REPORT OF THE

Virginia Coal and Energy Commission

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

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TABLE OF CONTENTS

Report of the
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To
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I. INTRODUCTION

The Virginia Coal and Energy Commission is established pursuant to Chapter 22.1 of Title 9 of the Code of Virginia, and is directed to "generally study all aspects of coal as an energy resource and endeavor to stimulate, encourage, promote, and assist in the development of renewable and alternative energy resources other than petroleum." (Va. Code § 9-145.1)

The Commission fulfilled its statutory charge in 1992 by holding three meetings and authorizing five subcommittee meetings. In addition to its statutory duties, the Commission was directed by House Joint Resolution 69 of the 1992 Session of the General Assembly to examine the policies necessary to promote greater use of wood wastes for fuel by state facilities. The Commission coordinated the conduct of the study by the Virginia Center for Coal and Energy Research and the Brooks Forest Products Center at Virginia Polytechnic Institute and State University. The report of the study has been published as House Document No. 23 (1993).

The most important event affecting patterns in energy use and conservation in 1992 was the enactment of the Comprehensive National Energy Policy Act. This far-reaching law, which was the subject of two Commission meetings, established new federal policies and standards in the areas of alternative fuels, renewable energy sources, natural gas pipeline licensing, electrical power transmission, and coal research and technology.

The Commission received briefings by the Department of Mines, Minerals and Energy on the first year of implementation of the Virginia Energy Plan. The Plan, announced by the Wilder Administration in August 1991, focuses on achieving energy efficiency and conservation in state and local government operations. The Plan also directed the Department of Mines, Minerals and Energy to examine opportunities for increasing the use of clean coal technology in the Commonwealth. The Department presented a report on possible strategies to enhance the technology's implementation.

The Virginia State Corporation Commission reported on its two-year preliminary study of conservation and local management (CLM) opportunities in Virginia. The Commission heard how CLM programs treat increased energy efficiency as a potential offset to the need to establish new power generating capacity resulting from growth in power demands.

The Commission continued to monitor the development of the Toms Creek IGCC project. The project was awarded a grant of approximately $100 million from the federal Department of Energy, subject to obtaining a buyer for its electrical power. Difficulty in obtaining a long-term power purchase agreement led the Commission to establish a special subcommittee, which brought together interested parties for three meetings to discuss methods of satisfying the conditions to the grant.

The Coal Subcommittee heard testimony on the impact of the proposed high-voltage transmission line from Wyoming, West Virginia to Cloverdale, Virginia. The subcommittee's study focused on the effect the line would have on the development of electrical generating facilities in Southwest Virginia.

The export market for Virginia coal was the subject of four reports received by the Commission. A shift in demand from metallurgical coal to steam coal, coupled with downward pressure on prices for U.S. coal, does not bode well for continued growth in the export market for Virginia coal. However, the lifting of the iron curtain has created new opportunities for exports to Eastern Europe.

The Commission's Energy Preparedness Subcommittee received reports on the operational and funding status of statewide energy assistance programs, including the Low-Income Home Energy Assistance Program and the Weatherization Assistance Program. The Subcommittee also heard testimony on the progress of the Clover power plant in Halifax County, which represents a major investment by Old Dominion Electric Cooperative, together with Virginia Power, in generating electrical power. Another trend in Virginia's energy program was reflected in a report by the Virginia Gas and Oil Board on implementation of the coalbed methane gas provisions of the Gas and Oil Act.

II. FEDERAL AND STATE ENERGY POLICIES

A. The Comprehensive National Energy Policy Act of 1992

President Bush on October 24, 1992, signed the Comprehensive National Energy Policy Act of 1992 (Public Law 102-486). This initiative's development, touching on virtually every sector of the energy industry, was closely monitored by the Coal and Energy Commission. Dr. John Randolph from the Virginia Coal and Energy Research Center in Blacksburg briefed the Commission in 1991 on the Bush Administration's National Energy Strategy, the catalyst for this federal legislation. Dr. Randolph returned to update the Commission in June 1992 on the status of the House and Senate energy bills advancing the National Energy Strategy and other energy policy agendas. He appeared before the Commission in January 1993 and presented the Energy Policy Act's key features, emphasizing provisions affecting Virginia's energy producers and policies.

Advanced Coal Technologies.

The Act promotes advanced coal technologies through a $278 million program (for fiscal year 1993) designed to promote advanced coal technologies. The program will provide research and development funding for research efforts to burn coal with fewer acid emissions and to convert coal as a transportation fuel. The legislation permits continuation of the Department of Energy's Clean Coal Technology Program currently funding projects to demonstrate innovative coal technology. That program was scheduled to end after the conclusion of project selections in 1992.

Coalbed Methane Recovery.

In a nod to Virginia's coalbed methane recovery laws (developed under the auspices of the Coal and Energy Commission) enacted in 1990, the Act adopted Virginia's coalbed methane laws as the federal standard for resolving complex ownership disputes -- a crucial step in fostering development of this resource. As discussed in Part VI of this report, the Virginia law's "pooling" provisions, by which a designated developer extracts the gas and profits are then held in escrow pending resolution of conflicting ownership claims, help break legal logjams over conflicting ownership rights previously complicating, if not obstructing, development of this resource within the Commonwealth. Several coal-producing states currently lacking ownership resolution mechanisms, (including West Virginia, Pennsylvania, Kentucky and Tennessee) are given three years under the Act to establish methods for resolving these disputes. Failure to do so will result in federal imposition of Virginia-style pooling requirements.

Water Replacement Obligations of Coal Mine Operators.

The Act also requires operators of underground coal mining operations to replace drinking, domestic or residential water supplies from a well or spring which has been contaminated, diminished or interrupted as the result of underground coal mining operations. These requirements are accomplished through the Act's amendments to the Surface Mining Control and Reclamation Act. These federal mandates were incorporated into HB 1687, introduced by Delegate Quillen during the 1993 Session of the Virginia General Assembly.

HB 1687's requirements apply to coal mining operations conducted after October 24, 1992, and to wells or springs in existence prior to the application for a surface coal mining and reclamation permit. While not expressly required under the Energy Policy Act's amendments to the Surface Mining Control and Reclamation Act, HB 1687 requires mine operators to maintain liability insurance in an amount sufficient to replace any water supply they may be required to replace. However, the requirement to maintain insurance expires when the U.S. Secretary of the Interior approves amendments to Virginia's regulatory program implementing the water replacement requirements.

Repair of or Compensation for Subsidence Damage.

In a related amendment to the Surface Mining Control and Reclamation Act contained in the Energy Policy Act, underground coal mine owners must promptly repair or compensate for damage to residential dwellings, related structures and noncommercial buildings caused by subsidence, or a sinking or shifting in land made unstable by underground mining. If not repaired, compensation for damage to dwellings and structures must be in the full amount of the diminution in value resulting from the subsidence. No comparable provisions are currently contained in Virginia state law.

Compensation for subsidence damage in Virginia mining regions was previously examined in 1988 by a Senate Joint Subcommittee pursuant to Senate Joint Resolution 59 (1988). The majority of that subcommittee, however, recommended that the Commonwealth defer to federal developments in this area (Senate Document 26 - 1989). These amendments, therefore, will resolve, to some degree, questions previously existing about a mine operator's legal obligations to surface owners vis-a-vis subjacent support.

Exempt Wholesale Electrical Power Producers.

The Act amends the Public Utility Holding Company Act (PUHCA) to establish a category of wholesale power producers exempt from PUHCA's provisions, and thus permitted to operate free of regulation as utilities. The Federal Energy Regulatory Commission (FERC) must approved rates charged by these exempt entities which include independent power producers, utility affiliates, and others engaged in wholesale power generation. State public service commissions (such as Virginia's State Corporation Commission) must, however, approve any transaction between a utility and an affiliated entity exempt under this provision.

Independent Power Producers: Access to Power Grid.

Transmission access by independent power producers (IPPs) was also addressed in the Act. Prior to the Act, IPPs were virtually dependent upon utilities' cooperation and consent in gaining access to the electrical transmission grid. The Act authorizes IPPs and other wholesale power producers to apply to FERC for a transmission service if (i) voluntary negotiations between wholesale producers and utilities have been conducted for at least 60 days, (ii) a transmission order from FERC directing the utility to "wheel" the wholesale power producers' power will be in the public interest, and (iii) reliability of affected utilities' systems will be maintained.

A FERC transmission order will also set rates paid to utilities. The Act requires that FERC-approved rates permit recovery of legitimate, verifiable economic costs including costs of grid enlargement, if necessary. Intrastate wheeling for IPPs has been the subject of extensive legislative study in Virginia for the past several years. Consequently, this development, combined with incentives for wholesale power production contained in the federal Public Utility Regulatory Policies Act (PURPA), may enlarge the role of independent power producers within the Commonwealth.

Other provisions

The bill also establishes national policies regarding nuclear energy, alternative fuels and vehicles, energy efficiency, renewable energy and the environment, and oil and natural gas production. Regarding energy efficiency, for example, the Act directs state electric utility regulators

(such as the SCC) to consider adopting policies that promote energy efficiency and conservation by electric utilities in lieu of building new power plants. Virginia's SCC, as discussed in Part III of this report, has already begun extensive promotion of conservation and load management (CLM) programs for electrical utilities it regulates. The Act establishes a grant program furnishing up to $250,000 in grants to help state utility regulators implement "least-cost" planning in utility load forecasting and management.

In summary, Dr. Randolph said, at the core of this Act are (i) promotion of more competition in the electrical utility industry (ii) encouragement for energy conservation and efficiency and (iii) significant funding for energy research and development -- particularly for coal-based technology and innovation. The Act's key provisions were summarized by Dr. Randolph in a document he furnished the Commission and which is attached to this report (Appendix A).

B. The Virginia Energy Plan

On August 20, 1991, Governor Wilder announced the Virginia Energy Plan, which seeks to help ensure an energy-efficient future for Virginia by achieving energy efficiency and conservation in state and local government operations. The Plan contains two goals: (i) increasing energy efficiency and conservation in state government and by its clients and (ii) advancing renewable and alternative energy sources in Virginia. The Department of Mines, Minerals and Energy (DMME) is responsible as the lead agency under the Plan for implementing about 60 percent of the strategies envisioned over the Plan's three-year term. The Department is also charged with working with the other state agencies, all of whom are required to become involved with energy conservation and energy management.

Goal 1: Increasing Energy Efficiency and Conservation

Kathy J. Reynolds, Assistant Director of Administration of DMME, presented the Commission with an update on the Department's implementation of the Plan. Ms. Reynolds outlined three areas where the Plan will produce improvements in energy efficiency and conservation: reduced consumption of finite energy resources, enhanced environmental protection, and increased fiscal responsibility. In the first year of the process, DMME is focusing its activities on enabling other state and local agencies to enhance their energy efficiency; in the second year, the Department will be working with state agencies to alter their programs in ways that will enhance the energy efficiency of their client groups; in the third year, the Department will focus on public outreach to businesses and consumers.

Ms. Reynolds reported several accomplishments in meeting the Plan's goal of increasing energy efficiency in state government and by its clients. The Institutional Conservation Program, a matching state and local government plan to retrofit eligible schools and hospitals, has commenced

operations. In 1991, $2.2 million in grants for improvements were awarded by DMME. Twelve institutions received technical assistance awards totalling $157,000 in 1992. These funds are used by institutions to conduct audits and energy planning. An additional $1.5 million of grants was awarded to 24 institutions for implementation of energy conservation measures.

The Plan's first year has witnessed the commencement of the Energy Rated Homes of Virginia, a program established by DMME to provide energy audits of homes. The program was tested at eight homes in Manassas and eventually will be tested in 50 homes. The tests will show whether the audit provides homeowners with useful information in improving energy efficiency. Once the program's computer software has been tested satisfactorily, it will be made available across the Commonwealth. DMME has assisted in the creation of a nonprofit organization, Energy Rated Homes of Virginia, Inc., (see Part VI of this report) to administer the program. The organization will work with mortgage lenders and real estate appraisers to enable home buyers to qualify for a larger mortgage on a house with greater energy efficiency, based on the lower utility costs that will be incurred. Virginia is one of 13 states working with the Department of Energy on an energy-rated homes project.

Another area in which DMME has been active in the Plan's first year is the integration of energy management into state agencies. The Department's role is to enable agencies to save money by reducing energy waste. Energy managers have been designated in 95 state agencies. In the next step, DMME will provide training for energy managers from each agency. After areas of potential savings are identified, the energy managers will implement appropriate strategies and track the savings generated. The Plan calls for a 25 percent reduction in energy use by state agencies by 1998. Computer software developed by DMME for measuring energy savings is being tested in eight state agencies and is expected to be operational in all agencies by next year.

Ms. Reynolds identified the financing of energy improvements at state agencies as a critical issue in implementing the Virginia Energy Plan. A task force consisting of DMME, the Department of General Services, and the Office of Planning and Budget recommended approaches agencies can use to finance the implementation of energy improvements. First, the task force developed a model request for proposal that would allow agencies to use performance contracting, whereby the agency contracts with an energy service company. The energy service company will identify savings and finance recommended energy improvements. Second, DMME is recommending the use of master leasing, in which energy-saving equipment can be financed over an extended period. Third, DMME is recommending a general fund capital outlay appropriation of 5 million dollars, to be used to pay for state agencies to implement low-cost energy improvements with high savings returns. Proposed guidelines would limit the cost of any projects to exceed $150,000 per facility, and require that projects pay for themselves within five years.

Goal 2: Advancing Renewable and Alternative Energy Sources

The second goal of the energy plan--advancing renewable and alternative energy sources--has two objectives: to increase the use of alternatively fueled vehicles, and to increase awareness of renewable and alternative energy sources by business, industry and consumers through education and outreach. Accomplishments under this goal include financing a grant program for alternatively fueled vehicles, under which $340,000 was awarded to six localities to convert 70 vehicles to compressed natural gas (CNG).

A second project in furtherance of this goal involves demonstrating renewable technologies in the operations of state agencies. Eight agencies were awarded grants totaling $328,000 to be used for demonstration of solar electric, solar heat, and other renewable technologies.

Other state agencies are also implementing strategies under the Plan. The Virginia Department of Transportation has converted 50 fleet vehicles to CNG. The Department of General Services allows preferential assignment of parking spaces for car poolers at state facilities. The Department of Waste Management has received 126 recycling plans from state agencies. A summary of major accomplishments of the Plan, prepared by DMME, is attached to this report (Appendix B).

C. Implementation Strategies for Clean Coal Technology

In furtherance of the objective of increasing energy production efficiency, the Virginia Energy Plan directed the DMME to conduct an assessment of coal-burning efficiency in Virginia, and to select state agencies to serve as hosts for clean coal technology demonstration projects. The Department retained an engineering firm to conduct two studies related to clean coal technology. The first study assessed the feasibility of clean coal technology in Virginia. The second study, the results of which were presented to the Commission at its January meeting, recommended actions that could be taken to enhance implementation of clean coal technology. A copy of the DMME report summarizing the results of the second study is attached to the report (Appendix C).

The study found that there is only a 10-year "window of opportunity" in which to take advantage of clean coal technology. In order to promote clean coal technology effectively, four barriers must be overcome: (i) cost competitiveness, (ii) awareness of the technology's advantages and expertise to design and operate clean coal plants, (iii) the need for demonstration of the technology's viability through pilot projects, and (iv) public acceptance of burning coal in an environmentally sound manner.

Six strategies were recommended for promoting clean coal technology:

1. Examine economic incentives to give clean coal technology an advantage over other technologies. Incentives might include tax breaks, accelerated depreciation, and rate-base adjustment.

2. Establish institutions of higher education as sources for education and information on clean coal technology. Specific proposals include establishing graduate and undergraduate coursework, continuing education for professionals, symposia, and libraries and databases on the technology and related subjects.

3. Establish state-financed training programs for the operation and maintenance of clean coal plants. The Department will work with community colleges to develop such programs under the Plan.

4. Fund the design and construction of clean coal pilot projects at state facilities. Possible projects include the conversion of existing coal-fired boilers, electric power generation, and coal-based vehicle fuels. The Virginia Energy Plan calls for DMME to work with the Department of General Services to identify potential pilot projects.

5. Establish a public relations program to improve perceptions of coal use by emphasizing the advantages of clean coal technology. The program could be financed by industries that would benefit directly from increased use of the technology, such as coal producers, utilities, and nonutility generators.

6. Require utility companies in the Commonwealth to support the development of clean coal plants by transmitting and purchasing the power they produce. The report cited the Toms Creek IGCC project in Wise County, which needs transmission capabilities and purchase guarantees to secure a federal clean coal technology grant.

The report noted that the effectiveness of these strategies will depend on several independent factors, which should be considered when deciding which strategies should be implemented. The factors include (i) the expectation that Virginia has only 50 to 60 more years of adequate coal reserves; (ii) conflicts with other state efforts, including the SCC's emphasis on conservation and loan management as an alternative to construction of new generating plants; (iii) research and development conducted outside Virginia; and (iv) the needs of various developers, such as utility generators, nonutility generators, industrial generators, and institutional facilities.

Members of the Commission raised several questions regarding the recommendations in the report. Mr. Hudson questioned whether an emphasis on removing sulphur and ash from coal overlooks the natural advantages of Virginia's cleaner, metallurgical-grade coal. Mr. Munsey took issue with the recommendation that utility companies be required to purchase power from clean coal plants. He questioned the rationale of subsidizing a technology when it is not cost-competitive in the marketplace.

III. REGULATION OF ELECTRICAL UTILITIES; EMERGING ISSUES

A. The SCC's Conservation and Load Management Program

The recently enacted Comprehensive National Energy Policy Act encourages energy conservation and load management (CLM) programs for utilities by providing federal dollars to state public service commissions in aid of CLM program development. Grants to state utility regulators for up to $250,000 may be made for that purpose. However, the Virginia State Corporation Commission (SCC) is apparently ahead of the curve, having just concluded a two-year preliminary study of CLM opportunities for Virginia utilities.

Richard Williams, Director of the SCC's Division of Economics and Finance, reported to the Commission on the SCC's CLM activities. Growing interest in CLM, also known as demand side management (DSM), stems from a general trend toward energy conservation coupled with the increasingly problematic nature of establishing new generating facilities or erecting new transmission lines. CLM/DSM programs treat increased energy efficiency as a potential offset to increased supply needs generated by accelerating demand growth. An outline of Mr. Williams' presentation, including a table of projected demand reductions, is attached a Appendix D.

Energy conservation programs anticipate actual reductions in energy consumption. Consumption reduction is usually the result of customer investment in capital improvements, e.g., insulation, high-efficiency lighting, and energy-efficient motors. Load management involves utility and customer planning to shift electrical usage to a lower-demand period, or to interrupt usage during periods of high demand. Load management, however, may not reduce consumption; that is not its objective. Ideally, load management spreads usage over a 24-hour period, thus reducing peak demand and the need for additional generating capacity.

A vital component to integrated resource planning, that is, the use of demand side and supply side options, is utilities' peak demand forecasting capability. Peak demand is the greatest demand placed on utilities' output capacity during a specified period of time. A second component is the commitment of utility regulators to integrated resource planning in a comprehensive and consistent manner. It is to the latter component that the SCC study was directed.

The SCC's preliminary CLM study resulted in a March 1992 SCC order (Appendix E) that contemplates action in the following areas:

- The SCC, reversing a policy established in 1970, will permit gas and electric utilities to use promotional allowances (i.e., rebates) for energy-conserving equipment, subject to review and approval by the Commission.

- The SCC will permit the cost of DSM programs to be recovered through the rate base with a return on investment.

- Virginia Power has been ordered to implement an experimental bidding program for demand side programs.

- The SCC will assist in public dissemination of all available information concerning CLM programs.

Mr. Williams emphasized that the order would be the beginning of the SCC's long-term commitment to CLM study. The SCC's next goal was completion of a study examining means of determining the cost effectiveness of CLM programs. A task force drawn from electric and gas companies, environmental groups, consumer groups and others, worked with the SCC staff to review various cost/benefit tests for CLM program effectiveness.

The SCC's staff on February 9, 1993, submitted its report on the cost/benefit of demand side management programs. As stated in a February 22, 1993, SCC order inviting comment "the [SCC] staff stated that a multi-perspective approach to determining the cost and benefits of demand side management is needed...." The SCC staff has also proposed that utilities proceed with utility experiments on pilot programs, without formal SCC approval, unless the programs involve promotional allowances or have associated rates. A copy of the SCC's February 22, 1993, order is attached (Appendix F).

