction of approximately \$229 million less than traditional ratemaking. TRE Rebuttal Ex. 1 at 5.

61. APCo's costs under the AEP Pool will be reduced when the Project begins providing service. Changes in the AEP Pool costs are addressed in APCo's ENEC proceeding and will be passed through to customers by reducing APCo's ENEC expenses. TRE Ex. 1 at 6; Tr. at 316-318.

62. Construction on the Project is not expected to begin until after the first quarter of 2008. APCo needs approval from both this Commission and the Virginia State Corporation Commission. Thus, the Project Surcharges would be filed in conjunction with the 2009 ENEC proceeding and, under the contemplated schedule, would become effective July 1, 2009. TRE Ex. 1 at 7.

63. APCo agreed to comply with the requirements of W.Va. Code §24-2-1g(c) that a Clean Coal generating facility use West Virginia coal for at least 75% of its fuel requirement. Tr. at 513 (AEP witness Waldo).

64. The Project Surcharges appear as a demand charge for customers subject to a demand charge and as a kilowatt-hour charge for customers, including residential customers, billed by the volume of energy used. The Project Surcharges will vary for special contract customers, based upon the specifics of each contract. TRE Ex. 1 at 11.

65. If the Project begins operating by mid-2012, APCo would likely file a general rate case in early 2013, using the historic test year for the 12 months ended December 31, 2012, and incorporating the Project's costs in base rates. When the Plant's costs are reflected in base rates, the Project Surcharges cease.

66. If APCo decides not to continue with construction and/or put the Plant into operation after APCo ratepayers have paid the Project Surcharge(s), APCo will ask the Commission to determine in concert with the other parties how to proceed. Tr. at 514 (AEP witness Waldo).

67. If APCo receives any tax adjustments related to the Plant, APCo will adjust the Project Surcharge. TRE Rebuttal Ex. 1 at 20, 21.

68. The Project Surcharge proposed by APCo is an incentive for the construction of the clean coal facility, as contemplated by W.Va. Code §24-2-1g. DEW Rebuttal Ex. 1 at 5, 6; TRE Rebuttal Ex. 1 at 13.

69. The completion date for APCO's proposed Plant, an electric utility generating plant, is more than one year from the date of this Order.

70. Federal tax credits may still become available for APCo's Project because TECO/Polk has canceled its new IGCC project and has notified the IRS that it is forfeiting that project's \$133.5 million in tax credits. MJK Rebuttal Ex. 1 at 3, 4.

71. APCo does not object to CAD's request to initiate a task force to determine whether APCo should more aggressively seek energy savings from energy efficiency measures. SCW Rebuttal at 14. CAD Ex. 1 at 3, 4; CAD Initial Brief at 19-21.

## **VI. CONCLUSIONS OF LAW**

1. APCo, on a stand alone basis, does not own sufficient generation to meet its customers' present peak demand. APCo is in a deficient generating capacity position in the AEP Pool. APCo will be short in PJM's summer generation capacity requirements in 2008 and short in PJM's winter generation capacity requirements by winter 2011-2012. AEP and APCo's generation fleet consists primarily of aging coal-fired power plants, several of which are near the end of their useful life. By 2012, a projected minimum of 687 MW of capacity will be required to maintain AEP-East's obligations within PJM and the deficit capacity position is projected to grow. Based on the evidence presented, APCo has demonstrated a need to add electric baseload capacity to meet the increasing load requirements of its customers.

2. The Project is one of the first times that IGCC technology will be used for an electric generation facility of this size. Given the number of years that IGCC has been used in the chemical industry and the success of IGCC technology at TECO/Polk, the Commission concludes that there has been sufficient experience and information to support APCo's position that the technology can be operated successfully on a commercial scale.

3. Because bituminous coal has efficiency and cost advantages, particularly when considering potential CO<sub>2</sub> capture and storage possibilities related to IGCC technology, and because this State's coal and transportation resources are so abundant, it is reasonable for APCo to consider adding generation capacity that is fueled with coal.