B. Power Transmission Issues

The Commission's Coal Subcommittee met in September in Richlands to review current information on the effects on economic development in Southwest Virginia of the 765 kV power transmission line proposed by Appalachian Power Company (APCo) to run from Wyoming, West Virginia, to Cloverdale in Botetourt County. The location of the proposed line is shown on Appendix G. Issues addressed by the Subcommittee included the sources and uses of electrical power in Virginia, the status of APCo's request for project approval by regulatory authorities, and concerns that the proposed 765 kV line will discourage the development of power-generating facilities in Southwest Virginia.

Overview of Electrical Energy in Virginia

Dr. Carl Zipper of the Virginia Center for Coal and Energy Research outlined the electrical energy power sources, uses, and capacity of APCo and Virginia Power. Both companies have internal loads that exceed their internal power generation by about 10,000 GWHrs, though they cover their deficits by different approaches. APCo relies primarily on purchasing power from generators in the American Electric Power (AEP) system, and Virginia Power relies on a mix of purchasing power from other utilities and from nonutility generators. Dr. Zipper's data indicate that the rates and production expenses of Virginia Power's electricity are higher than APCo's.

The cost of Virginia Power's out-of-state power purchases totalled $218.7 million in 1991. The comparable figure for APCo's Virginia service territories was estimated between $138.1 million and $301.5 million. The total cost incurred by APCO and Virginia Power to purchase electricity to cover Virginia's generating deficit ranges between $356 million and $520 million. Dr. Zipper then discussed whether paying for power produced out-of-state is detrimental to Commonwealth, and noted that APCo may have saved its rate-payers money as a result of the low cost of power produced by its AEP affiliates. His projections indicate that APCo's Virginia power production deficit will increase to 13,419 GWHrs by 2001. APCo plans to build two coal-fired baseload plants with 900 MW of capacity each by 2011, though it is premature to address their locations.

Dr. Zipper noted that the 765 kV Wyoming-to-Cloverdale connection is a critical link in Virginia Power's long-range plans. If power generating facilities are to be built in Southwest Virginia, transmission capacity is a critical constraint. Two additional hurdles to locating power plants in Southwest Virginia include APCo's ability to build larger plants in West Virginia due to greater availability of water, and the fact that a plant built in Virginia would optimally be located near its major service areas (Roanoke and Danville) to reduce transmission distances.

Dr. Zipper offered that approval of the proposed 765 kV line will neither cause nor prevent the construction of power generating facilities in Southwest Virginia. It is an important factor, however, that will affect power usage trends in Virginia long into the future. Dr. Zipper concluded that the odds of a coal-fired power plant being built in the region are greater with the new line than without it, because such a plant will not be constructed in the absence of the ability to transmit the power to Virginia Power's grid. Copies of the tables provided by Dr. Zipper to the Commission are attached as Appendix H.

SCC Staff Perspective

William F. Stephens of the SCC provided the Subcommittee with the staff's view on the need for additional electrical transmission capacity. Mr. Stephens concluded that the transmission line is the most favorable of the options available to APCo to meet the needs of its ratepayers. The cost of constructing the line will result in a net cost to rate-payers of approximately seven million dollars. Building gas-fired combustion turbine (CT) plants in Virginia would cost approximately five times as much as building the transmission line, and building coal-fired facilities would cost five times more than the cost of building CT plants.

Mr. Stephens noted that Virginia's coal industry would benefit from the proposed transmission line in two ways. First, it would avoid paying higher rates for electricity that would result from development of an alternative source of electricity. Second, any electricity generated from coal-fired plants in Southwest Virginia would be able to wheel 500 MW of electricity to Virginia Power's grid over the line. SCC staff noted that APCo's likely

response if the line is not built will be the construction of CT plants near Roanoke or Lynchburg due to the mandate that utilities use the least-cost option in installing equipment and infrastructure.

SCC staff concurred with Dr. Zipper's conclusion that the chances of a nonutility generating plant being built in Southwest Virginia are greater if the proposed 765 kV line is built than if it is not, because it will provide a mechanism that currently does not exist for transmitting power from the region. He stressed that the primary benefit of the line, however, will be holding down the power rates that APCo charges its Virginia customers.

APCo withdrew its application with the West Virginia Public Service Corporation for approval of the portion of the Wyoming-Cloverdale line located within that state prior to the Coal Subcommittee's meeting. APCo has indicated it will refile its application in 1993. If the application is revised to relocate the line, APCo's pending application with the SCC will have to be refiled. However, the issue of the need for the line may not need to be reexamined.

James McNeely, representing Common Ground, Inc., a West Virginia-based organization, spoke at the subcommittee meeting in opposition to the proposed transmission line. He disputed APCo's position that it needs the capacity the proposed line would provide. According to Mr. McNeely, the transmission line would allow APCo and AEP to dump thousands of megawatts of midwest-produced electricity into Virginia. He cautioned that APCo should not take for granted the approval of the West Virginia portion of the line.

APCo's Arguments for the Transmission Line

Charles A. Simmons of Appalachian Power defended its proposal to construct the 765 kV line. The line is needed to enable the utility to continue to meet its obligation to provide reliable and economical service to its customers. APCo's approach of building large coal-fired plants on the major waterways in the northwest part of its service territory within West Virginia has resulted in its Virginia customers being dependent on transmission for their power supply. Mr. Simmons noted that load projections show that by the winter of 1998-1999, the failure of a single critical line will result in overloading of the transmission system south and east of Charleston, West Virginia.

Mr. Simmons contended that the proposed 765 kV transmission line would also produce secondary benefits to the coal-mining regions of Southwest Virginia. APCo has committed to set aside 25 percent of the additional capacity of the transmission system (approximately 500 MW) for use by independent power producers seeking eastern markets for their power. Mr. Simmons stated that APCo lacks the transmission capacity to enter into long-term contracts to wheel power with a high degree of reliability without this reinforcement program.

The best thing that APCo can do for the region, according to Mr. Simmons, is to maintain a low cost energy source for economic development. If the utility builds 3400 MW of baseload coal-fired capacity in Southwest Virginia (which is the amount needed to provide performance comparable to that of the 765 kV line under a double contingency), electricity rates would increase by 106 percent, assuming that the cost is spread over both Virginia and West Virginia ratepayers. If the West Virginia Public Service Corporation disapproved the spreading of the cost over its ratepayers, the effect on Virginia's ratepayers would be even greater.

C. The Toms Creek IGCC Project

At its January 1992 meeting in Abingdon, the Commission received an introductory report on the Toms Creek Integrated Gasification Combined Cycle (IGCC) Demonstration Plant to be built at the Toms Creek mine near Coeburn in Wise County, Virginia. The Commission was briefed on the status of the project at its June meeting, at which time a special subcommittee was appointed to meet with interested parties regarding efforts to satisfy conditions which threatened to derail the project. By the end of the year, the subcommittee reported that some, but not all, of the hurdles faced by the project's proponents had been overcome.

Background

In September 1991, the federal Department of Energy (DOE) awarded a $109 million Clean Coal Technology Program grant to TAMCO Power Partners for construction of the power plant. TAMCO Power Partners is a partnership of Coastal Power Production Company of Roanoke, a subsidiary of Houston-based Coastal Corporation, and Tampella Power, a Finnish company. The Toms Creek project was one of three clean coal technology construction grants awarded by the Department of Energy in 1991 following a very competitive process.

The Toms Creek project originally was estimated to cost $219.1 million. However, a reconfiguration of the project has increased its cost to approximately $473 million. The original configuration called for one turbine burning low BTU gas produced in an integrated gasified combined cycle (IGCC) coal gasification process, and a second turbine burning conventional natural gas. The reconfiguration plan calls for the second turbine to be fueled by pulverized coal. The revised plant is designed to produce 186 MW of electrical power, up from the original design capacity of 107 MW. Approximately 55 MW of the total would be produced by a turbine fueled by natural gas. Coal consumption at the reconfigured plant will be 575,000 tons per year. The plant in its original design would have consumed approximately 157,000 tons of coal per year. In addition, the latest information states that the amount of the DOE grant will be $95.7 million.

Conditions on grant approval

James L. Van Lanen of Coastal Power advised the Commission that recipients of Clean Coal Technology Program grants have one year to sign a cooperative agreement with DOE. A critical aspect of the grant program is that recipient projects be commercially viable, and not merely be for research and development purposes. Mr. Van Lanen reported in June that TAMCO was required to meet two conditions before signing a cooperative agreement with DOE: (i) arranging for the wheeling of its power to a customer and (ii) negotiating a long-term commitment for the purchase of its power. The first of these conditions was satisfied in April 1992 when Appalachian Power Company agreed to wheel power produced at the Toms Creek Project to the Virginia Power grid on a reliable basis and at a reasonable rate.

At the time it applied for the DOE grant, TAMCO intended to satisfy the condition for a long-term power purchase agreement by selling the electricity to Virginia Power, which had projected robust growth in its power needs. Mr. Van Lanen identified two barriers that have prevented the signing of a power purchase agreement with Virginia Power that would have satisfied the DOE's second condition.

The first barrier is a decline in Virginia Power's projected demand for electrical power. Virginia Power revised its forecast in 1992 to reflect a decline in the need for base load capacity. James Rhodes and Larry Ellis of Virginia Power reported to the Subcommittee that reduced load growth, load management and conservation efforts, an exchange agreement with Appalachian Power, and the proposed interconnection with Appalachian Power have resulted in a decline in Virginia Power's anticipated need for new capacity by 1999 from 2,000 to 600 MW. Moreover, the additional 600 MW of capacity needed by 1999 will be for combustion turbine "peaking" facilities fueled by natural gas or oil rather than for coal-burning base load facilities. Accordingly, Virginia Power has concluded that it does not need the 186 MW of base load capacity that would be provided by the Toms Creek project. A chart presented by Virginia Power reflecting the revised projection for capacity growth is attached as Appendix I.

Several members questioned Virginia Power's position. The amount of power from the Toms Creek project is about one percent of the utility's total capacity. Existing contracts for the purchase of 900 MW annually are scheduled to expire at the end of the decade. Moreover, they contended, the pessimistic forecast for load growth is based on a continuation of the economic slowdown, and a robust economic turnaround could leave Virginia Power with a shortage of capacity. Virginia Power responded that its present reserve margin is more than adequate and that buying additional capacity creates the risk that the utility may be charged with imprudence. TAMCO responded to the decline in the estimated demand for electrical power by offering to postpone the project's completion from 1995-96 to 1998-99.

The second barrier to concluding a power purchase agreement with Virginia Power is disagreement on the proper price of the electricity. Mr. Van Lanen stressed that the Toms Creek project can help Virginia Power avoid the "gas price risk," which is the effect of runaway increases in the cost of natural gas. Mr. Van Lanen also asserted that the costs of 186 MW from the Toms Creek plant is competitive with the cost Virginia Power would pay for a new pulverized-coal, base load facility satisfying all projected environmental regulations. The utility countered that the cost of the Toms Creek power exceeds both its avoided energy and capacity costs and the cost of power from a new pulverized coal facility, even after factoring in the $95.7 million DOE grant. A chart presented by Virginia Power depicting the price differential is attached as Appendix J.

In addition, Virginia Power expressed concern that contracting to buy TAMCO's power outside of its competitive bidding process would be inappropriate. In response to comments by Commission members that the DOE grant constituted a special circumstance which would justify a decision by Virginia Power to sidestep its competitive bidding process, Dr. James Rhodes stated that the utility would purchase the power if the General Assembly made such a public policy decision, despite his belief that it would not be in the best interests of the utility's ratepayers.

TAMCO has investigated several alternatives to entering into a power purchase agreement with Virginia Power. One option is to purchase an existing contract to supply power to the utility, and then relocate the generating site to Toms Creek. The Subcommittee heard discussions regarding Virginia Power's contract to buy power from a proposed congeneration facility in Buena Vista owned by Louisville Gas & Electric (LG&E). Virginia Power contracted to buy approximately 55 MW from the planned Buena Vista facility. However, Virginia Power cancelled the contract in 1993 when LG&E was not able to obtain an air discharge permit in time to meet the deadline for commencing construction.

Another option under discussion involved TAMCO acquiring an interest in the Tellus or Smith cases now in arbitration at the SCC. The Tellus and Smith arbitration cases involve power plants that may have a legal right to sell their power to Virginia Power under Public Utilities Regulatory Policies Act of 1978 (PURPA) rules, which predated the implementation of Virginia Power's competitive bidding process. The SCC has been arbitrating the issue of the price that must be paid for the power from the Smith and Tellus projects for several years.

Pricing Controversy

At the Toms Creek subcommittee's second meeting, held in Roanoke in August, TAMCO and Virginia Power presented opposing views on the cost of electricity from the Toms Creek project.

Clark Burley of Coastal Power presented data on the discrepancy between its figures and those generated by Virginia Power on the comparative costs of the 186 MW Toms Creek project and a comparable new pulverized coal

facility. Coastal contended that Virginia Power's analysis is inaccurate because it (i) includes coal escalation costs in excess of the 2.5 percent maximum escalation rate proposed by Coastal, (ii) fails to include $500 million in the cost of environmental controls that would be required on a new pulverized coal facility to meet air emissions regulations, and (iii) reflects a discount rate based on short-term capital costs rather than a 12 percent discount rate more appropriate for long-term analysis. After factoring in these discrepancies, Coastal concluded that the total costs of service over a 40-year period for its 186 MW project would be cheaper than a new pulverized coal base load facility. Moreover, when operated above 70 to 75 percent of capacity, the levelized cost of the Toms Creek power would be lower. Over a period from 2000-2039, a new pulverized coal base load plant would cost $8.1 billion, while the Toms Creek plant would cost $6.8 billion. Charts supplied by Coastal at the August subcommittee meeting are attached as Appendix K.

Larry Ellis of Virginia Power did not agree with Coastal's figures, and noted that Coastal had not presented these figures prior to the meeting. The subcommittee recommended that the staff of the SCC conduct an analysis of cost figures to be provided by both Coastal and Virginia Power. In order to give the SCC staff time to collect and review the data without impairing the positions of parties under existing contracts, the subcommittee requested that Virginia Power extend the deadline on the contract for the Buena Vista project for a period of 90 days. Mr. Ellis stated that Virginia Power would comply with this request.

Virginia Power advised the Subcommittee that even if the SCC analysis supports Coastal's conclusion that Toms Creek power is cheaper than power from a hypothetical new pulverized coal plant, Virginia Power would not be willing to buy the power absent an order of the SCC or an act of the legislature, for two reasons. First, Virginia Power does not need the power. Second, it does not want to buy capacity outside of its competitive bidding process.

Attempted Legislative Solution

James Van Lanen of Coastal reported to the Commission at its January 12, 1993, meeting that a cooperative agreement between TAMCO and the Department of Energy had been signed and approved by the U.S. Congress. The agreement provides that the grant proceeds will be repaid out of licensing fees collected by Tampella Power from use of the IGCC technology by other generators. Grant money will be released to TAMCO until a power purchase agreement is signed. The cooperative agreement will be void if a power purchase agreement is not executed by September 1993.

Pursuant to the request made by the Toms Creek subcommittee at its August meeting, William Stephens of the SCC presented an analysis of the comparative cost of the Toms Creek project and hypothetical coal-fired power plant to the full Commission on January 12, 1993. The SCC staff reported that the terms of Coastal's offer of November 6, 1992, exceed the cost of a 400 MW base load power plant similar to the Clover facility under construction in Halifax County by between $75 million and $150 million over a 25-year period, discounted to 1992 dollars.

Representatives of TAMCO objected to the SCC staff analysis, and noted that they had not reviewed the numbers. Virginia Power officials countered that the SCC estimate may understate the difference between the cost of power from the Toms Creek plan and from an alternative source, because competitive bidding may reveal a source less expensive than a Clover-type facility. The cost differential between the Toms Creek project and a 400 MW base load plant was attributed to the expense of the new gasification technology and to the comparatively small size of the Toms Creek project. A 400 MW conventional coal-fired power plant has greater economies of scale, resulting in a lower per-megawatt cost.

Critics of the SCC staff report argued that it is not fair to compare a 400 MW facility with a 186 MW facility. Mr. Stephens countered that Virginia Power would not build a 200 MW plant because of the lack of economies of scale. He added that 200 MW of the power generated from conventional coal-fired plant would be cheaper than 186 MW of power from the Toms Creek plan. Staff did not prepare a comparison based on increasing the output of the Toms Creek plan to 400 MW because the additional transmission capacity may not be available.

Several members of the Commission concluded that the benefits of developing the new energy technology in Southwest Virginia with almost $100 million in federal funds justified assuming a risk that the costs of the Toms Creek project may be higher than an alternative. Furthermore, the TAMCO offer, with its limits on coal costs, could be the cheapest alternative. They called for legislation that would produce a buyer of power from the Toms Creek project. One member suggested that the state, rather than certain ratepayers, should assume the risk.

Other members countered that forcing Virginia Power to buy expensive electricity would constitute a tax on its ratepayers in the eastern part of the Commonwealth, and that the actual cost difference could exceed the $75 million to $150 million mentioned by Mr. Stephens. Unable to reach consensus, a meeting of the Toms Creek subcommittee was called for the following day.

Among the options discussed at the subcommittee's January 13 meeting was requiring Virginia Power to purchase the Toms Creek Plant's Power to purchase the electricity at the price set by the SCC in the Smith or Tellus arbitration cases. Representatives of Virginia Power said the company could not agree to step outside the competitive bidding process to negotiate with TAMCO. However, if ordered to negotiate, it would do so, though quantifying a price that would hold its ratepayers harmless would be difficult.

Factors raised in support of the Toms Creek project included the 150 to 200 direct jobs it would create, and the three million dollars annually it would add to the local tax base. Project skeptics countered that the additional power would not be needed until 2002 or 2003, and that it was too early to commit to building capacity to meet that anticipated demand.

At the close of the meeting, Delegate Quillen asked staff to prepare legislation for consideration by members of the Toms Creek subcommittee. Legislation was drafted and distributed to the members on January 18, 1993. The legislation would require the SCC to arbitrate a power purchase agreement between a nonutility generator and a public utility when requested, if the generator receives a $90 million grant from the Department of Energy for a clean coal technology project. The SCC could use the federal PURPA standards for establishing price and other conditions. Similar legislation was introduced in the 1993 Session by Delegate Quillen as House Bill 2129, a copy of which is attached to this report (Appendix L). The bill passed the House of Delegates, but was defeated on the Senate floor.

IV. WOOD WASTE: A RENEWABLE ENERGY SOURCE

Virginia's wood processing industries create manufacturing residues, such as bark and sawdust, that may be reprocessed as secondary commercial products (e.g., mulch, particle board). However, the levels of wood wastes currently generated often exceed the market's capacity to absorb them. Wood products manufacturers see wood residue disposal as a barrier to expansion unless a new market can be found for it. Many are hauling most of their waste to landfills since the market for secondary products is saturated. Thus, the most promising use may be as a fuel.

HJR 69 Study.

The A.L. Philpott Southside Development Commission's 1992 report recommended an examination of the policies necessary to promote greater use of wood wastes as fuels at state facilities. The 1992 General Assembly enacted HJR 69, directing the Coal and Energy Commission to conduct this study with the assistance of the Virginia Center for Coal and Energy Research (VCCER) and the Brooks Forest Products Center at VPI. The use of wood wastes as fuels in state facilities is viewed as an important way to stimulate the development of this important alternative fuels market.

Carl Zipper from the VCCER and Jack Muench from the Brooks Forest Products Center appeared before the Commission to discuss the wood waste issue and to propose a study plan for HJR 69. Dr. Muench stated that the use of wood wastes as fuel is not novel to state government. Seventeen major buildings in the Capitol Complex in Montpelier, Vermont, have been converted from number 6 fuel oil to wood fuels, generating an annual savings of over $100,000. Emphasizing wood burning's environmental advantages, Dr. Muench noted that wood, unlike coal, generates no sulphur emissions. Coal's ash content usually exceeds six percent; wood, by comparison, has less than one percent of ash.

The study reviewed air quality and solid waste issues associated with wood burning, wood waste plant conversion programs from other states, data from the three state facilities in Virginia that currently use wood waste as fuel and capital project funding policies. The study also developed criteria for evaluating the technical and economic efficiency or benefits of converting

state facilities from their current fuel source to wood. A report of the study was published in House Document 23 of 1993.

The study found no overt policies or procedural barriers to the use of wood wastes, or other nonconventional fuels. Nonetheless, barriers to increased wood-waste fuel utilization by state facilities were identified. As reported in HD 23 these include:

- lack of quantitative information on potential availability of wood-waste fuels;
- difficulties faced by persons making boiler-choice decisions in obtaining information on wood-waste fuel burning and handling equipment, and on costs required to operate and maintain that equipment;
- lack of incentive for state agencies making boiler-choice decisions to specify nonstandard equipment; and
- lack of a mechanism for incorporating the positive economic impacts of purchasing fuels originating from in-state sources into the boiler-choice decisions.

The study concluded that if the state promotes increased utilization of wood wastes for fuels in state facilities, actions available include the following:

- Direct an appropriate agency to conduct a study which will identify availability and prices of wood wastes capable of being used for fuel in the state (Introduced and approved as HJR 582).
- Direct the Department of General Services to assemble information on wood-waste burning and handling equipment, and the requirements of operating and maintaining that equipment, for use by state agencies making fuel-choice decisions (Introduced and enacted as HB 1671).
- Direct the Department of Planning and Budget to require that wood wastes and other nontraditional fuels available for purchase from in-state suppliers be included in fuel-comparison analyses conducted to evaluate boiler purchases, if there is evidence that such fuels could be available for a reasonable price, over the long term (Introduced and enacted as HB 1670).
- Direct the Department of General Services to alter its boiler-fuel comparison analysis guidelines, so as to enable consideration of the positive economic impacts of boilers likely to utilize fuels purchased from in-state sources (Introduced as HB 1672).

The Coal and Energy Commission approved all of the HJR 69 study recommendations and formally recommended their enactment by the 1993 Session of the General Assembly. Copies of bills introduced incorporating these recommendations are attached to this report (Appendix M).

Wood Waste Combustion: Regulatory Issues.

The Virginia Department of Mines, Minerals and Energy (DMME) informed the Commission of its participation in a multistate study of wood products in the waste stream. Examining the regulatory issues affecting the processing and combustion of waste wood for energy, the study was recently concluded and a report of its findings released. DMME's Kathy Reynolds presented a summary of that report to the Commission at its August meeting in Roanoke.

Air quality and solid waste disposal issues were foremost in the report's analysis. Ms. Reynolds noted that current state regulations in both areas would influence the course of developing a market and standards for wood waste as an alternative fuel. Burning waste wood treated with chemicals, for example, would result in the burn site's classification as an incinerator, thus triggering stringent regulations. Additionally, ash produced by wood waste burning may require testing to determine whether it is nonhazardous (e.g., does not contain PCBs or dioxin) and may be disposed of in a landfill. A copy of an outline of Ms. Reynolds' report is attached (Appendix N).

V. MARKETS FOR VIRGINIA COAL

A. Coal Export Trends and Prospects

Virginia coal exported to Europe, Asia, South America, and other overseas destinations accounted for 16.7 million tons of Virginia's 1991 coal production. This export market is responsible for over 14,000 mining industry jobs, and it adds over $700 million to the Commonwealth's gross state product. According to Carl Zipper from the Virginia Center for Coal and Energy Research (VCCER), however, this market may have peaked. A summary of Virginia's coal exports from 1989 through 1991, presented by Dr. Zipper at the Commission's August meeting, is attached to this report (Appendix O).

Over 90 percent of Virginia coal currently exported is metallurgical, or "met" coal. Mark Bower, manager for new business development with Norfolk Southern Corp., told the Commission that European and South American customers are seeking met coal price reductions at a time when Virginia's remaining met coal reserves are in very thin seams, difficult to mine and thus expensive to bring to market. The nature of the European coal market -- the most important export market for Virginia's coal producers -- is changing the most dramatically. "The growth market in Europe is in steam coal," Bower told the Commission, yet "the highest and best use for Virginia coal is producing coke. It will not be easy to shift these coals to steam use."

Norfolk Southern believes that the export market is changing in response to downward pressure on prices for U.S. coal exports resulting from increased international coal sales by Australia, Indonesia, and other low-cost sources. Additionally, the low levels of ash and volatiles in Central Appalachian met

coal -- making it a premier metallurgical coal -- may become less significant as new steel making technology makes possible the use of less expensive, lower grades of coal. Dr. Zipper told the Commission that by the year 2000 it is estimated that overall U.S. met coal exports will decline to 42 million tons -- down from 62 million tons in 1990.

The European Economic Community's (EEC) plan to eventually eliminate coal subsidies in member nations may increase the competitiveness of U.S. coal generally in the European markets. However, North Sea natural gas may be a threat to the coal export market as power plants are constructed or retrofitted to use natural gas. Additionally, Norfolk Southern reported, support is growing in Germany for "carbon taxes" tied to sulphur dioxide emissions from fixed point sources such as coal-fuel power plants. This may depress the European market for U.S. coal imports.

In the meantime, however, the U.S. Energy Information Administration estimates that international demand for U.S. steam coal will result in export tonnage increases from 104 million tons in 1990 to 235 million tons in 2010. Appalachian exports in that same period are expected to increase by 100 percent. However, as Norfolk Southern spokesman Mark Bower emphasized, "the problem with Virginia steam coal is that it is in deep mines and expensive to mine. These coals will be competing with coals out of West Virginia and Kentucky surface mines." Thus, the oversupply of met coal in the world market, combined with the continuing evolution of product demand, suggests an uncertain future for Virginia coal exports.

B. Virginia Coal Exports to Eastern Europe

Stoyan Bakalov, representing the Clover International Corporation of Manassas, Virginia, presented a detailed account of his company's coal export operations involving shipments of Virginia coal to a Bulgarian steel mill. Clover plans to export 750,000 tons of coal out of Newport News in 1993. Bakalov said that his company has virtually eliminated the credit risk usually associated with transactions involving Eastern European countries by requiring letters of credit issued by New York banks. Payment terms are strict as well: 90 percent of the purchase price is paid in advance; the remaining 10 percent is due when the ships depart from Norfolk.

Bakalov noted, however, that his company's export successes in Bulgaria reflect relationships established between Clover and trade officials in the Bulgarian government--relationships still indispensable in that part of the commercial sphere. Bakalov also noted that while Virginia has provided a good business environment for Clover, he views the Commonwealth's tax on gross receipts is a barrier to the coal export trade due to the unusually high overhead associated with coal exporting. A summary of Bakalov's presentation to the Commission is attached (Appendix P).

VI. VIRGINIA ENERGY ASSISTANCE PROGRAMS

The Virginia Coal and Energy Commission's Energy Preparedness Subcommittee met in Richmond on October 7, 1991, and received reports on statewide energy efficiency and assistance programs. Reports were received concerning the Energy Rated Homes of Virginia, LIHEAP and Weatherization Assistance Programs.

A. Energy Rated Homes of Virginia

Energy Rated Homes of Virginia, Inc. (ERHVI) was established pursuant to the Virginia Energy Plan (see Part II of this report) to bring the home energy rating system into the marketplace. ERHVI's executive director, Christine Taylor, reported that the rating system is designed to improve the overall housing stock efficiency in Virginia. Computer software has been developed to incorporate field-collected data on house type, floor area, insulation levels, air leakage, window size, orientation, shading solar gain, roof color, water heater efficiency, and space heating and cooling efficiencies. The resulting data base is used in connection with a numerical rating system to produce a score for each home listed using this software package.

A numerical score on a 1-100 scale is produced for each home rated. This numerical score is then translated into a one-to-five star rating. The rating sheet also provides information on projected annual energy use in BTUs and an annual estimated energy cost by fuel types. ERHVI's three-year operating goals include rating 10,000 homes, establishing a statewide network of certified raters, and showing that 500 - 1,000 homeowners qualified for higher debt-to-income loan ratios because of this home rating system. A summary of this program is attached (Appendix Q).

B. LIHEAP

The Low-Income Home Energy Assistance Program (LIHEAP) is an energy assistance program administered by the Virginia Department of Social Services (DSS) and funded by federal appropriations and oil overcharge moneys. In fiscal year 1992, the program spent over $28 million on fuel assistance to qualifying low-income households and over two million dollars on energy-related crisis assistance. Cathy Olivis, a DSS energy specialist, told the Subcommittee that nearly 125,000 Virginia households were assisted by LIHEAP in fiscal year 1992. The majority had household incomes under $8,000 and nearly half had children under age 16. Ms. Olivis reported that while federal oil overcharge dollars will be depleted at the end of fiscal year 1993, alternative funding mechanisms should keep this program fully funded for the foreseeable future. An assessment of this program for 1991 and 1992 is attached (Appendix R).

C. Weatherization Assistance Program

The Weatherization Assistance Program (WAP) provides home weatherization assistance to qualifying low-income households. In fiscal year 1991, 3,635 Virginia households received an average $1,648 in weatherization (e.g., insulation, weather-stripping, etc.) through this program. Alice Fascitelli of the Department of Housing and Community Development, the program's administering agency, advised the Subcommittee that scheduled phase-outs of federal oil overcharge funding will reduce the program's future budget. A $7.9 million budget was available in FY 91; only $3.7 million is available in FY 92. A further reduction to $3.2 million is anticipated in 1993. An analysis of this program is attached (Appendix S).

VII. MISCELLANEOUS COMMISSION ACTIVITIES

A. Virginia Oil and Gas Board: An Update

Coalbed Methane Gas Law Background.

The 1989 General Assembly requested the Coal and Energy Commission to study the then-current provisions of the Virginia Gas and Oil Act to determine whether it should be modified to increase its effectiveness. One of the resulting Commission recommendations was suggested clarifications of law governing the development and production of coalbed methane gas resources.

Coalbed methane gas was once viewed principally as a danger to miners put at risk when this explosive gas, trapped in coal seams, was released by coal mining activity. Mine operators attempted to reduce this hazard by venting this gas to the surface. New technology, combined with federal stimuli for development of alternative fuels, has transformed this hazard into an important energy resource. However, a serious barrier to full-scale production required the attention of the Commission and, ultimately, the intervention of the 1990 General Assembly.

Under the then-current laws (Va. Code § 55-154.1), known as the Migratory Gas Act, commercial developers of coalbed methane gas ran the risk of entangling themselves in litigation over gas ownership. The Migratory Gas Act established a presumption that the surface owner owned all migratory gases (e.g., coalbed methane) beneath the surface. However, deeds and leases in Southwest Virginia's mining areas frequently sever mineral interests from the surface estate conveyed or leased, leaving uncertain whether subsurface interests created by lease or conveyance included migratory gases. As a consequence, commercial gas developers were reluctant to begin drilling in areas where gas ownership rights were less than clear out of concern that third parties claiming title to the gas rights would sue for trespass and seek civil damages for "willful taking." Further complicating matters were coal operators' concerns that fracturing coal seams to extract natural gas might make it practically difficult or economically unfeasible to mine the seams.

The Commission supported proposed legislation addressing the concerns of commercial gas developers and mine operators alike. First, a statutory or "forced" pooling mechanism was proposed to permit gas development to occur where coalbed methane ownership rights were in dispute. A percentage of gas production proceeds would be escrowed pending determination of legal entitlement or upon agreement among all claimants. The coal operator concerns were addressed by requiring gas developers, under certain conditions, to obtain the prior consent of the coal's owners before coalbed methane is extracted from a coal seam. Finally, the Commission endorsed a proposal creating a seven-member Virginia Gas and Oil Board, whose duties would include issuing pooling orders, dealing with conservation issues, and hearing all appeals from the decisions of inspectors regarding well permits. The Commission's recommendations were enacted by the 1990 General Assembly as new provisions in the Virginia Gas and Oil Act.

Oil and Gas Board Oversight of the Coalbed Methane Laws.

W.G. Mason, a member of the Gas and Oil Board, advised the Commission at its August meeting that the Act's two-year operation has been an unparalleled success in fostering commercial development of coalbed methane gas. According to Mason, 110 coalbed methane wells were drilled in 1991 at a cost of approximately $200,000 per well. Most of the drilling has occurred in the Oakwood Field in Buchanan County in the Pocahontas #2 seam, considered one of the most gaseous coal seams in the country. Moreover, a pipeline to transport the gas will soon be completed, connecting with the Columbia pipeline system.

Forced pooling pursuant to the 1990 legislation is indispensable to this fledgling industry. In some cases, the coalbed methane developer and the owner or lessee of the mineral rights to a parcel are one and the same, or are affiliated. However, it is commonly the case that surface interest and the mineral rights are separately owned. The existence of separate leases for oil and conventional natural gas in areas with known coalbed methane pockets further necessitates statutory pooling. Mason said that forced pooling also works particularly well where the potential owners of the coalbed methane rights associated with a parcel of property may number in the hundreds, making leasing methane gas rights -- outside of forced pooling -- a virtual impossibility. In one case cited by Mason, one 33-acre parcel had over 1,000 potential gas rights owners.

Virginia's coalbed methane laws are now serving as a model for federal and international legislation. The Comprehensive National Energy Policy Act of 1992 requires states in the Appalachian Basin with coalbed methane to establish a mechanism for resolving coalbed methane ownership disputes that are at least as stringent as federal standards modeled after the Virginia pooling mechanism. There are also reports of German and French interest in using the Virginia coalbed methane laws as a model in connection with the development of the coalbed methane industry in these European countries as well.

B. Power Generation by Electrical Cooperatives

Old Dominion Electric Cooperative (ODEC) and Virginia Power are jointly constructing a twin-unit, 786 megawatt generating facility near Clover, in Halifax County. Thomas Dick, representing the Virginia, Maryland, and Delaware Association of Electric Cooperatives, advised the Energy Preparedness Subcommittee that this project will produce significant base load for Virginia's fast-growing cooperative service territory. The first unit will be on line in 1995 and the second in 1996.

The Clover generators combine coal, a native fuel source, with advanced scrubber and fly-ash-disposal technology to produce a system whose emissions specifications exceed those established in the 1990 federal Clean Air Act Amendments, according to John Lee, ODEC spokesman. The $1.2 billion project features a $400 million pollution control system expected to remove over 99 percent of the fly ash and at least 94 percent of sulfur dioxide emissions.

The project will have positive economic impact on this Southside Virginia community: 900-1400 employed during construction -- most residing within a 100-mile radius of the site -- and 225 permanent employees (with a projected $5 million payroll) will reside in the community when both generating units are on line. This project will make ODEC more energy independent since the Clover Project will replace over 300 megawatts of power ODEC purchases from other generators with its own production. A summary of this project is attached (Appendix T).

C. Funding for VCCER

The Virginia Center of Coal and Energy Research (VCCER) at Virginia Polytechnic Institute and State University, founded by the General Assembly in 1977, has provided valuable assistance to the members of the Commission in its study of energy issues. The Center's appropriation has been included within the Research Division portion of Virginia Tech's budget (item 179) since the Center's founding. However, the funds allocated by the University to the Center have been reduced since 1989.

The Commission recognized that establishing a separate line item in the state budget for VCCER would both protect the Center's funding from further reductions by the University and would give the Center greater recognition. Accordingly, the Commission unanimously recommended at its January 1993 meeting that an amendment to the state's 1992-1993 budget be adopted which would establish a "line item" for the VCCER.

The recommended budget amendment was adopted by the General Assembly. Though still included as part of the Research Division's line item, the amendment adds a provision that the total appropriation includes $150,031 from the general fund each year for the VCCER.

VIII. APPENDIX GUIDE

The Energy Policy Act of 1992

Provisions Affecting Virginia

Coal:

- Mining: remining rules; operator required to repair subsidence damage to structures and replace damaged water supplies.
- Bailout of UMWA retiree health plans.
- Enhanced coal R&D, including CCT.
- Coal promotion programs: exports of coal and CCT, met coal utilization, coalbed methane, utilization of coal and coal combustion wastes.

Electricity:

- Exempt Wholesale Generators (EWGs) exempt from PUHCA.
- Opens up opportunities for U.S. utility operations in foreign countries.
- FERC must issue transmission service orders for power wheeling if certain conditions are met; FERC sets rates to permit cost recovery.
- Electricity R&D: renewable, fusion, fuel cells

Nuclear Energy:

- Streamlines nuclear plant licensing
- Creates government-owned Uranium Enrichment Corporation
- Review of High Level Waste Management Plan
- Advanced reactor R&D: certification of standardized, advanced LWR design by 1996.

Alternative Fuels and Vehicles:

- Minimum state fleet purchase requirements: 10% by 1996, 75% by 2000.
- Private fleet purchase standby requirement.
- State plans for alternative fuel implementation, federal financial assistance.
- Tax credit for electric vehicles; tax deduction for clean-fuel vehicles and infrastructure.
- Research, development, demonstration of electric vehicles, other alternative fuels and vehicles, and infrastructure.

Energy Efficiency:

- State building code review and certification.
- Federal grants for utility commissions encouragement of demand-side programs.
- Federal grants for revolving loan for energy efficiency in state and local government buildings.
- Efficiency R&D: auto efficiency, heating and cooling, buildings, motors, industries.

Renewable Energy and Environment:

- Incentive payment of 1.5 c/kwh to qualified renewable energy facility.
- Permanent extension of investment tax credit for solar, geothermal.
- Two-year study on greenhouse gases.
- Demonstration program modeled after CCT; R&D and other studies.

Oil and Natural Gas Production:

- Reform of allowable minimum tax for independent oil and gas producers.
- Reduces restrictions on gas imports.
- R&D: natural gas resource base, coal and gas cofiring, enhanced oil recovery.
- Section 29 tax credit not extended for nonconventional gas from coal seams and tight formations.

Coal

Mining:

- Remining: OSM to issue new rules for remining and reprocessing of abandoned coal mine refuse.
- Subsidence from underground mining: Requires operators to promptly repair or compensate material damage resulting from subsidence to residential dwelling, related structures, and non-commercial buildings.
- Water supply replacement: Requires operators to promptly replace domestic drinking water supply from well or spring in existence prior to application for mining, which has been affected by contamination, diminution, or interruption from underground coal mining.
- Sec. of Int. shall issue regulations within one year for subsidence and water replacement provisions, and review the adequacy of existing requirements regarding subsidence.
- Abandoned mine land fund contributions from operators extended to 2004.
- For small coal operators (<300,000 tons per year), costs of certain permit application activities shall be assumed by the regulatory authority.

Health Care of Coal Miners:

- Bailout of UMWA retiree health plans: (a) those covered by their last employee will continue to be; (b) as many as possible covered by the UMWA trust fund will revert back to last employer; (c) those remaining will be covered by the combined UMWA combined benefit fund, financed by premiums, existing funds, and AML trust fund interest.

Coal Research, Development, Demonstration, Commercialization:

- Additional solicitations authorized under Clean Coal Technology program.
- Research, development, demonstration, commercialization of coal-based technologies, with special reference to coal-fired diesel engines, cofiring coal and wastes, nonfuel coal uses, coal refining, underground coal gasification, low-rank coal applications, magnetohydrodynamics, and coal liquefaction ($278 mil., FY93).

Coal Promotion Programs:

- Special studies of and programs for coalbed methane development, metallurgical coal utilization, coal exports, clean coal technology export promotion, utilization of coal wastes, utilization of coal combustion byproducts, coal-fuel mixtures, national clearinghouse of coal-related technologies.

Coalbed Methane Ownership:

- Identified states without adequate statutes, regulations, or case law for coalbed ownership and development shall adopt program similar to that adopted by Virginia; if not, DOI will administer program.

Electricity

PUHCA Reform: Exempt Wholesale Generators (EWGs)

- Establishes new category of exempt wholesale generators (EWGs) which if certified by FERC, can operate free of regulation as a utility. FERC must also approve rates charged by EWGs. EWGs include IPPs, utility affiliates, and others engaged in wholesale power generation.
- State commission must approve transactions between a utility and its affiliates, and may review the books of EWGs.
- Eases or eliminates most restrictions on U.S. utility operations in foreign countries.