4. Because modifications to carbon capture technology are being developed that may improve the technology and reduce its price and because national environmental requirements have not yet been enacted, it is reasonable for APCo to wait to choose how to achieve compliance with forthcoming environmental requirements regarding carbon emissions.



5. There is significant public concern regarding climate change and considerable legislative activity in Congress. Accordingly, the Commission concludes that federal climate change laws are likely to be forthcoming to require CO<sub>2</sub> emission reductions in the electric generating sector, although the exact timing and extent of those reductions are not known.

6. As compared to other types of generation facilities, APCo's preference for IGCC baseload technology is reasonable because natural gas-fired facilities meet mostly "peak" or "intermediate" needs; IGCC technology better meets existing environmental requirements than coal-fired plants; the Plant will run more efficiently and at a cost on par with or below that of the natural gas-fired facilities; and when the impacts of environmental compliance are considered, the overall estimated cost of electricity from an IGCC plant is the least-cost option over the life of a baseload plant. Therefore, the Commission concludes that IGCC technology has advantages, both environmental and economic, especially under CO<sub>2</sub> control scenarios, making it the logical choice for new baseload generation for the Project.

7. Planning a baseload generation facility that uses new technology and that will be subject to yet unknown environmental requirements is much more cumbersome and uncertain than planning a traditional coal-fired plant. Similarly, construction costs have been subject to considerable escalation in recent years, and it is expected that those costs will continue to rise, at an unpredictable rate, in the foreseeable future. Because of these factors, it is reasonable that there is a degree of uncertainty about the final cost of the proposed Project.

8. While it is impossible to anticipate every possible risk involved in the Project, APCo has adequately considered the construction and capital cost risks associated with the Project as demonstrated by APCO's detailed analyses.

9. APCo has demonstrated that the need for additional baseload capacity exists now. A delay of the Project would render APCo's various analyses moot; require additional FEED expenses; in all likelihood subject the Project to expected increases in construction costs; and, not be in the long-term interests of APCo, its customers or the State.

10. Given the length of time that the Project will operate, the likelihood that Congress will pass legislation dealing with carbon emissions, the recent United States Supreme Court decision in *Massachusetts v. EPA*, and the passage of Senate Bill 337 authorizing a mandatory reporting program in West Virginia, APCo's decision to choose IGCC technology, in large part due to the likely future regulation of CO<sub>2</sub> emissions, is reasonable.

11. Given the uncertainties regarding the specificity of future CO<sub>2</sub> regulation, APCo should continue to analyze its decisions about if and when to proceed with the construction of the Project and whether to continue with construction if later information indicates it might not be prudent to continue.

12. The Commission will not require APCo to modify its design at this time because the Project's NOx emissions are not expected to violate a law or regulation applicable to APCo; the Plant's NOx emissions are projected to be a low fractional percentage of the new performance standards for coal plants; modifications to carbon capture technology are being developed that may improve the technology and reduce its price; and national environmental requirements have not yet been enacted.

13. APCo's Project, as designed, will comply with all applicable emissions regulations. PC Rebuttal Ex. 1 at 6, 7.

14. Based on expected cost, developing technologies, and likely reduced Plant output, among other factors, the Commission concludes that retrofitting the Plant for carbon capture would be a major modification of the certificated Project and APCo must first obtain a certificate of convenience and necessity for that work.

15. Staff's recommended conditions, modified to require APCo to reasonably pursue tax credits and incentives, are reasonable and should be adopted.

16. APCo, through its Application, its testimony, and the FEED Study, has provided sufficient evidence to support its decision to meet its anticipated capacity needs by constructing the Project, particularly given the abundant supply of coal in West Virginia and the fact that the proposed site currently has the infrastructure in place to have coal transported and used at the Plant. The Commission concludes that the Project is an efficient and capable proposal to meet the baseload capacity needs of APCo's customers. Not only is the Project best suited to provide the needed baseload capacity needs, as opposed to the natural gas-fired facilities meeting mostly "peak" and "intermediate" needs, the Project will run more efficiently and at a cost on par with or below that of the natural gas-fired facilities and will enable the Plant to utilize an array of alternative coal sources and mixes, including coal mined in the State. The Commission agrees that the Project is the best option to meet the capacity needs of APCo and comply with current and future environmental requirements.