Transmission Access:

- FERC must issue a transmission service order on request to any wholesale seller if: (a) voluntary negotiations have been conducted for 60 days, (b) the order would be in the public interest, and (c) reliability of affected utility systems would be maintained.
- FERC sets transmission rates to permit recovery of legitimate, verifiable economic costs including costs of grid enlargement.

Research and Development:

- Five year R&D programs established for renewable electricity ($209 mil., FY93), high eff. heat engines (from conserv. budget), fusion energy ($340 mil., FY93), fuel cells ($52 mil. FY93), high temp. superconductivity ($22 mil., FY93).

Repeal of Powerplant and Industrial Fuel Use Act of 1978.

Nuclear Energy

Nuclear Plant Licensing:

- Streamlines nuclear plant licensing by combining construction and operating licensing into one-step procedure, and by providing for certification of standardized designs.

Uranium Enrichment Corporation:

- Restructures DOE's uranium enrichment program by establishing a government owned corporation under the management of a five-member board of directors, in order to preserve domestic supply of uranium and maintain competitiveness worldwide.

High-level Radioactive Waste Management:

- Requires EPA to establish radiation protection standards for the Yucca Mountain depository site, based on NAS study.
- Review adequacy of 1982 Waste Management Plan.

Nuclear Plant Decommissioning:

- Utilities required to pay $150 mil. annually to fund for cost of decommissioning plants and enrichment facilities; fund is capped at $2.25 bil. State commissions are to treat these payments as necessary costs of fuel.
- Decommissioning Fund income tax rate lowered from 34% to 20%.

Advanced Reactor Research and Development:

- Goals: Sept 1996 completion of standardized advanced light water reactor design for certification by NRC; Sept 1996 completion of submission for preliminary design approvals for standardized modular HTGC reactor and LM reactor technology; development of advanced reactor designs capable of providing gridpower as soon as practicable, but no later than 2010.
- DOE to develop 5-year program plan to guide activities to achieve goals.
- DOE to develop 5-year program plan to achieve certification of advanced LWR design by 1996.
- Funding: $213 mil. ~~FY~~93.

Alternative Fuels and Vehicles

Definitions:

- Alternative fuels: alcohols, alcohol mixtures (85%, but DOE may set down to 70%), natural gas, lpg, hydrogen, coal-derived liquids, other bio-fuels, electricity, and DOE-determined.
- Alternative fuel vehicle: dedicated or dual fueled.
- Fleet: 20 or more light-duty vehicles, centrally fueled, used in SMSA, owned by govt or person controlling 50 or more such vehicles; except law enforcement, emergency, military vehicles.

Minimum Federal and State Fleet Requirements (vehicle model years):

	1993	1994	1995	1996	1997	1998	1999	2000+
• Federal:	5000	7500	10000	25%	33%	50%	75%	75%
• State:	–	–	–	10%	15%	25%	50%	75%
• AF providers:	–	–	–	30%	50%	70%	90%	90%

(for electricity firms, reqmnts start 1/1/98 for elect. vehicles)

Petroleum Motor Fuel Replacement Goals:

- 10% by 2000, 30% by 2010; DOE to examine feasibility of goals within 3 years, and modify goals if not achievable.
- Private fleet alternative fuel vehicle goals: 20% for 1999-2001, then + 10% per year to 70% for 2006 and thereafter.
- If DOE determines that 2010 goals cannot be achieved voluntarily and could be achieved thru private fleet requirement, it can establish a private fleet AF vehicle reqrmnt: 20% in 2002, 40% in 2003, 60% in 2004, 70% in 2005+.

State and Local Incentives and Federal Financial Assistance:

- Following DOE guidelines to be established within one year, states may submit alternative fuels and alternative fueled vehicle incentives and program plans. For states with approved plans, DOE may provide grants for plan implementation and for alternative vehicle acquisition ($50 mil., 5 yrs).
- Federal low-interest loan program shall be established by DOE within one year, giving preference to small business fleet owners ($75 mil., 3 yrs).

Electric Motor Vehicles:

- Electric Vehicles Commercial Demonstration Program provides 50% federal cost share for projects to demonstrate commercial electric vehicles and to provide discounts to users of such vehicles ($50 mil., 10 yr).
- Electric Vehicle Infrastructure Program provides 50% federal cost share for research, demonstration, commercial application of infrastructure and support systems ($40 mil., 5 yrs).

Tax Provisions Relating to Alternative Fuels:

- Provides tax deduction (a) for the clean-fuel portion of the cost of clean-fuel vehicles, except electric vehicles (up to $2,000, $5,000 for truck or van, $50,000 for large truck or bus) and (b) for clean fuel storage and delivery property (up to $100,000).
- Provides 10% tax credit for qualified electric vehicles, up to $4,000.

Research and Development for Alternative Fuels and AF Vehicles:

- Programs on alternative fuel vehicle technology, renewable hydrogen energy, and advanced diesel engines ($119 mil., FY93).
- Five-year comprehensive program on electric motor vehicles and associated equipment ($60 mil., FY93).

Energy Efficiency

Buildings:

- State Building Codes: By October 1994, each state must certify that it (a) has reviewed the energy efficiency part of residential and commercial building codes with reference to established model codes, and (b) has determined through an open, public process whether it is appropriate to revise its codes.
- Federal Building Standards: Energy-efficiency standards are to be established for new federal buildings (by October 1994) and for new housing subject to federally assisted mortgages (by October 1993).
- National voluntary guidelines for residential energy efficiency rating (by April 1994).
- Ten regional centers will be established to promote energy efficiency in buildings.
- HUD is to promote "energy efficient mortgages" through 5 state pilot program.

Utilities:

- Through an amendment to PURPA, electric utilities and PUCs must consider requiring (a) integrated resource planning, (b) cost recovery for energy-efficiency programs that makes them at least as profitable as supply-side measures, and (c) rate changes to encourage investments in efficiency measures in power generation, transmission, and distribution. Whether utilities engage in such activities should continue to be determined by state law and state commissions.
- Grants up to $250,000 will be available to state regulatory authorities to encourage demand-side management.
- Gas utilities are also encouraged to employ IRP and invest in efficiency.

Appliance and Equipment Efficiency Standards:

- An efficiency rating and labeling program is established for windows.
- Mandatory performance standards and labeling requirements are established for commercial and industrial heating, cooling, water heating equipment, electric motors, lamps, and plumbing equipment.
- Energy efficiency testing and information programs are established for office equipment and luminaries.

Industrial:

- Grants to be available to improve the energy efficiency of industrial facilities and certain processes.
- Guidelines to be established for energy-efficiency audits and recommended efficiency levels for industries.

State and Local Assistance:

- Grants to qualified states up to $1 million for revolving loan fund to finance efficiency improvements in state/local government buildings.
- Establishes programs for training designers and contractors.
- Provides funding to low-income weatherization agencies to develop utility and private-sector partnerships; also makes grants available for evaluation of weatherization programs and training of personnel.
- Repeals Energy Extension Service

Federal Agency Energy Management:

- Encourages increased energy efficiency in federal facilities, including setting mandatory standards for energy consumption.
- Encourages the use of federal purchasing power to promote energy efficient products.
- Allows federal agencies to participate in performance contracting.

Energy Efficiency Research and Development:

- Five-year program on cost effective technologies, with special attention to auto fuel efficiency, heating and cooling technologies, advanced buildings, electric drives, pulp and paper, metals, and other energy-intensive industries ($178 mil., FY93, $275 mil., FY94).

Tax Provisions:

- Utility subsidies for energy conservation measures to residential customers are exempted from taxation.

Renewable Energy and Environment

Renewable Energy Production Incentive:

- Qualified Renewable Energy Facility (owned by state or political subdivision or nonprofit cooperative, using solar, wind, biomass, or geothermal, except municipal waste-to-energy and certain geothermal) may receive payments over 10 years in the amount of 1.5 cents per kilowatt-hour, adjusted for inflation and the price of oil.

Other Financial Incentives:

- The 10% investment tax credit for solar and geothermal property in extended permanently.
- The Section 29 credit for producing fuel from nonconventional sources (currently for facilities put in place before Jan. 1993) is extended for facilities put in place before Jan. 1997, but only for gas produced from biomass and synthetic fuels from coal, and not for gas produced from coal seams, tight formations, and Devonian shales.

Renewable Energy Research and Development:

- Program for demonstration and commercial application projects modeled after the Clean Coal Technology program.
- Renewable energy R&D ($209 mil., FY93, $275 mil., FY94).
- Other studies and programs: renewable energy technology exports and training, study of tax treatment of renewables.

Environment:

- Energy and Environment: R&D on improved efficiency, renewable energy, and advanced nuclear reactor design.
- Global Climate Change: two-year study on feasibility and implications of greenhouse gas reductions; development of a least-cost energy strategy; national inventory and voluntary reporting of greenhouse gas emissions; innovative environmental technology transfer program to developing countries; global climate change response fund for international efforts ($50 mil., FY94).

Oil and Natural Gas Production

Alternative Minimum Tax Reform:

- Changes in AMT will allow independent oil and gas producers to claim more of their drilling costs as tax-exempt business expenses.

Natural Gas:

- Reduces restrictions on imports and exports of natural gas.
- Five-year programs on increasing the domestic recoverable natural gas resource base, on gas and coal cofiring, and on new and advanced natural gas utilization technologies ($30 mil., FY93).

Oil:

- Strategic Petroleum Reserve expanded, new rules for drawdown and distribution, and acquisitions from domestic stripper wells allowed.
- Five-year programs on enhanced oil recovery ($57 mil., FY93), oil shale ($5 mil., FY93).
- Modification of mineral claims
- Reform of FERC procedures for regulating oil pipeline rates.

Major Accomplishments of the Virginia Energy Plan

State Agency Energy Management Planning Process

- Each State Agency has identified an Energy Manager who is responsible for integrating energy management into the day-to-day operations of their agency through the development of Energy Management Plans. The goal of this initiative is to reduce energy consumption by 25% by 1998.
- The Department of Mines, Minerals, and Energy (DMME) is developing a guide to be used by Energy Managers in the development of agency plans. Training will be provided across the state for Energy Managers on: 1) The use of the guide; and 2) How to develop agency specific plans.

Financing Options for State Agency Energy Projects

- DMME has organized and held three task force meetings which resulted in the recommendation of financing options for energy efficiency projects in state facilities.
- Recommendations made were: 1) Establishment of a $5 million fund for low to medium-cost energy retrofits; 2) Use of performance based contracting, 3) Use of the Master Lease Program; and 4) Agency's use of energy savings for the purpose of paying for additional energy conservation retrofits in state facilities.
- DMME has developed a guide to assist agencies in choosing the best financial mechanism for their projects. DMME will also provide on-going technical assistance for financing energy conservation projects.

Renewable Energy Technologies

- DMME has initiated a demonstration project of environmentally sound renewable energy technologies in state facilities. Eight agencies have been selected (through a competitive process) to demonstrate solar electric (photovoltaic) and solar heat (thermal) technologies.
- Photovoltaic systems which convert sunlight directly into electricity will be installed to power remote applications such as water quality monitoring stations and airport runway lights.
- Solar thermal technology will be used for such applications as heating water for juvenile residential units and correctional institutions.

Alternative Fuel Fleet Conversions

- The Virginia Department of Transportation is converting 50 state vehicles to operate on compressed natural gas. The fleet vehicles are located in the Northern Virginia and Tidewater areas. A refueling station will be established at each location.
- DMME selected six local governments to participate in a matching grant program to convert fleet vehicles to operate on alternative fuels. A total of 70 fleet vehicles will be converted to run on compressed natural gas. Each locality is working with a public utility to establish refueling stations. DMME contributed $340,000 and total project costs exceed $2.4 million.

VIRGINIA ENERGY PLAN

THE NEED FOR A VIRGINIA ENERGY PLAN

- Energy consumption in the U.S. grew by 16 percent between 1975 and 1990. During the period, due to economic development and population growth, energy consumption in Virginia grew by 45 percent.
- Virginia's per capita energy consumption increased from 20 percent below the national average in 1980, to only 3.5 percent below the national average in 1989.
- Virginia's state facilities currently consume over $100 million dollars in energy annually.
- The Virginia Energy Plan focuses on energy efficiency, conservation, and the development of renewable and alternative sources of energy.
- The Virginia Energy Plan is an integrated approach to energy resources management planning and requires each state agency to establish an energy management plan to incorporate efficiency in agency operations and programs.

VIRGINIA ENERGY PLAN MISSION:

- Ensure an energy-efficient future for Virginia.

VIRGINIA ENERGY PLAN BENEFITS:

- Fiscal Responsibility - Can lead to a $25 million annual reduction in energy costs in state government operations by 1998.
- Environmental Protection - Improvements in environmental quality will result from the reduction of air pollutants being emitted into the air by wasteful consumption of fossil fuels.
- Energy Security - Reduce Virginia's dependence on foreign oil by increasing the use of alternative energy resources and environmentally sound domestic resources.

VIRGINIA ENERGY PLAN GOALS:

- To increase energy-efficiency and conservation.
- To advance renewable and alternative energy sources.

VIRGINIA ENERGY PLAN RATIONALE AND APPROACHES:

- Year 1 - Energy-efficiency in state and local government operations.
- Year 2 - Energy-efficiency in state agency programs.
- Year 3 - Public outreach for business, industry, and consumers.

THE VIRGINIA ENERGY PLAN IS ORGANIZED INTO 7 OBJECTIVES:

- End Use Efficiency and Conservation
- Transportation Efficiency
- Energy Production Efficiency
- Energy Awareness
- Energy Management Planning
- Use of Alternative Transportation Fuels
- Use of Renewable and Alternative Energy Sources

Energy Rated Homes of Virginia

- A home energy rating system has been established for new and existing homes in Virginia. DMME developed computer software to be used in analyzing the energy efficiency of new and existing homes.
- A non-profit organization, Energy Rated Homes of Virginia, Inc., has been established to administer the operation of the program. Home ratings will be used as a financing tool by home buyers to include the cost of energy improvements in their mortgages, and/or qualify for a larger mortgage amount, as well as improve the overall efficiency of the home.

Institutional Conservation Program (ICP)

- The ICP provides matching grants for energy studies and energy conservation measures for schools and hospitals each year. This year DMME has granted a total of $157,762 for technical assistance grants to twelve institutions. In addition, a total of $1,501,718 has been granted to 24 institutions for implementation of energy conservation measures.

Local Government Controls Optimization Program

- DMME has provided matching grants to six local governments for the purposes of optimizing heating, ventilating, and air conditioning (HVAC) control systems. The six participating local governments include Fairfax City, Richmond, Clarksville, Tazewell, Norfolk, and Lynchburg.

State Agency Energy Cost and Consumption Monitoring

- DMME has established a pilot project to monitor the energy cost and consumption in state facilities and for state fleets. Participating in the pilot project is Department of Corrections, Department of Rehabilitative Services, Department of Youth and Family Services, Department of General Services, Department of Mental Health, Mental Retardation, and Substance Abuse Services., Virginia Commonwealth University/Medical College of Virginia, James Madison University, and DMME. This pilot project is testing the appropriateness of the ENACT software package, developed by Washington State Energy Office, for use by Virginia state agencies.

Oil Overcharge
Estimated Summary of Funds
1992-1994

	Starting Balance July 1, 1992	Anticipated Revenue	1992-94 Commitments	Revenue-Commitments
Exxon	$1.4 Million	$100,000 Interest Earnings	$3 Million LIHEAP	($1.5) Million
Stripper Well (Including Texaco)	$4 Million	$2.2 Million $275,000 Interest Earnings	$2.2 Million DMME - ICP, EES, SECP $1.2 Million Capital Projects $1.0 Million Housing Partnerships $200,000 Alternative Fuel Fund $150,000 Forestry Dry Hydrants	$1.725 Million
Diamond Shamrock	$1 Million	$75,000 Interest Earnings	$300,000 ICP Administration $500,000 Va. Econ. Develop. Fund	$275,000
TOTAL	$6.4 Million	$2.650 Million	$8.550 Million	$500,000

OIL OVERCHARGE

SUMMARY OF FUNDS
1986 - 1992

	Cumulative Funds Received	Cumulative Interest Earned	Total Funds
Exxon	$ 54,030,291.84	$ 14,271,329.45	$ 68,301,621.29
Stripper Well (Includes Texaco)	$ 40,915,891.41	$ 12,527,688.77	$ 53,443,580.18
Diamond Shamrock	$ 2,626,535.15	$ 627,419.94	$ 3,253,955.09
TOTAL	$ 97,572,718.40	$ 27,426,438.16	$124,999,156.56

Department of Mines, Minerals and Energy December 1992

Clean Coal Technology

Potential Implementation Strategies

SUMMARY

Through the Virginia Energy Plan (VEP), which Governor Wilder adopted in September 1991, the Commonwealth of Virginia has made a commitment to pursue development of clean coal technology, which enables construction of power plants that burn coal more cleanly and efficiently than conventional coal-fired plants. There are many potential benefits from use of clean coal technology.

- Increased demand for the low-ash and low-sulfur coals found in the Virginia coalfields;
- Improvements in air quality;
- Reliance on a energy-generating fuel supply that is abundant, accessible and locally produced; and
- Potential for selling clean coal technology, along with the coal, to foreign markets.

ENGINEERING STUDY

DMME contracted with an engineering firm to conduct two studies related to clean coal technology. In the first study, the consultant assessed the feasibility of emerging technology in Virginia and, in the second study which is summarized here, the consultant recommended actions that could be taken in Virginia to enhance clean coal technology. Phase two of the engineering study was published this past February by the Department of Mines, Minerals and Energy (DMME). Based on utility projections, start-up time and plant life, the study indicates there is only a 10-year "window of opportunity" in which to take advantage of clean coal technology. Certain barriers must be overcome in order to promote clean coal technology effectively.

- The cost of burning coal with the new technology must be competitive with the costs of using other fuel sources;

- The engineering and technical community must be aware of the potential advantages of clean coal technology, and possess the expertise to design and operate clean coal plants;
- The viability of clean coal technology must be demonstrated through pilot projects; and
- The public must be willing to accept that there is potential for burning coal in an environmentally sound manner.

The study also recommends a number of strategies for promoting clean coal technology in Virginia. These strategies, which are designed to overcome the identified barriers, may be grouped in four main categories.

- Economic incentives to give clean coal technology an advantage over other technology;
- Programs to increase engineering and technical knowledge of clean coal technology;
- Clean coal pilot projects; and
- Public-relations programs to promote clean coal technology as efficient and environmentally sound choices for energy generation.

IMPLEMENTATION OF RECOMMENDED STRATEGIES

Implementation of the strategies would require both public and private involvement. Through its analysis of the study results, the Department has identified ways to implement these strategies in the Commonwealth, and has assessed some pros and cons for each identified method. Certain methods would require legislative action, while others may be implemented with existing state authority. Under the provisions of the VEP, work already has begun on some strategies, as indicated below.

1. Economic Incentives

Examine economic incentives to give clean coal technology an advantage over other technology. These might include tax breaks, accelerated depreciation, incentive rate of return and rate-base adjustment. To be effective, such an examination should: 1) list all possible incentives; 2) analyze the pros and cons of each incentive; 3) quantify the costs and describe the benefits for each incentive; 4) recommend how and when incentives should be

implemented; and 5) provide a method for determining the viability of each incentive based on a variety of factors at any given time. Actual implementation of such incentives would require legislation.

- Pros:
  - Provides basis for offering concrete, measurable cost savings to potential developers of clean coal projects.
  - Incentives would give clean coal a competitive edge over other technology and fuel sources.
  - Offering incentives would demonstrate publicly Virginia's commitment to developing Virginia-based natural resources in an environmentally sound manner.
- Cons:
  - Adequate study to prove viability of incentives could be expensive, possibly exceeding $100,000. Needs certain level of financial commitment to succeed.
  - Attraction of incentives is highly dependent on external market conditions.
  - Other incentives may compete with and cancel out incentive for clean coal projects.
  - Incentives could be costly at a time when budget constraints are in place.

2. Education

Establish Virginia higher educational institutions as sources for education and information on clean coal technology. Programs aimed at this goal might include coursework at undergraduate and graduate levels; continuing education for professionals; symposia; and libraries and databases on clean coal technology and related subjects such as coal analyses, boiler technology and government regulation. Under the VEP, the Department will work with higher education to develop such programs.

- Pros:
  - Help establish Virginia as a leader in clean coal technology, attracting experts who could encourage development of clean

coal plants within the state.

- Encourage more decision-makers to consider clean coal technology as a good alternative.
- Generate new expertise for the industries and institutions that want to use clean coal technology.
- Help convince potential developers of Virginia's commitment to clean coal technology.

- Cons:
  - Require commitment of millions in educational funds.
  - May require substantial change in philosophical approach to engineering and technical education.
  - Subject to competition from others states with clean coal projects underway.

3. Training

Establish state-financed training programs for the operation and maintenance of clean coal plants. Under the VEP, the Department will work with community colleges to develop such programs.

- Pros:
  - Generate new skilled workers for the industries and institutions that want to use clean coal technology.
  - Reduce cost of operating clean coal plants.
  - Help convince potential developers of Virginia's commitment to clean coal technology.
- Cons:
  - Require commitment of thousands in educational funds.
  - May require substantial change in philosophical approach to engineering and technical training.
  - Industry may consider training needs too site-specific to be provided by state institutions.

4. Pilot Projects

Fund design and construction of clean coal pilot projects at state facilities. Such projects might involve electric-power generation or any other use of coal-fired boilers, and could use either standard coal fuels or liquidized coal hybrids. Pilot projects also could test coal-based vehicle fuels. Projects could include conversion of existing boilers to burn clean coal fuels. Federal grant funds may be available, but such a project also could require a state appropriation. The VEP calls for the DMME to work with General Services to identify potential pilot projects at state institutions.

- Pros:
  - Would provide government-financed testing for technology that could be used by private industry.
  - Would be good vehicle for public-relations efforts.
  - Could be built into design of new state facilities or retrofit at existing facilities with need to reduce pollutants.
- Cons:
  - Failure of technology would be costly for institutions with pilot projects.
  - Failure of technology could undermine all other efforts, including public relations.
  - Technology chosen for testing might not prove suitable for other uses.
  - Mismanagement of project could be perceived as failure of technology.

5. Public Relations

Establish a public-relations program to improve the public perception of coal use, with emphasis on the advantages of clean coal technology. A PR program might be designed by an independent contractor, and financed by industries that would benefit directly from increased use of the technology, such as coal producers, utilities and non-utility generators.

- Pros:
  - Increase public acceptance of coal as a fuel for energy

production.

- Help sell other efforts to promote clean coal technology.
- Reduce regulatory costs imposed when people object to coal-powered projects.

- Cons:
  - Could be ineffective without success in other promotional efforts.
  - Could be costly.

6. Mandate Support for Projects

Require state utilities to support independent development of clean coal plants in Virginia by transmitting and purchasing power from such facilities. Subsidize such activities with state funds. An example would be the TAMCO clean coal power plant in Wise County, which needs transmission capabilities from Appalachian Power Company and purchase guarantees from Virginia Power Company. This strategy would require legislative action.

- Pros:
  - Assurances of markets for power from independent clean coal plants would be a strong incentive for development.
  - Additional markets for Virginia coal.
- Cons:
  - Increase of potential failure of projects.
  - Could conflict with efforts by utilities and SCC to promote least-cost alternatives to conventional power generation.

FACTORS TO CONSIDER

The effectiveness of efforts to promote clean coal technology as a means of increasing markets for Virginia coal is likely to depend on a number of factors that may operate independently of any promotional efforts. These factors should be considered in deciding which strategies to implement and how they are implemented.

- Virginia coal reserves are expected to last only another 50-60

years. A typical clean coal plant would have a life of 40 years after a 10-year design and construction period. There should be adequate supplies of Virginia coal, but development should begin soon to take full advantage of coal supplies.

- Economic incentives for use of clean coal technology may conflict with other state efforts. The SCC is developing standards requiring utilities to use conservation instead of new generating plants to meet demands in the coming years. Incentives should be designed specifically to promote clean coal over other fuel choices to provide power generation that is complementary to conservation efforts.

- Research and development conducted outside of Virginia could affect Virginia's efforts to develop clean coal technology. Ohio has spent more than $70 million on its coal development program, which includes pilot clean coal projects. The U.S. Department of Energy is financing development of clean coal technology that could speed up the prospects for plant construction in Virginia. Technological advances made in the use of fuels other than coal could affect coal's competitiveness.

- The types of clean coal technology Virginia chooses to provide with incentives, or to develop as pilot projects, is likely to depend on the needs of various developers, such as utility generators, non-utility generators, industrial generators and institutional facilities. Technology demand from these sources in turn depends on competition from other fuel sources and levels of conservation.

BACKGROUND

In 1989, the DMME entered into an agreement with the Department of World Trade to commission a study to assess the potential for improving coal utilization efficiency in utility, industrial, institutional and export applications. Because coal is the predominant energy resource in Virginia and the primary source of economic activity in southwestern Virginia, preserving and increasing the use of coal domestically and as an export commodity was considered a primary objective for economic development.

Necessary environmental constraints led to the conclusion that clean coal technology was the most attractive method of coal use, and the potential for the export of this technology to create new export market was recognized. The assessment study was published in 1990, and indicated that there indeed is potential for development of clean coal technology as a means of increasing use of Virginia coal. The Department of Mines, Minerals and Energy further

pursued this goal by commissioning the subsequent deployment study, which provides the basis for this report.

Appendix D

Presentation to the
Coal and Energy Commission
Conservation and Load Management Issues
June 16, 1992

I Introduction

- Terms and definitions

II SCC Investigation of CLM Issues

- Need for review
- Process

III CLM Order

- Cost effective CLM supported
- Promotional allowances
- Ratemaking treatment
- Rate design
- Demand side bidding
- Formal approval
- Cost/benefit analysis

IV Societal Externalities

- Arguments for and against
- Commission's position
- General Assembly involvement

V CLM Activities in Virginia and Elsewhere

VI Summary

Demand Side Management (DSM) - The planning, implementation and monitoring of utility activities designed to influence customer usage of electricity. This can be changes in the magnitude of usage or the time pattern of usage. Includes conservation and load management.

Supply Side Options - The addition of available generating capacity by construction of a unit, purchase from another utility or purchase from an independent power producer.

Integrated Resource Planning (Least Cost Planning) - A process by which utilities and regulatory commissions assess the cost of, and choose among, various resource options. Includes both demand side and supply side options.

Energy Conservation - Steps taken to cause an actual reduction in consumption. Includes encouraging customers to invest in capital improvements (insulation, energy-efficient motors) and changing energy consumption behavior (thermostat setback).

Load Management - Reduction of electric energy demand during a utility's peak generation period. Differs from conservation in that load management shifts demand to an off-peak period, whereas conservation reduces energy usage over the entire 24-hour day. Effective load management reduces peak demand and correspondingly reduces the need for additional generating capacity.

Demand - The rate at which electric energy is delivered by a system.

Peak Demand - The greatest demand which occurred during a specified period of time. An annual peak is the hour during the year when the demand upon the system was highest.

PROJECTED DSM REDUCTIONS

		1992	1995	2000
VIRGINIA POWER	Forecast Peak	13,293	14,726	16,930
	DSM Programs	(257)	(324)	(436)
	Adjusted Forecast	13,036	14,402	16,494
APPALACHIAN POWER	Forecast Peak	6,007	6,355	6,980
	DSM Programs	(20)	(99)	(170)
	Adjusted Peak	5,987	6,256	6,810
POTOMAC EDISON	Forecast Peak	2,194	2,362	2,640
	DSM Programs	(147)	(182)	(239)
	Adjusted Peak	2,047	2,180	2,401
DELMARVA POWER	Forecast Peak	2,381	2,541	2,780
	DSM Programs	(180)	(215)	(252)
	Adjusted Peak	2,201	2,326	2,528

DEMAND-SIDE MANAGEMENT PROGRAMS

VIRGINIA POWER

RESIDENTIAL:
Energy Saver Homes
Energy Saver Systems
Energy Audits
Air Conditioner Control
Water Heater Load Control
Outdoor Security Lighting
Thermal Energy Storage

COMMERCIAL/
INDUSTRIAL:
Energy Audits
Commercial Heat Pumps
Curtailable Rate
Standby Generator Rate
Variable Pricing Rate
Electric Vehicles
Outdoor Security Lighting
Thermal Energy Storage

APPALACHIAN POWER

RESIDENTIAL:
Second Refrigerator Recycling
Compact Fluorescents
Neighborhood Blitz Insulation
Low Income Insulation
Time-of-Day Rates
Direct Control of Water Heaters and Air Conditioners
Water Heater Jackets and Low Flow Showerheads
Storage Water Heating

COMMERCIAL:
Air Flow Reduction
High-Efficiency Lighting

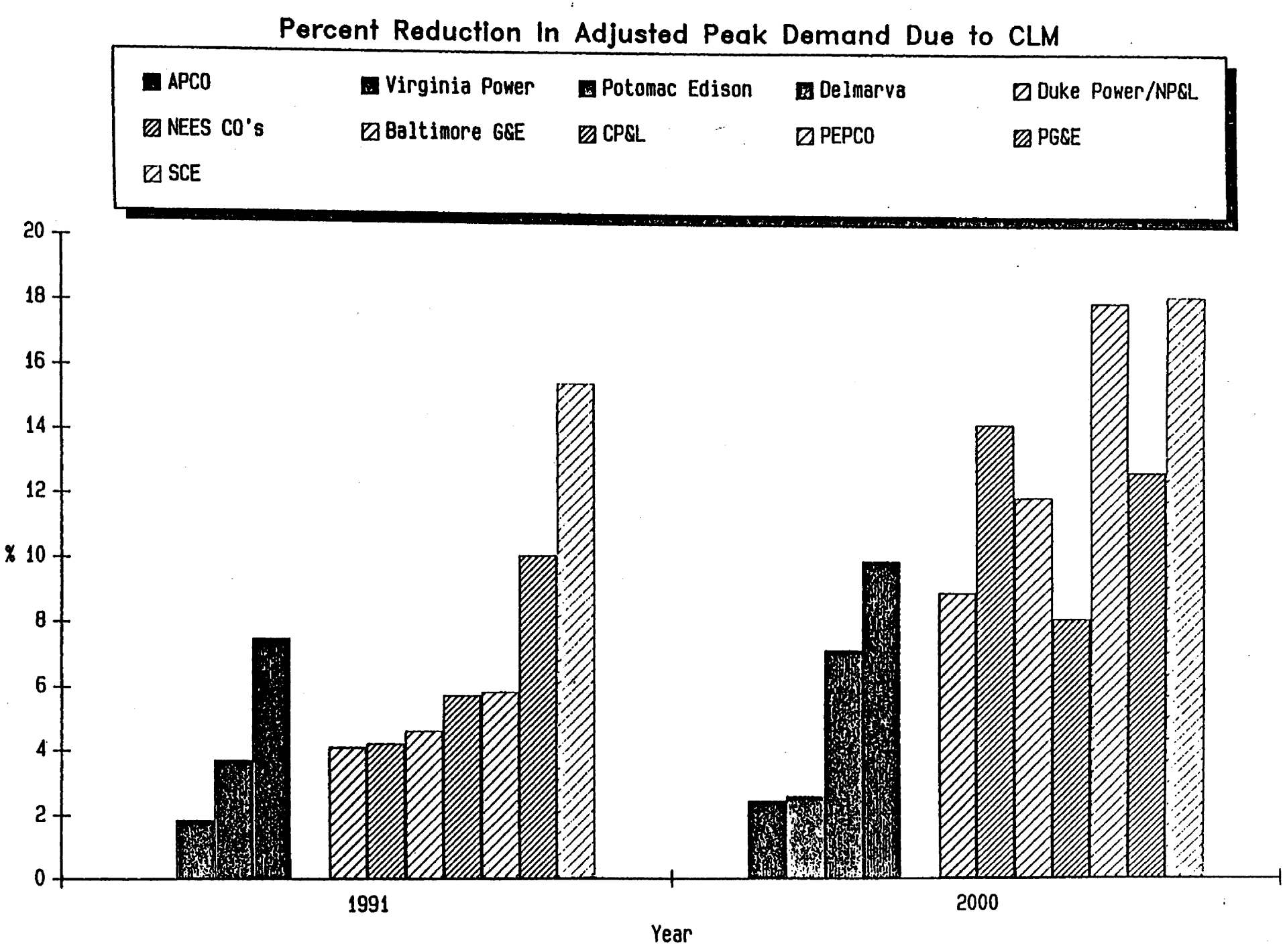
INDUSTRIAL:
High-Efficiency Lighting
High-Efficiency Motors
Adjustable Speed Drive Motors

POTOMAC EDISON

RESIDENTIAL:
Thermal Treatment: New Constr.
Thermal Treatment: Existing (Weatherization Assistance And Increased Insulation)
Water Heater Insulation
Add-On Heat Pump

COMMERCIAL:
Thermal Treatment
Energy Efficient Lighting
HVAC Modification

INDUSTRIAL:
Energy Efficient Lighting
Demand Control


Percent Reduction In Adjusted Peak Demand Due to CLM
APCO
Virginia Power
Potomac Edison
Delmarva
Duke Power/NP&L
NEES CO's
Baltimore G&E
CP&L
PEPCO
PG&E
SCE
20
18
16
14
12
% 10
8
6
4
2
0
1991
2000
Year

Appendix E

COMMONWEALTH OF VIRGINIA

STATE CORPORATION COMMISSION

AT RICHMOND, MARCH 27, 1992

COMMONWEALTH OF VIRGINIA

At the relation of the

STATE CORPORATION COMMISSION CASE NO. PUE900070

Ex Parte: In re, Investigation of Conservation and Load Management Programs

FINAL ORDER

By order of January 7, 1991, the Commission initiated an investigation to consider the subject of conservation and load management ("CLM") programs of electric and gas utilities. We noted therein that we have long encouraged utility efforts to promote CLM. However, we recognized that our policies have generally been developed on a case by case basis in reviewing tariff provisions, experimental CLM programs, ratemaking treatment for companies' CLM efforts, and advertising expenses and promotional practices (See Comm. of Va., at the relation of the S.C.C., Ex Parte: In Re, Investigation of Promotional Allowances, 1970 S.C.C. Ann. Rept. 136, Case No. 18796, Final Order, April 15, 1970). We therefore determined that it was now appropriate to address CLM in a more comprehensive manner. We requested comments on a broad spectrum of such issues, to be filed no later than February 28, 1991. Staff was directed to review those comments and prepare a report recommending specific rules or policies regarding CLM programs on or before April 26, 1991. Thereafter, the Commission invited a second round of comments on the Staff Report. Finally, we heard oral argument on October 29, 1991.

The response to our order was substantial. Almost 300 interested parties filed comments. Many of those were individual citizens who unanimously applauded CLM efforts. Companies, government agencies, nonprofit organizations, and citizen and environmental groups also responded. Utilities participating included Virginia Electric & Power Company ("Virginia Power"); Appalachian Power Company ("APCO"); The Potomac Edison Company ("Potomac Edison"); Kentucky Utilities d/b/a Old Dominion Power Company; Delmarva Power & Light Company ("Delmarva"); the Virginia, Maryland and Delaware Association of Electric Cooperatives ("the Cooperatives"); Commonwealth Gas Services, Inc. ("Commonwealth Gas"); Virginia Natural Gas, Inc. ("VNG"); United Cities Gas Company; and Washington Gas Light Company ("WGL"). Government agencies and other organizations filing comments included the Environmental Protection Agency ("EPA"); Elizabeth Haskell, Secretary of Natural Resources, Commonwealth of Virginia ("Secretary Haskell"); The Department of Mines, Minerals and Energy, Commonwealth of Virginia ("DMME"); Division of Consumer Counsel, Office of the Attorney General, Commonwealth of Virginia ("Consumer Counsel"); Transphase System, Inc.; Sycom Enterprises; Virginia Committee for Fair Utility Rates ("the Committee"); Southern Environmental Law Center ("SELC"); Conservation Council of Virginia; the Virginia Chapter of the Sierra Club; Natural Resources Defense Council ("NRDC"); Fairfax County Department of Consumer Affairs; Virginia Citizens Action ("VCA"); and the American Lung Association of Virginia.

STAFF RECOMMENDATIONS

The Staff report summarized existing CLM efforts in Virginia and the nation, provided an overview of existing Commission policy regarding CLM programs, suggested certain policy modifications, and discussed key issues which should be addressed in this proceeding.

First, the Staff recommended that the rules relating to promotional allowances be revised so as to permit such allowances for cost effective CLM programs. It distinguished such programs from those designed primarily to increase load or market share, and recommended, as a prerequisite to rate recovery of related costs, that all programs be evaluated and approved on a case by case basis to assure that a program is both cost effective and primarily directed at CLM, rather than some other objective.

A pivotal policy question identified by Staff was that of measuring the cost effectiveness of CLM programs. The criteria used to quantify costs and benefits, and thereby evaluate effectiveness, is clearly crucial to the determination of public interest. It was Staff's opinion that this issue requires more detailed work before a recommendation can be made to the Commission, and that a series of technical conferences or a task force should thus be organized. Such an effort would provide a focused and in-depth analysis of various evaluation methods.

The report also addressed the extent to which environmental and societal externalities should be considered in the evaluation of program costs and benefits, noting that this is "the most controversial issue in this proceeding." In question are those

environmental and societal costs and benefits which are not currently internalized by utilities or explicitly quantified in the planning process. Staff said that any attempt to internalize such costs or benefits could have far reaching implications. It therefore suggested that new legislation might be a more appropriate vehicle to initiate such a change.

Once utilities implement optimal CLM programs, the focus will necessarily shift to recovery of costs. The Staff discussed two aspects of this issue: direct CLM program costs, and "lost revenues." Staff observed that currently most direct costs are expensed in the year they are incurred; however, other options are available and should be considered. For instance, some costs can be capitalized in rate base when programs have long term benefits. Staff felt that specific cost treatment should be addressed in individual rate cases, given the potentially wide disparity among programs of various companies. Automatic adjustment clauses should not be used for such recovery, in Staff's view, since the Commission's general policy regarding the use of such a clause is only to "allow a utility to adjust, without a rate increase, its revenues in response to changes in the costs of a relatively volatile, major expense item . . . over which it has no control." App. of Old Dominion P. Co., 1984 S.C.C. Ann. Rept. 408, aff'd, Old Dominion P. Co. v. S.C.C., 228 Va. 528 (1984).

In regard to "lost revenue", the Staff noted that, since sales and profits are closely linked under current ratemaking principles, by promoting conservation a utility may forgo some

profits due to lower sales. The parties expressed divergent views on whether such "lost revenues" should be accounted for in setting rates. Although Staff identified a variety of approaches for addressing the issue, it made no recommendation. It did believe utilities should be allowed to propose and attempt to justify lost revenue recovery methods in rate cases.

Several parties had addressed the role demand-side bidding might play in a utility's resource plan, and the potential benefits of injecting a market place pricing discipline into utility planning. One of the difficulties associated with demand-side bidding, however, is the measurement of the results of third party programs, to assure that projected savings are achieved. A related question is whether third party CLM programs will materialize and perform as promised over the long term. Because of such uncertainties, Staff did not suggest utilities be required to use bidding. It believed, however, that the potential benefits warranted examination, and it recommended that Virginia Power be directed to use a demand-side bidding program on an experimental basis, since that company has had extensive experience with supply-side bidding for nonutility generation over the last four years.

Staff also suggested that any proposed demand-side bidding programs should be considered in formal Commission proceedings, to foster a comprehensive review of a utility's integrated resource programs, plans for implementation, and cost/benefit analysis.

In oral argument, Staff said that consideration of demand-side options must necessarily include study of supply-side options, as well, and it suggested it may be time to implement formal review of utility companies' entire integrated resource plans.

Numerous parties filed comments on the Staff Report: Consumer Counsel, Secretary Haskell, DMME, APCO, Potomac Edison, Delmarva, Virginia Power, Commonwealth Gas, WGL, VNG, the Cooperatives, the Committee, Arlington County, VCA, NRDC, SELC, and the Virginia Chapter of the Sierra Club. At the hearing, statements were received from Staff; State Senator Robert C. Scott; Secretary Haskell; EPA; NRDC; SELC; the Virginia Chapter of the Sierra Club; the Conservation Council of Virginia; Sycom; Elizabeth Ising; William B. Charlton; VCA; the Consumer Counsel; Thomas J. Charlton; the Committee; the Cooperatives; Potomac Edison; Virginia Power; Commonwealth Gas; and WGL and Shenandoah Gas Company.