17. The Plant will have a positive impact on the local and state economies and it will be in the best interests of Trades Council members, APCo ratepayers, the public and the State.

18. The Commission understands the complexity and uncertainty about the Project's final cost and appreciates APCo's efforts to minimize that uncertainty. However, because of cost escalation concerns and the unknown but expected future requirements to limit GHG emissions, the Commission should not conclude today that APCo's estimated cost is a reasonable final estimate; instead, the Commission should require APCo's cost estimate to be subject to periodic review as discussed later in this Order.

19. APCo's proposed Project Surcharge does not "guarantee" APCo a revenue stream from the ratepayers. APCo will be required to document, support and justify construction and other costs and expenses related to the Project Surcharges to the Commission.

20. While it is true that customers will be required to pay rates which partially reflect the Project's cost earlier than under standard ratemaking approaches, the Commission concludes that the phase-in of rates and the other long-term benefits of the Project to the State, the customers and the other interests in the State offset the cost of paying a portion of rates before the Plant is in operation.

21. The Commission requires a utility to petition for approval of major changes in a project's cost or scope, and the Commission should continue that practice in this proceeding. When the Project cost estimate has been "fine tuned," if the revised cost exceeds the \$2.23 billion estimate in the Application, the Commission should require APCo to file for an amendment to the Certificate advising the Commission of the higher contract price before proceeding.

22. APCo should adopt budgets and milestones for progress during the construction and keep the Commission advised of how construction is progressing as compared to those budgets and milestones. Such updates can be in part satisfied as a part of any Project Surcharge process.

23. If the Commission perceives that the construction costs are escalating too rapidly, all other rate relief in this proceeding may be granted incident to general rate cases or other appropriate Commission decisions in proceedings initiated by APCo in this case or in a separate proceeding.

24. APCo should be able to recover the reasonable costs associated with constructing and operating the Project. It has never been the policy of the Commission that utilities be capped for reasonable costs associated with providing public service. The Commission should not adopt such a position now. It should, however, require APCo to demonstrate that those costs are reasonable.

25. In 1990, the West Virginia Legislature adopted W.Va. Code §24-2-1g, generally referred to as the Clean Coal Statute, which grants the Commission the authority to make ratemaking allowances for investment in clean coal and clean air technology following a determination that to do so is in the public interest. Although there have been references to the Clean Coal Statute in other Commission proceedings (such as *Monongahela Power Company*, Case Number 91-231-E-CN), the request to establish incentive ratemaking allowances for this Project under the Clean Coal Statute is a matter of first impression.

26. Because IGCC technology has the proven capability to capture CO<sub>2</sub> and because IGCC technology will result in lower emissions than a conventional coal plant, it is

appropriate to consider the Plant as a clean coal facility within the meaning of W.Va. Code §24-2-1g. Furthermore, APCo must use West Virginia coal for at least 75% of the Plant's fuel requirement. See W.Va. Code §24-2-1g(c).

27. The Project Surcharges do not transfer all risk to ratepayers if there is no CO<sub>2</sub> regulation or if APCo decides not to continue construction. APCo is acquiring the necessary debt and equity capital to construct the Plant. None of that capital is being contributed by customers and APCo remains at risk for future recovery of the capital invested in the project.

28. The regulatory lag that reduces the ultimate costs of traditional ratemaking in the present value studies presented by the Parties is unfair when the ENEC benefits of the Project are going to be credited to the benefit of customers starting in the first month that the Plant goes on line (assuming deferred ENEC accounting).