Although we will not summarize all comments of all parties received in this proceeding, the Commission found such extensive input quite valuable in reaching its decision herein.

PARTICIPANTS' COMMENTS

Senator Scott urged the Commission to establish rules that would require electric utilities to meet as much need as possible through energy conservation. He recommended that environmental and social externalities should be considered. He also supported the Staff recommendations to remove prohibitions on promotional allowances, and to place demand and supply-side options on par.

In addition, he suggested the Commission consider the potentially favorable impact certain rate structure innovations, such as the use of inclining block rates (under which the price per unit increases with higher usage), might have on CLM.

Secretary Haskell strongly supported energy conservation, noting that Governor Wilder has issued a state energy plan which emphasizes this point. She urged the Commission to encourage innovation to improve environmental quality in Virginia, and to remove regulatory and market barriers to energy conservation measures. She applauded liberalized promotional allowances as a good first step. She believed the Commission should equate demand and supply-side options and should consider environmental externalities in evaluating utility resource plans. Her final recommendation was that the Commission initiate a task force to address the many details associated with integrated resource planning. She observed that the bonus allowances available under the Clean Air Act clearly provide an economic incentive for Virginia to promote energy conservation.

The Consumer Counsel agreed with the Staff's recommendation that the costs associated with CLM programs should be treated in a comparable manner to those of supply-side options. He reviewed the concerns which gave rise to the present ban on subsidies and promotional allowances and urged that any revision to those rules respect those concerns. He expressed misgivings that some programs may result in building market share rather than decreasing loads, and approved the Staff's suggestion to limit proposals to CLM initiatives. Counsel urged the Commission not

to take any action to reimburse utilities for "lost revenues." Whatever revenue impacts occur, he argued, will be short term, because the test year revenue level under the normal ratemaking process will already reflect lost revenues.

The EPA encouraged the Commission to evaluate demand and supply-side options on an equal basis. It favored incentives to save, rather than sell, electricity.

The NRDC urged the Commission to authorize the decoupling of utility net profits from sales volume, as has been done in several states. It also encouraged positive incentives for energy efficiency performance.

The SELC, the Virginia Chapter of the Sierra Club and the Conservation Council of Virginia urged Virginia to declare a clear preference for utilizing cost effective conservation and efficiency measures as resources to meet the state's growing need for energy. They asserted that the cost effectiveness of CLM programs should be determined by comparing costs and benefits using the societal impact or "all rate payers" test. They urged the Commission to move forward to provide firm and aggressive guidelines promoting the development of demand-side programs that capture all cost aspects of conservation and efficient resources.

The Committee urged the Commission to proceed carefully, and to encourage innovation and promote cost effective programs, while bearing in mind the potential impact of significant changes in the ways utilities operate and the ways rates are set. It agreed that when CLM programs meet the utilities' needs and are more cost effective, they should be implemented instead of

supply-side options, thereby resulting in the best mix of resources to meet the needs of customers at the lowest cost. The Committee opposed the concept of quantifying selected externalities. It argued that the suggestion to incorporate some externalities but ignore others could distort the balancing process, lead to economic inefficiency and result in higher utility rates. Further, it argued that the valuation of externalities is a nearly impossible task. It also agreed with the Consumer Counsel that the lost revenue issue need not be addressed, given the current ratemaking process.

The Cooperatives agreed with the Staff's proposed revision of the promotional allowance rules. They were concerned, however, with the related approval process and the potential for it to develop into protracted litigation, particularly related to alternative energy suppliers. They also endorsed the Commission Staff's position that quantification of externalities is more appropriately addressed by legislators than by the Commission.

Virginia Power believed that the Staff's proposed revisions to the rules for promotional allowances go a long way toward allowing the use of cost effective promotions as part of CLM programs. However, it urged the Commission to make clear that promotions which reduce unit cost of power, such as allowances for heat pumps, should also be allowed. Virginia Power stated that it was presently developing an internal methodology which would allow the company to give stronger consideration to many proposed CLM programs.

Commonwealth Gas Services urged further modification of the rules for promotional allowances to insure that no unfair competitive advantages are bestowed upon any utility in the name of CLM programs. It urged the Commission to consider source to site analyses, which it believed were necessary to validate claimed energy efficiencies.

WGL and Shenandoah Gas Company urged the adoption of a standard CLM cost benefit evaluation framework to be used by all utilities. They also proposed adoption of the "all rate payers test", which would consider the impact of a proposed program on all regulated energy suppliers, gas or electric. Finally, they urged funding limits for cooperative advertising by utilities.

DISCUSSION

We believe cost effective CLM programs are essential components of the balanced resource portfolio that utilities must achieve to provide energy to Virginia consumers at fair and reasonable rates. We appreciate the valuable input provided by the participants and our Staff in this investigation.

As we have considered the many issues here, it has become clear that a more detailed investigation will be needed regarding the appropriate tests to employ in measuring the success of programs. We must also continue to refine the distinctions between CLM programs on the one hand and on- and off-peak load building programs on the other. Specific ratemaking treatment of program costs will need to be evaluated carefully in the context of each utility's rate cases. This Commission, utilities, consumers and third-party CLM program providers must all continue

to increase the public awareness of energy efficiency and conservation so that we may aggressively pursue implementation of sound cost effective programs.

While we are encouraged about the role conservation can play in our future, we must move cautiously in an attempt to avoid promoting uneconomic programs, or those that are primarily designed to promote growth of load or market share without serving the overall public interest. Conservation at any cost is not appropriate, and we must closely evaluate utility companies' demand-side programs to assure that each company is carefully following a cost effective strategy. Our goal then can be succinctly stated as establishing the framework which will facilitate optimal CLM programs. The Commission, in fact, has a statutory mandate to investigate the "acts, practices, rates or charges" of utilities to determine whether they are calculated to "promote the maximum effective conservation and use of energy and capital resources used by public utilities in rendering utility service" (Va. Code § 56-235.1).

The first critical question which we must address is which test or tests should be applied to judge whether a program is cost effective. Opinions on this issue varied widely among the participants in this proceeding.

We must adopt uniform measures against which to evaluate programs designed to conserve energy or better balance a utility's load. It is only with that information that we can determine if a program is in the public interest. We agree with our Staff, however, that the advantages and disadvantages of

various assessment methods are not adequately developed in this record.

Staff suggested a task force or a series of technical conferences as suitable approaches to continue this investigation. Either method is acceptable. Staff should forthwith establish the necessary meeting schedules to collect the requisite data, followed by an interim report on or before July 31, 1992, which will detail the procedures it will follow in its investigation, the goals of the process, any progress to date, and the date it expects to complete a final report. This final report should describe all alternative cost effective measures, the advantages and disadvantages of each, and Staff's recommendation on the appropriate tests to apply.

This effort should not involve the question of how to quantify environmental externalities, however. This Commission clearly considers environmental factors in rendering our decisions, but these factors are taken into account from a qualitative, not quantitative, standpoint. See Va. Code § 56-46.1. Under that statute, such factors are analyzed in rendering our decisions on whether to approve the construction of major electric transmission facilities. Similarly, we consider all aspects of the public convenience and necessity in deciding whether to approve certificates for the construction of other utility facilities. Moreover, to the extent those conditions impose direct costs on the public utility, they are reflected in rates, as appropriate.

However, we believe that we lack the statutory authority to go beyond this direct effect on the ratemaking process. Virginia Code § 56-235.1 commands us to determine which acts, practices, rates or charges are reasonably calculated to promote conservation and the maximum effective use of energy, but specifies "that nothing in this section shall be construed to authorize the adoption of any rate or charge which is clearly not cost-based or which is in the nature of a penalty for otherwise permissible use of utility services." Also, Virginia Code § 56-235.2 specifically states that the utility must demonstrate that its "rates, tolls, charges or schedules in the aggregate provide revenues not in excess of the aggregate actual costs incurred by the public utility in serving customers within the jurisdiction of the Commission," and prohibits speculative adjustments to such costs. We believe that it would be speculative, and thus contrary to our legal authority, to include adjustments in rates for external environmental factors. Moreover, as noted by the Committee, incorporating selected externalities, but ignoring the impact of others, could distort the balancing process and lead to economic inefficiency, resulting in higher utility rates for all customers. We therefore agree with our Staff and a number of the parties, who suggested that incorporation of environmental externalities should be dealt with from a broader perspective than utility ratemaking. Congress and the General Assembly are the proper bodies to provide this perspective. When and if we are directed by legislation to incorporate quantified

environmental externalities into the regulatory process, we shall do so, of course.

The Staff did propose specific revisions to our current rules relating to promotional allowances, established by Final Order in Case No. 18796, dated April 15, 1970. Therein, we prohibited electric and gas utilities from giving any payment, subsidy or allowance to influence the installation, sale, purchase or use of any appliance or equipment. We were concerned with public service companies competing with independent contractors in the appliance market and further, with avoiding having such payments subsidized by all customers, specifically those not receiving the benefits of the promotional program. The situation has changed sufficiently to require us to revisit those rules and to consider the need to establish programs which will encourage sound CLM. The participants in this proceeding uniformly supported revisions to our 1970 rules.

We believe that promotional allowances for cost effective CLM programs are appropriate. Rate recovery for such promotions should be allowed only for cost effective CLM programs, though, and not for those designed primarily to increase load or market share, unless a company proves that the program is cost effective and serves the overall public interest. We will not expressly prohibit the payment of such allowances by utilities, however, but rather, we will only address the propriety of cost recovery through rates. We also caution that the rules do not <u>guarantee</u> rate recovery for cost effective CLM programs. The

reasonableness of the level of costs incurred will be evaluated as a part of each company's rate case.

Advertising, and particularly cooperative advertising, was also addressed by Staff and the participants. The Virginia Code prohibits rate recovery for electric utilities for advertising unless it is required by "law or rule or regulation, or for advertisements which solely promote the public interest, conservation or more efficient use of energy . . " Virginia Code § 56-235.2. Accordingly, the Commission has allowed reasonable levels of advertising expenses associated with CLM. Such practice will continue, but we will more closely scrutinize those costs in the context of individual rate cases, to carefully distinguish between advertising for cost effective CLM programs and those primarily designed to promote load growth which do not otherwise serve the overall public interest. State law does not currently address advertising by gas companies, but we have historically applied the same standards there.

WGL urged the Commission to impose funding limits on cooperative advertising. We agree that utilities should not be allowed to recover excessive levels of advertising costs. However, the proper level will vary widely from company to company depending on many individual factors. It is appropriate, then, to review the proper funding level for each company in individual rate cases.

Questions were also raised related to the ratemaking treatment for CLM program costs. Recovery of direct CLM program costs is currently addressed in each company's rate case. Most

such costs are expensed, but some costs with long term benefits may be more appropriately capitalized and included in ratebase. We have stressed the importance of similar ratemaking treatment in the context of buy and build options.

Use of an automatic adjustment clause, however, is not appropriate. These clauses are permitted only in extraordinary circumstances "and with great caution, after carefully weighing the expected benefits against their disadvantages, in light of the public interest." Old Dominion P. Co. v. S.C.C., 228 Va. 528 (1984). Automatic adjustment clauses have been used to allow utilities to automatically adjust revenues to account for major, volatile costs beyond the company's control. At this time, the costs associated with CLM programs do not satisfy these criteria.

A number of participants also discussed alternative approaches to addressing "lost revenues", and this issue generated some controversy. If a conservation program is successful, utility sales should decrease and the company may forgo some profits until it can adjust its rates to reflect the decreased revenue. Staff identified some of the options other jurisdictions have implemented to deal with this subject. Staff made no specific recommendation, but suggested that the Commission consider proposals in the context of rate cases. Most utilities, not surprisingly, argued that an adjustment to compensate utilities for "lost revenues" is critical. Opponents countered that some regulatory lag exists with regard to all costs of service, and that the effect of CLM programs will be addressed in the normal course of ratemaking. We tend to agree.

We should observe in this regard that we currently have a pending proceeding before us to revisit our utility rate case rules. In that case our Staff has proposed rules which provide a more forward looking test period. If such a concept is adopted, it may alleviate the problems associated with decreasing revenues resulting from aggressive conservation programs. We will, however, continue to monitor this phenomenon.

Rate design is also a powerful tool which can be used to achieve optimal CLM objectives. As Staff indicated, it is important to establish appropriate price signals to promote energy efficiency.

A large number of rate design objectives must be balanced in setting rates, and the Virginia Supreme Court has sustained the Commission's determination that "non-cost factors may be considered by the Commission in setting rates for various classes of services . . . to accomplish legitimate regulatory objectives." Secretary of Defense v. C & P Telephone, 217 Va. 149, 152 (1976).

Clearly then, we have the discretion to consider the impact of rate design on CLM. Rates can reflect costs or drive costs. Examples of the latter would include mandatory time of use rates and summer/winter differentials. In designing rates, utilities should consider costs and cost allocation in terms of the market signals sent by the rates. We thus encourage utilities to pursue innovative rate design and continue to improve costing methodologies.

Staff recommended that Virginia Power be required to implement a demand-side bidding program. There are clearly potential benefits which may flow from demand-side bidding programs similar to those we have seen from the supply-side resource selection process. Competition appears to have lowered costs, encouraged technical innovation and provided an independent check on utility cost estimates. There are also a number of potential difficulties unique to demand-side bidding, as noted in the record, however. Therefore, an experimental program such as that suggested by Staff, and which Virginia Power has endorsed, will provide an opportunity to garner more data and information on the subject. Utilities are already free to implement demand-side bidding if they believe such a program would be advantageous, of course.

A number of parties addressed the proper role of the Commission and its Staff in reviewing and providing oversight of a utility's CLM programs. Staff recommended formal Commission proceedings to promote a comprehensive review of each utility's demand-side strategy. Later, Staff expanded its recommendation to suggest that we should initiate formal review of both demand and supply-side resource plans. Currently, utilities file their long range resource plans with the Division of Economics and Finance and such plans are available there for public review. Although public hearings are not conducted, nor Commission approval granted or denied, our Staff reviews those long-range resource plans extensively. We believe the existing process is working well. We, therefore, will not mandate a comprehensive

formal review of utilities' long-range resource plans. However, formal review and approval of CLM programs is appropriate at this juncture. Such proceedings may focus on each new program prior to its implementation, or involve periodic review of a utility's entire demand-side package. Each utility, after consulting with the Staff, should determine which process is more appropriate in its individual circumstance.

Finally, the more we have focused on the issues surrounding conservation and load management, the more it has become apparent that an information gap exists relating to this subject. Public interest in energy efficiency and conservation has been increasing, as is exhibited by the comments we received here. We therefore direct our Staff to survey the information currently available and identify what additional methods would aid the dissemination of appropriate data regarding CLM options.

Now, the Commission, having considered the record developed in this case, is of the opinion and finds that the rules for promotional allowances should be revised as set forth in Attachment A; Staff, utilities, consumers and third party CLM providers should aggressively pursue cost effective CLM programs; Staff should initiate a working group to identify the alternative approaches to estimating demand-side program cost effectiveness and submit an interim report to the Commission on or before July 31, 1992; Virginia Power should initiate a demand-side bidding program; and further, Staff should review the information available to consumers about conservation and identify possible methods of distribution in order to reach the largest number of

consumers interested in energy efficiency and conservation. Accordingly,

IT IS ORDERED:

(1) That our rules on promotional allowances shall be, and hereby are, superseded by the rules set forth in Attachment A;

(2) That Staff shall organize a working group to develop recommendations on an appropriate cost/benefit method or methods to estimate the effectiveness of CLM programs and submit an interim report to the Commission on or before July 31, 1992;

(3) That Virginia Power shall develop an experimental demand-side bidding program and report the projected schedule for development and implementation on or before August 1, 1992;

(4) That utilities shall file formal applications for review of CLM programs as discussed herein; and

(5) That this case shall remain open for the filing of the required reports.

Commissioner Moore took no part in the decision in this case.

AN ATTESTED COPY hereof shall be sent by the Clerk of the Commission to: Kendrick R. Riggs, Esquire, Virginia Electric and Power Company, P.O. Box 26666, Richmond, Virginia 23261; Donald A. Fickennscher, Virginia Natural Gas, 5010 East Virginia Beach Boulevard, Norfolk, Virginia 23502-3488; Donald R. Hayes, Esquire, Northern Virginia Natural Gas, 6801 Industrial Road, Springfield, Virginia 22151; Mark G. Thessin, United Cities Gas Company, 5300 Maryland Way, Brentwood, Tennessee 37027; Stephen H. Watts, II, Esquire, McGuire, Woods, Battle & Boothe,

1 James Center, Richmond, Virginia 23219; Kenworth E. Lion, Jr., Esquire, Virginia-Maryland-Delaware Association, 4201 Dominion Boulevard #200, Glen Allen, Virginia 23060; Edward L. Petrini, Office of the Attorney General, 101 North 8th Street, 6th Floor, Richmond, Virginia 23219; Allen Glover, Esquire, Appalachian Power Company, P.O. Box 720, Roanoke, Virginia 24004-0720; Robert M. Hewett, Vice President, Old Dominion Power Company, One Quality Street, Lexington, Kentucky 40507; Robert B. Murdoch, Esquire, Potomac Edison Company, Downsville Pike, Hagerstown, Maryland 21740; A. Hayes Butler, Esquire, Delmarva Power and Light Company, P.O. Box 231, Wilmington, Delaware 19899; Richard A. Parrish, 201 West Main Street #14, Charlottesville, Virginia 22901; Mark J. Lafratta, Esquire, Mays & Valentine, P.O. Box 1122, Richmond, Virginia 23208-1122; Elizabeth H. Haskell, Commonwealth of Virginia, Office of the Governor, Richmond, Virginia 23219; James C. Dimitri, Esquire, Virginia Commission for Fair Utility Act, 1200 Mutual Building, Richmond, Virginia 23219; Douglas A. Ames, Transphase Systems, Inc., 800 Midatlantic Drive #2015, Mt. Laurel, New Jersey 08054; S. Lynne Sutcliffe, Sycom Enterprise, 7475 Wisconsin Avenue, 6th Floor, Bethesda, Maryland 20814; Lori Marsh, VPI and State University, Blacksburg, Virginia 24061-0512; Piedmont Environmental Council, 28-C Main Street, P.O. Box 460, Warrenton, Virginia 22186; Sierra Club-Virginia Chapter, P.O. Box 14648, Richmond, Virginia 23221-0648; William B. Grant, 803 Marlbank Drive, Yorktown, Virginia 23692-4353; Patricia J. Devlin, 3959 Pender Drive, Fairfax, Virginia 22030; Neal D. Emerald, 4033 Poplar Street, Fairfax, Virginia

22030; Stephen M. Ayres, M.D., P.O. Box 7065, Richmond, Virginia 23221-0065; Debose Egleston, Jr., P.O. Box 838, Waynesboro, Virginia 22980; Virginia Citizen Action, 1531 West Main Street, 2nd Floor, Richmond, Virginia 23220; Eileen B. Claussen, U.S. Environmental Protection Agency, Washington, D.C. 20460; and Daniel Lashof, 1350 New York Avenue N.W., Washington, D.C. 20005.

RULES GOVERNING
UTILITY PROMOTIONAL ALLOWANCES

VIRGINIA STATE CORPORATION COMMISSION

I. Purpose

The purpose of these rules is to establish the conditions under which electric and gas utilities operating in Virginia may propose to recover reasonable costs associated with promotional allowances to customers. Any utility proposing a promotional allowance program shall demonstrate that such program is reasonably calculated to promote the maximum effective conservation and use of energy and capital resources in providing energy services. Promotional allowance programs shall be cost justified using appropriate cost/benefit methodologies.

II. Promotional Allowances Prohibited for Ratemaking

A. Except as provided for under Section III, no electric or gas utility shall give or offer to give any payment, subsidy or allowance, directly or indirectly, or through a third party, to influence the installation, sale, purchase, or use of any appliance or equipment.

B. No electric utility shall give or offer to give any monetary or other allowance or credits based on anticipated revenues for the installation of underground service. Schedules of charges for underground service based on revenue-cost ratios or cost differentials shall be filed with the Commission.

III. Permitted Activities

A. Unless otherwise specifically prohibited in writing by the Commission, the following activities are not prohibited by these rules:

1) Advertising by a utility in its own name, consistent with Virginia Code Section 56-235.2.

2) Joint advertising with others, if the utility is prominently identified as a sponsor of the advertisement, consistent with Virginia Code Section 56-235.2.

3) Financing the purchase of appliances by utilities so long as the interest rate or carrying charge to the purchaser is

not less than the interest rate paid by the utility for short term debt.

4) Merchandising of appliances or equipment by utilities.

5) Inspection and adjustment of appliances by utilities. Repairs and other maintenance to appliances and equipment if charges are at cost, or above.

6) Donation or lending of appliances by utilities to schools for instructional purposes.

7) Technical assistance offered to customers by employees of utilities.

8) Incentives to full time employees of utilities.

B. Promotional allowance programs designed to achieve energy conservation, load reduction, or improved energy efficiency are permitted under these rules, subject to the prior approval of the Commission. Any promotional allowance program proposed under this Section shall comply with the standards contained in Section IV.

V. Promotional Allowance Program Standards

A. Any utility offering a promotional allowance program shall adhere to the following standards:

1) The promotional allowance program shall not vary the rates, charges and schedules of the tariff under which service is rendered to the customer.

2) A utility may not, directly or indirectly, offer or grant to a customer any form of promotional allowance except as is uniformly and contemporaneously extended to all customers in the same reasonably defined class.

3) Any utility promotional allowance program should be designed in such a manner so as to minimize the potential for placing private businesses at an undue competitive disadvantage.

4) To the extent applicable, any appliances or equipment promoted by a utility under

a promotional allowance program shall have energy efficiency ratings which meet or exceed current federal standards as contained in the National Appliance Energy Conservation Act (Public Law 100-12), or any subsequent amendments thereof. The Commission may, at its discretion, impose other standards for appliances or equipment promoted under a utility promotional allowance program.

5) Any utility proposing a promotional allowance program that would have a significant effect on the sales levels of an alternative energy supplier shall consider the effect of the program on that supplier, and demonstrate that the program serves the overall public interest.

V. Waivers

A. A utility may file for exemptions from any or all of these rules. In making its decision regarding exemptions, the Commission will consider the size of the utility's operations in Virginia, the requirements of other regulatory bodies having jurisdiction over the utility, and the specific Virginia statutory authority under which the utility operates.

VI. Commission Authority

A. Notwithstanding any of the provisions of these rules, the Commission may authorize an otherwise prohibited promotional allowance program if the Commission finds that it is in the public interest.

B. Nothing in the provisions of these rules shall preclude the Commission from investigating, formally or informally, a utility promotional activity and, if it determines the activity to be adverse to the public interest, modifying or eliminating the activity.

COMMONWEALTH OF VIRGINIA

930230106

STATE CORPORATION COMMISSION

AT RICHMOND, FEBRUARY 22, 1993

COMMONWEALTH OF VIRGINIA

At the relation of the

STATE CORPORATION COMMISSION

CASE NO. PUE900070

Ex Parte: In re, Investigation of conservation and load management programs

ORDER INVITING COMMENT

On March 27, 1992 the Commission issued a Final Order pursuant to its investigation of conservation and load management ("CLM") programs. Therein, among other things, the Commission found that the test or tests which should be applied to judge whether a conservation or load management program is cost effective was a fundamental question which needed to be addressed. The Commission observed that it must adopt uniform measures against which to evaluate programs designed to conserve energy or better balance a utility's load. However, the Commission found that the advantages and disadvantages of various assessment methods was not adequately developed in the record amassed at that point. Accordingly, the Commission directed the Staff to organize a working group to develop recommendations on an appropriate cost/benefit method or methods to estimate the effectiveness of CLM programs and further directed that the Staff should submit an interim report to the Commission on or before July 31, 1992. That interim report was submitted and identified the task force which had been organized by the Staff to

facilitate the required analysis. Staff also identified the approach it intended to take to conduct that study.

The Staff submitted its Report on the Cost/Benefit Analysis of Demand Side Management Programs on February 9, 1993. Therein the Staff stated that a multi-perspective approach to determining the cost and benefits of demand side management programs is needed in order to evaluate the full impact of programs on a utility and its customers. Staff stated that estimates of costs and benefits from many different perspectives will be needed by the Commission to make its determination of whether a particular program or set of programs is in the public interest. Staff proposed that the quantitative cost/benefit analysis be made from at least four perspectives and should accompany all applications for approval of programs. Staff stated that programs should thus be evaluated from the perspective of the program participant, the non-participant, the utility and all ratepayers.

Staff also suggested minimum guidelines for data development and modeling assumptions to be used in preparing cost/benefit tests. Staff addressed the circumstances in which the effects on alternative energy suppliers should be considered. Staff stressed the importance of verification of program impacts and encouraged the development of state-of-the-art techniques to verify the savings and load impacts associated with programs. Staff also proposed that utility experiments or pilot programs, other than those involving promotional allowances or having associated rates, should be allowed to proceed without formal Commission approval.

NOW THE COMMISSION having considered the Staff report and the attached comments of the task force members is of the opinion and finds that all parties to this proceeding should be invited to comment on the Staff report and that an oral argument should be scheduled. Accordingly,

IT IS ORDERED:

(1) That any person may file written comments on the Staff report of cost/benefit analysis of demand side management programs provided an original and fifteen (15) copies of the comments are filed no later than March 26, 1993;

(2) That any participant which files written comments may also participate in oral argument provided its intent to participate therein is expressed in its written comments; and

(3) That an oral argument on the recommendations contained in that report shall and hereby is scheduled for April 15, 1993 at 10:00 a.m. in the Commission's Courtroom on the 2nd Floor of the Tyler Building, 1300 East Main Street, Richmond, Virginia.

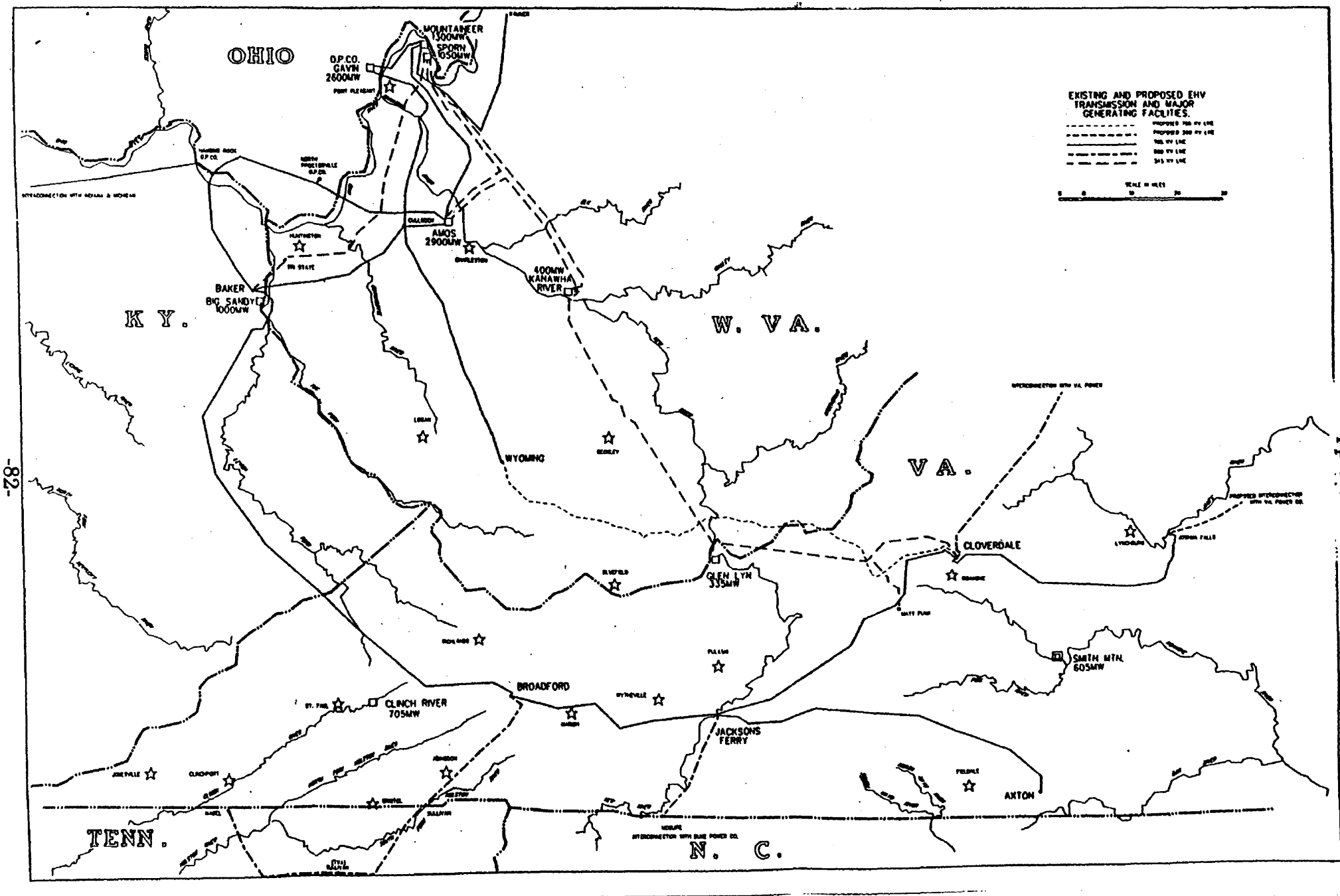
Commissioner Moore is not participating in this proceeding.

AN ATTESTED COPY of this order shall be mailed by the Clerk of the Commission to Edward L. Petrini, Office of the Attorney General, 101 North 8th Street, Richmond, Virginia 23219; Allen Glover, Esquire, Appalachian Power Company, P.O. Box 14125, Roanoke, Virginia 24038-4125; Robert M. Hewett, Vice President, Old Dominion Power Company, One Quality Street, Lexington, Kentucky 40507; Robert B. Murdock, Esquire, Potomac Edison Company, Downsville Pike, Hagerstown, Maryland 21740; A. Hays Butler, Esquire, Delmarva Power and Light Company, P.O. Box 231,

Wilmington, Delaware 19899; Kendrick R. Riggs, Esquire, Virginia Electric and Power Company, P.O. Box 26666, Richmond, Virginia 23261; Donald A. Fickennscher, Virginia Natural Gas, 5010 E. Virginia Beach Boulevard, Norfolk, Virginia 23502-3488; Donald R. Hayes, Esquire, Northern Virginia Natural Gas, 6801 Industrial Road, Springfield, Virginia 22151; Mark G. Thessin, United Cities Gas Company, 5300 Maryland Way, Brentwood, Tennessee 37027; Stephen H. Watts, II, Esquire, McGuire, Woods, Battle & Boothe, One James Center, Richmond, Virginia 23219; Kenworth E. Lion, Jr., Esquire, Virginia-Maryland-Delaware Association, 4201 Dominion Boulevard, Suite 200, Glen Allen, Virginia 23060; Richard A. Parrish, Southern Environmental Law Center, 201 West Main Street, Suite 14, Charlottesville, Virginia 22901; Mark J. Lafratta, Esquire, Mays & Valentine, P.O. Box 1122, Richmond, Virginia 23208-1122; Elizabeth H. Haskell, Commonwealth of Virginia, Office of the Governor, Richmond, Virginia 23219; James C. Dimitri, Esquire, Virginia Committee for Fair Utility Act, 1200 Mutual Building, Richmond, Virginia 23219; Douglas A. Ames, Transphase Systems, Inc., 800 MidAtlantic Drive, Suite 2015, Mount Laurel, New Jersey 08054; S. Lynn Sutcliffe, Sycom Enterprises, 7475 Wisconsin Avenue, 6th Floor, Bethesda, Maryland 20814; Lori Marsh, Virginia Cooperative Extension Services, VPI & State University, Blacksburg, Virginia 24061-0512; Piedmont Environmental Council, 28-C Main Street, P.O. Box 460, Warrenton, Virginia 22186; Sierra Club-Virginia Chapter, P.O. Box 14648, Richmond, Virginia 23221-0648; William B. Grant, Energy Conservation Commission, 803 Marlbank Drive, Yorktown,

Virginia 23692-4353; Patricia J. Devlin, Department of Consumer Affairs, 3959 Pender Drive, Fairfax, Virginia 22030; Neal D. Emerald, Virginia Wildlife Federation, 4033 Poplar Street, Fairfax, Virginia 22030; Stephen M. Ayres, American Lung Association of Virginia, P.O. Box 7065, Richmond, Virginia 23221-0065; Dubose Egleston, Jr., Council of Trout Unlimited, P.O. Box 838, Waynesboro, Virginia 22980; Virginia Citizen Action, 1531 West Main Street, 2nd Floor, Richmond, Virginia 23220; Eileen B. Claussen, Atmospheric and Indoor Air Program, U. S. Environmental Protection Agency, Washington, D.C. 20460; Daniel Lashof, Natural Resources Defense Council, 1350 New York Avenue, N.W., Washington, D.C. 20005; and to the Commission's Divisions of Energy Regulation, Accounting and Finance and Economics and Finance.

A True Copy
Teste: William J. Bridge
Clerk of the
State Corporation Commission


OHIO
MOUNTAINEER
1300MW
SPORN
1050MW
O.P.CO.
GAVIN
2600MW
AMOS
2900MW
400MW
KANAWHA
RIVER
BAKER
BIG SANDY
1000MW
K Y.
W. VA.
WYOMING
VA.
CLOVERDALE
GLEN LYN
335MW
SMITH MTN.
605MW
BROADFORD
CLINCH RIVER
705MW
JACKSONS
FERRY
AXTON
TENN.
N. C.
EXISTING AND PROPOSED EHV
TRANSMISSION AND MAJOR
GENERATING FACILITIES.

Appendix G

"AN OVERVIEW OF ELECTRICAL ENERGY IN VIRGINIA"
Virginia Coal and Energy Commission, Coal Subcommittee
Richlands, Virginia. September 16, 1992

Presentation by Carl Zipper, Virginia Center for Coal and Energy Research

I. Electric Power Sources & Uses (GWHrs)

Appalachian Power:

	1989	1990	1991
Generation			
Steam	26,904	25,185	20,577
Hydro (Net)	490	559	485
Nuclear	0	0	0
	27,394	25,745	21,062
Internal Load			
Customer Sales	22,561	22,497	23,061
Req't Sales for Resale	4,121	4,086	4,307
Losses	2,574	2,470	2,532
	29,256	29,053	29,900
Internal Load			
Minus Generation	1,862	3,308	8,838
Transactions			
Utility Purchases	2,063	2,959	14,306[1]
Non-Utility Purchases	0	0	0[2]
Net Interchange	6,810	8,223	0
Net Transmission	0	0	0
NonReq Sales for Resale	(7,010)	(7,873)	(5,468)
Net Additions	1,862	3,308	8,838
Virginia Generation			
Clinch River	4,085	4,404	4,347
Glen Lyn	1,469	1,322	844
Hydro (Net)	490	559	485
	6,044	6,284	5,676
Va Internal Load	15,403	15,267	15,727[3]
Va. [Int. Load - Gen.]	9,359	8,983	10,051

Virginia Power:

	1989	1990	1991
Generation			
Steam	32,076	24,547	27,362
Hydro (Net)	499	437	237
Nuclear	13,081	22,288	22,342
Other	163	809	1,149
	45,819	48,081	51,090
Internal Load			
Customer Sales	52,979	52,123	54,641
Req't Sales for Resale	2,928[4]	2,651	3,163
Losses & Company Use	3,699	3,537	3,665
	59,606	58,311	61,469
Int. Load - Generation	13,787	10,230	10,379
Transactions:			
AEP & Hooisier Purchases	5,492	4,851	5,268
Other Utility Purchases	1,725	734	498
Non-Utility Purchases	2,983	4,248	5,249
Net Interchange	3,566	378	43
Net Transmission	21	20	17
NonReq Sales for Resale	0[4]	0	(697)
Net Additions	13,787	10,230	10,378

1. Power transfers between APCo and other members of the AEP system accounted as interchanges in 1989 and 1990 utility purchases in 1991. Breakdown of purchases to utility and non-utility sources not available for 1991.
2. Very small, if not zero.
3. Estimated, 1991 only
4. Breakdown of non-requirement vs. requirement sales for resale not available for 1989. Assumes non-requirement sales = 0, as in 1990.

Sources: FERC Form 1, various years. U.S. EIA, "Selected Financial Statistics for Investor-owned Utilities." U.S. EIA, "Electric Power Monthly." Apco Wyoming-Cloverdale 765kv transmission application to Virginia SCC.

II. Peaks vs. Installed Capacity

Virginia Power:
1990 Peak: 12,113 MW, on July 10
1991 Peak: 12,723 MW, on July 23

Virginia and North Carolina Power
1992 Forecast Peak: 12,951 MW (summer)
1992 Installed Capability (company owned): 12,246 MW

APCo:
1990 Peak: 6,671 MW on January 12
1991 Peak: 6,341 MW on December 19
1991 Installed Capacity: 5,580 MW

APCo Virginia Service Territory
1990/91 Winter Peak: 2934 MW
1991/92 Winter Peak: 3102 MW
1991 Installed Capacity: 1,766 MW
(1,040 MW steam, 726 MW hydro)

Notes: In-place utility and non-utility purchase contracts increase VP summer capability to 15,884 MW. Other utilities on A.E.P. system provide Apco with reserve capacity.

Source: Forecast documents prepared by Appalachian Power Co. and Virginia Power.

III. Power Sales Revenues and Costs ($/MWhr)

1990 System Averages:

	VP	APCo
Retail Sales	$63.31	$46.21
Sales for Resale	48.88	29.61
Steam Power Production Expenses	21.45	18.18
Nuclear Power Production Expenses	14.23	-

Source: Calculated from U.S. EIA, "Financial Statistics of Selected Investor-Owned Electric Utilities, 1990," Table 40.

VP Purchases, Average Rates:

	1989	1990	1991
Source:			
Hoosier/AEP	43.30	43.99	41.50
Other Utility		39.61	30.08
Non-Utility		46.42	59.48

Note: High cost of non-utility purchases in 1990 due to capacity costs paid to fully-dispatchable units coming on-line.
Source: Calculated from FERC Form 1, Account 555.

Appalachian Power: Average Sales Revenues, 1990

Wholesale Sales, Requirement	
Kingsport Power	30.03
Other	33.50
Wholesale Sales, Non-Requirement	
Long-Term Unit	40.60
Short-Term Firm	26.50
Other Sales	26.60

Source: Calculated from data in FERC Form 1.

Apco Power Production Costs, 1990

		$/MWhr
Clinch River	705 MW	14.73
Mountaineer	1300	17.73
Amos	2033	19.72
Sporn	308	19.16
Glen Lyn	335	21.98
Kanawha River	400	23.79
APCo Total		18.39

Note: Sporn (1050 MW total capacity) and Amos (2900 MW) figures apply to APCo-owned portions only.

Source: FERC Form 1, "Steam Electric Generating Plant Statistics." (Apco total calculated)

AEP Pool: Member Utility Primary Energy Rates (7/91)

Delivered Energy:	
Indiana and Michigan Power Co. (I&M)	10.42
Kentucky Power Co. (KP)	13.46
Columbus Southern Power Co. (CSP)	17.39
Appalachian Power Company (Apco)	17.64
Ohio Power Company (OP)	17.91
Received Energy:	
Appalachian Power Co.	13.42

Source: AEP System Pool, "Interchange Power Statements and Related Data." July, 1991.