29. It is in the public interest for the Project to be constructed. Given the magnitude of the Project, a gradual phase-in of the eventual capital-related costs through a CWIP-related Project Surcharge is likewise in the public interest since the amounts paid by the customers during the phase-in will be credited to the ultimate cost of the Project, thereby resulting in a lower rate base and lower rates in the future. The Project Surcharge covers a portion, but not all, of the capital costs during construction while APCo continues to be responsible for acquisition of the capital necessary to construct the Project. Making the full capital and operating costs of the Project coincide with the in-service date without significant regulatory lag fairly balances the interests of the customers and APCo when significant net benefits from placing the Project in service will immediately be credited to ENEC costs that will be passed back to customers without the regulatory lag of a traditional rate case proceeding.

30. Continuing Commission oversight of the Project costs during construction as the Commission reviews the annual Project Surcharge filings will provide the Commission and the public an opportunity to closely monitor compliance with construction budgets and the prudence of APCo's budget controls prior to the final completion of the Project. Under the conditions established by the Commission, APCo has the burden of justifying any budget overruns and faces the risk of delayed recovery or disallowance of cost escalations that the Commission finds to be unjustified or imprudent. The Commission finds that CWIP-related Project Surcharges, authorized as a ratemaking allowance, fairly balance the interests of the customers and APCo and is, therefore, in the public interest.

31. The Commission concludes that the regulatory lag that helps to keep the ultimate costs of traditional ratemaking down in the present value studies presented by the Parties is particularly unfair when the ENEC benefits of the Project are going to be credited to the benefit of customers starting in the first month that the Plant goes on line (assuming deferred ENEC accounting).

32. Traditional ratemaking principles are not necessary or appropriate for the Project. The magnitude of the cost of the Project warrants examination of special rate treatment for the Project and the adverse impact that historical ratemaking can have on the implementation of all rates impact after the Project becomes operational.

33. Because the Project costs are high, it is reasonable to allow APCo to recover its carrying costs during the Project's construction to protect APCo's financial stability for this and other projects. In recognition of the costs of the Project, the Commission shall require status reports twice a year from APCo.

34. The Commission believes that it is in the public interest of the State of West Virginia for the Plant to be constructed and to authorize certain ratemaking allowances for the investment. The Project Surcharge mechanism proposed by APCo, along with the cautionary steps proposed by the Commission, will provide adequate review of its expenses during the annual ENEC proceeding to ensure that APCo's expenses are prudent and can be recovered through rates. That review will also provide an incentive for APCo to keep its expenses and costs to a minimum.

35. The Commission's determination that it is in the public interest to provide incentive ratemaking allowances must be counterbalanced by ensuring that the customers do not absorb imprudent or unreasonable costs. Pursuant to W.Va. Code §24-2-11b, the Commission is authorized to conduct continuing prudence reviews of APCo's proposed IGCC Project in order to review experienced costs relative to construction budgets and milestones; prudence of constructing the Project; and ensuring that customers pay reasonable costs.

36. Continuing prudence reviews are consistent with the Commission responsibility to ensure that utility rates are just and reasonable as required by W.Va. Code §24-1-1(a)(4).

37. The Commission should modify the procedures for the ongoing prudence review of the Project as required. Prudence review should be dynamic and capable of adapting to the processes necessary to ensure reasonable costs.

38. Because of the estimated cost of the Plant, it is reasonable to require APCo to continue to work diligently to pursue tax credits and/or other incentives to reduce the rate impact of the project.

39. Because the §199 deduction cannot be applicable until the Plant goes into service, the Commission need not address that issue at this time.

40. The Commission should establish a Task Force to consider APCo's participation in demand side management and consumer energy efficiency programs.

41. If there are differences between the West Virginia and Virginia Commission orders so significant as to be irreconcilable by appropriate State-specific accounting, or if the accounting required will be detrimental to West Virginia customers, APCo must inform the Commission of those differences and seek and obtain any modifications or clarification that are necessary to fully reconcile the conditions, ratemaking and accounting conditions imposed by this Order as compared to those established by the VSCC.

### **VIII. ORDER**

IT IS THEREFORE ORDERED that pursuant to W.Va. Code §24-2-11, the Application of Appalachian Power Company for a Certificate of public convenience and necessity to construct and operate a 629 MW Integrated Gasification Combined Cycle (IGCC) electric generating unit in Mason County, West Virginia is hereby GRANTED subject to the conditions listed below:

1. APCo shall seek additional approval from the Commission before proceeding if there are any material changes in the scope of the Project.
2. APCo shall commence and continue construction within five years of its current estimate, being the second quarter of 2008. If APCo fails to do so, this certificate becomes invalid without further Commission order, unless APCo obtains the Commission's approval to extend that time frame.
3. APCo shall pursue all reasonable and prudent state and federal tax credits or other applicable incentives for the Project to reduce the impact of Project costs to APCo's customers and notify the Commission if APCo receives any such credits or other incentives.
4. Within 10 days of the date of this order, APCo shall file an Affidavit evidencing its commitment to use coal produced in West Virginia for no less than 75 percent of the fuel requirements of the Plant.
5. If there are differences between the West Virginia and Virginia Commission orders so significant as to be irreconcilable by appropriate State-specific accounting, or if the accounting required will be detrimental to West Virginia customers, APCo must inform the Commission of those differences and seek and obtain any modifications or clarification that are necessary to fully reconcile the conditions, ratemaking and accounting conditions imposed by this Order as compared to those established by the VSCC.
6. APCO shall filed a revised Plant cost estimate no later than January 1, 2009
7. When the IGCC Project cost has been fine tuned under the GE/Bechtel contract, if the revised Project cost exceeds the \$2.23 billion estimate in the

Application, APCo shall file for an amendment to the Certificate advising the Commission of the higher contract price before proceeding.

8. APCo shall establish and adhere to Project cost budgets and milestones and submit them to the Commission on or before September 1, 2008.
9. Beginning September 1, 2008, and on September 1st of each year thereafter, as well as with each future ENEC filing, beginning March 1, 2009, APCO shall submit semiannual reports that show construction progress as compared to cost budgets and milestones.
10. As a closed entry in this proceeding, APCo shall notify the Commission upon substantial completion of the Project.

IT IS FURTHER ORDERED that APCo's request for special rate recovery is GRANTED, conditioned upon APCo's commitment to use coal produced in West Virginia for no less than seventy-five percent of the Plant's fuel requirements, as required by W.Va. Code §24-2-1g.

IT IS FURTHER ORDERED that rate recovery through the Project Surcharges shall be limited to certificated construction costs and any modifications to those costs which APCo can demonstrate are reasonable and prudent. Any cost recovery beyond that associated with the final certificated construction cost estimate, or Commission-approved escalations, shall be the subject of a base rate case or other appropriate proceeding.

IT IS FURTHER ORDERED that a Task Force shall be created to consider APCo's participation in demand side management and consumer energy efficiency programs. At a minimum, the Task Force shall include representatives of CAD, Staff and APCo, and other parties to this proceeding shall also be invited to participate. The Task Force shall publish notice one time statewide of the opportunity for others to participate in the Task Force. The CAD shall organize and chair the first meeting of the Task Force. The Task Force shall file, at a minimum, an annual report as part of APCo's ENEC proceedings.

IT IS FURTHER ORDERED that the Commission GRANTS the Trades Council's March 5, 2008 petition for leave to file a post-hearing exhibit.

IT IS FURTHER ORDERED that upon entry hereof, Case Number 06-0033-E-CN shall be removed from the Commission's docket of open cases.

IT IS FURTHER ORDERED that the Commission's Executive Secretary shall serve a copy of this Order on all parties of record by First Class United States Mail.

Commissioner Edward H. Staats concurs with the Commission decision and reserves the right to file a concurring opinion.

A True Copy, Teste:

  
Sandra Squire  
Executive Secretary

MAA/CLW/klm  
060033cm.wpd