IV. Virginia Out-of-State Power Purchase Costs
(Rough Estimate - Million $)

	1989	1990	1991
Virginia Power:[1]			
Purchase from Hoosier/AEP	$237.8	$216.4	$218.7
Appalachian Power:			
Method 1: Calculate cost of Va [Int.Load - Gen.] at energy cost only ($13.74 in 1991)[2]	120	117.6	138.1
Total Method 1	360	334.0	356.8
Method 2:			
Apco purchases reserve capacity and energy from A.E.P.			
Capacity & energy to serve internal customers[3]			
-- Capacity	44.7	121.3	93.4
-- Energy		104.0	142.5
-- Total	136.0	224.3	235.9
Transmission[4]	3.3	14.2	7.0
Virginia purchases from APCo's WV generation[5] (@ $15/MWhr)	112.4	85.1	18.1
Total Method 2	489.5	540.0	479.7
Method 3: Calculate cost of Apco Va [Int.Load - Gen.] @ $ 30.00/MWhr[6]	280.7	269.5	301.5
Total Method 3	518.5	485.9	520.2
Auxiliary Statistics			
Apco "Generation Deficits"			
Va. [Int.Ld. - Gen.]	9,359	8,983	10,051
Apco [Int.Ld. - Gen.]	1,862	3,308	8,838
Difference	7,497	5,675	1,213
Apco credit to operating revenues due to AEP sales to unaffiliated utilities (Revenues - million $)[7]	194.2	224.6	104.4
Apco share AEP purchases for immediate resale (Expenses - million $)[7]	(34.3)	(51.7)	(27.4)

Note: Totals for each method include Virginia Power purchases from Hoosier and AEP.

1. FERC Form 1, Account 555 [Note: Hoosier/AEP contract scheduled to end December, 1999.]
2. FERC Form 1 (Virginia only) (1989 estimated)
3. 1989 figures from Securities and Exchange Commission, Form 10K (total) and Appalachian Power Co. 1991 Annual Report (capacity). 1991 figures from J. Vipperman response to R. Boucher information request. An offset to these costs is the revenue collectively obtained and shared by AEP companies from the sale of electricity to other utilities.
4. SEC Form 10-K, and FERC Form 1.
5. $15 rate applied to figures calculated as "Generation Deficit" difference.
6. $30 Rate based on bulk sales to Kingsport Power.
7. From Apco 1991 Annual Report to stockholders.

V. Future Projections

APCo:

	1995	1997	1999	2001
Generation	24,285	27,873	29,265	26,456
Internal Load	33,250	34,166	35,317	36,310
Int.Ld.-Gen.	8,965	6,293	6,052	9,854
Va. Generation				
Glen Lyn	1,889	1,864	1,873	1,354
Clinch River	4,882	4,903	4,934	4,774
Hydro (Net)	575	534	507	626
Total	7,346	7,301	7,314	6,754
Va. Internal Load	17,927	18,717	19,442	20,173
Va. [Int.Ld-Gen.]	10,581	11,416	12,128	13,419

Source: Internal loads from Virginia SCC Filing (765 kv transmission application). Generation data from Ohio P.U.C. Filing, Acid Rain Compliance Report (Scrubber).

Apco Planned Capacity Additions:

Year	Capacity	Plant Type
2002	330 MW	2 Combustion turbines
2004	330 MW	2 Combustion turbines
2005	340 MW	PFBC Unit, at Sporn plant
2007	330 MW	2 Combustion turbines
2009	900 MW	Coal-baseload
2010	165 MW	1 Combustion turbine
2011	900 MW	Coal-baseload

Source: C. Simmons testimony to Va. SCC. July, 1992

AEP: Other Planned Capacity Changes

1994	-325 MW	Retire Breed Plant (I&M)
1995	- 60 MW	Derate Gavin Plant (OP)
1999	+330 MW	Add 2 Combust. Turbines (CSP)
1999	- 95 MW	Retire Glen Lyn Unit 5 (Apco)
2001	+330 MW	Add 2 Combust. Turbines (CSP)
2003-08	+825 MW	Add 5 Combust. Turbines (CSP)
2005	+330 MW	Add 2 Combust. Turbines (KP)
2009	+680 MW	Add Pump Storage (CSP/KP)
2011	+680 MW	Add PFBC (CSP/OP)

Note: Glen Lyn retirement still under study.
Source: APCo Ten-Year Forecast (July 1992) and C. Simmons testimony before Va. SCC.

Virginia and North Carolina Power:

Energy Supply (GWhrs):

	1995	1997	1999	2001
Generation	55,433	57,155	59,440	64,663
Purchase Power	17,365	18,180	20,593	19,575
Total Supply	70,432	72,795	76,809	80,709

Note: Table does not include transmission for others (net), pumping energy, or non-requirement sales.

Capability - Summer (MW):

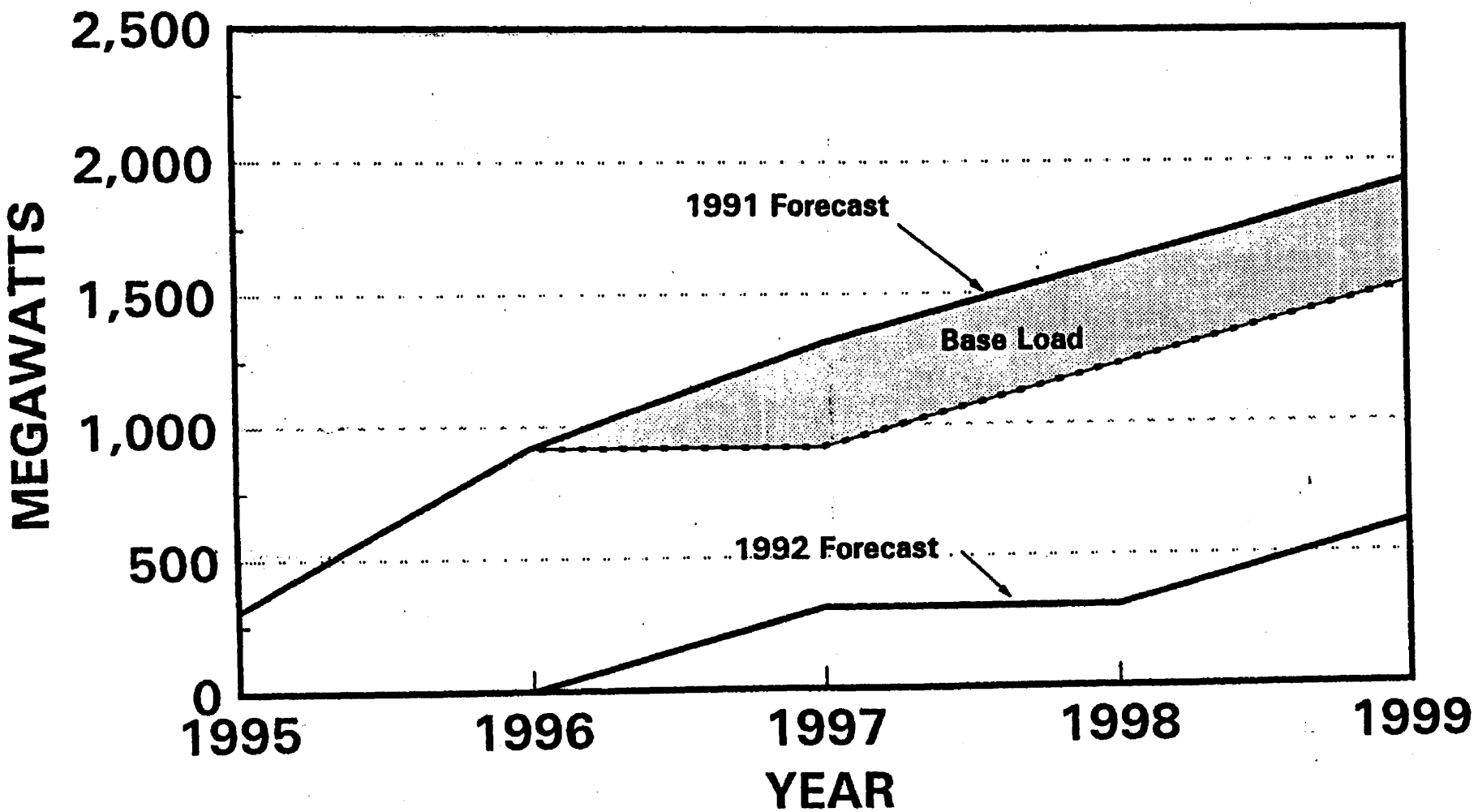
	1992	1995	1997	1999	2001
Installed	12,451	12,832	13,223	13,203	13,203
Net Purchase	3433	4395	4616	4690	3890
Future Capacity	-	-	306	612	2542
Total	15,884	17,227	18,145	18,505	19,535

Note: Installed capability = company-owned units.
Net purchases includes contracted utility and non-utility additions.
1999-2001 decrease reflects cessation of AEP and Hoosier contracts.
Future capacity includes mix of company and non-company additions.
Source: "Long Range Forecast of Load and Resources."

1 MWhr = 10^3KWhr 1 GWhr = 10^6KWhr

Information listed as "not available" to indicate unavailability to me, at this time.

VIRGINIA POWER
CUMULATIVE UNCOMMITTED CAPACITY REQUIREMENTS
1995 - 1999



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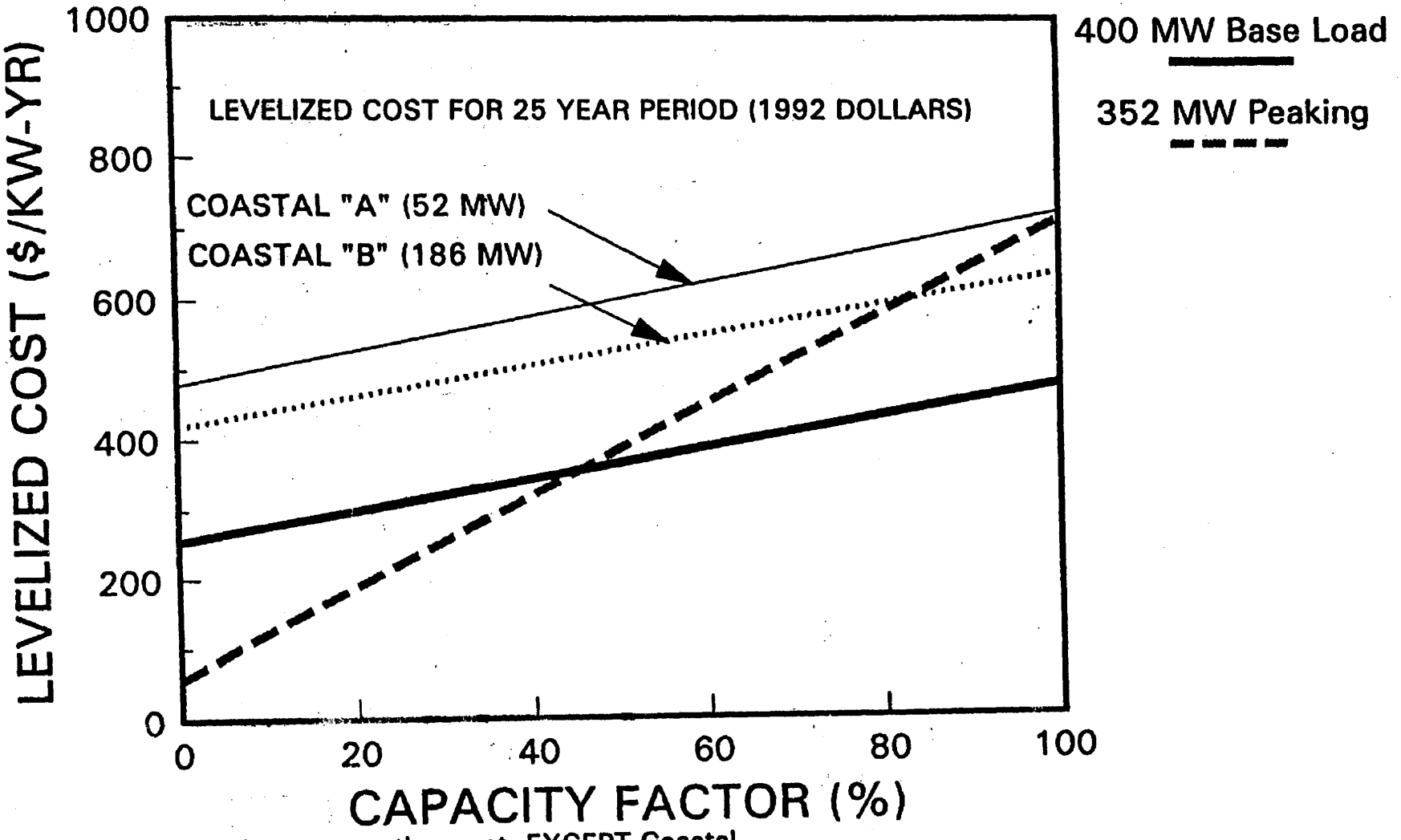
SCREENING CURVES
GENERATION OPTIONS

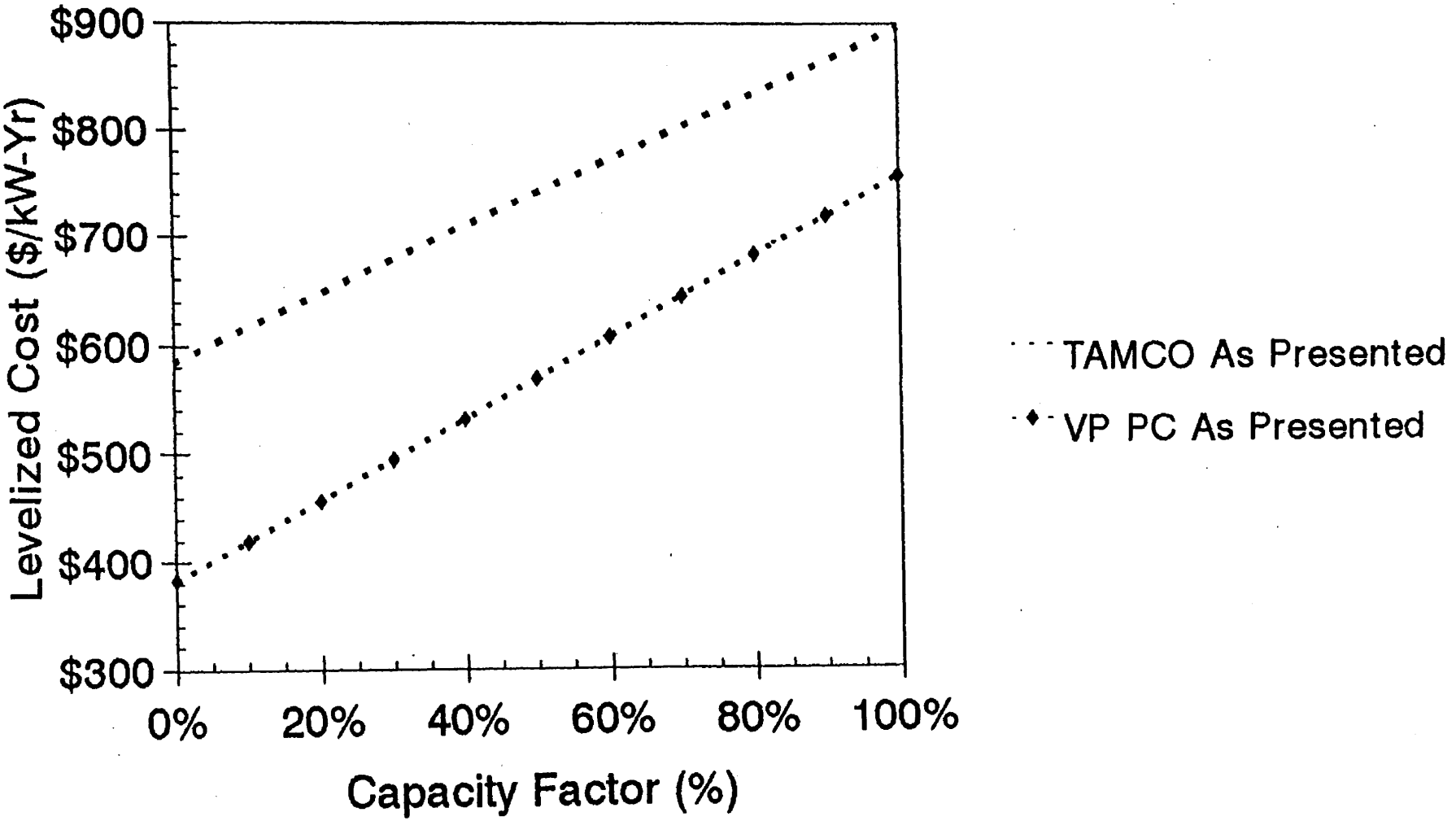


All units include interconnection cost, EXCEPT Coastal

sccoast

Figure 1

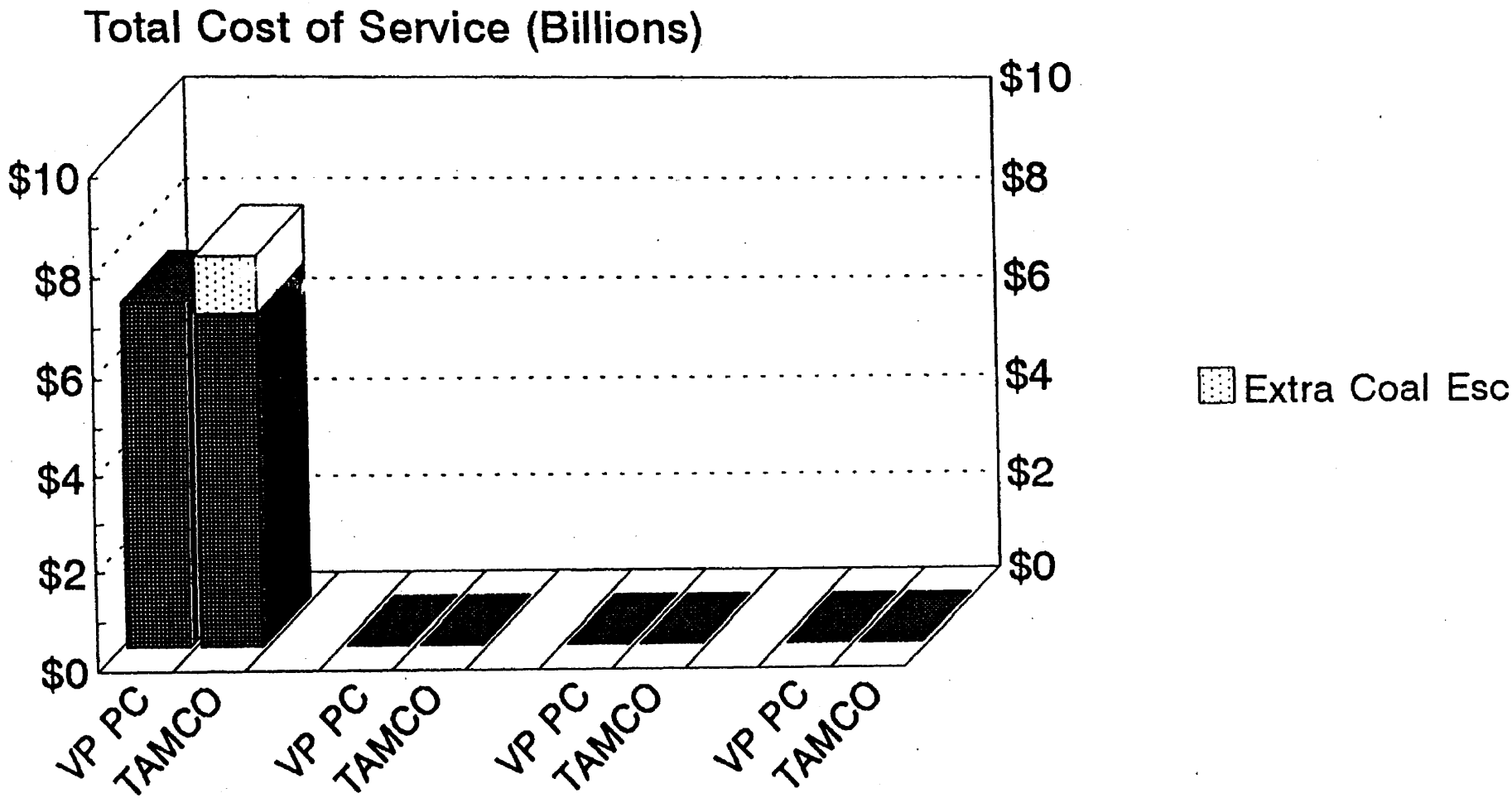
TAMCO vs VIRGINIA POWER BUILD OPTION GENERATION COST SCREENING CURVES "AS PRESENTED"



VP: w/o environmental controls, 16% fixed charge rate, 10.42% discount rate
TAMCO: includes extra coal escalation, 10.42% discount rate, 40 year term
Prepared by Coastal Power Production Company 7/15/92

Figure 1a

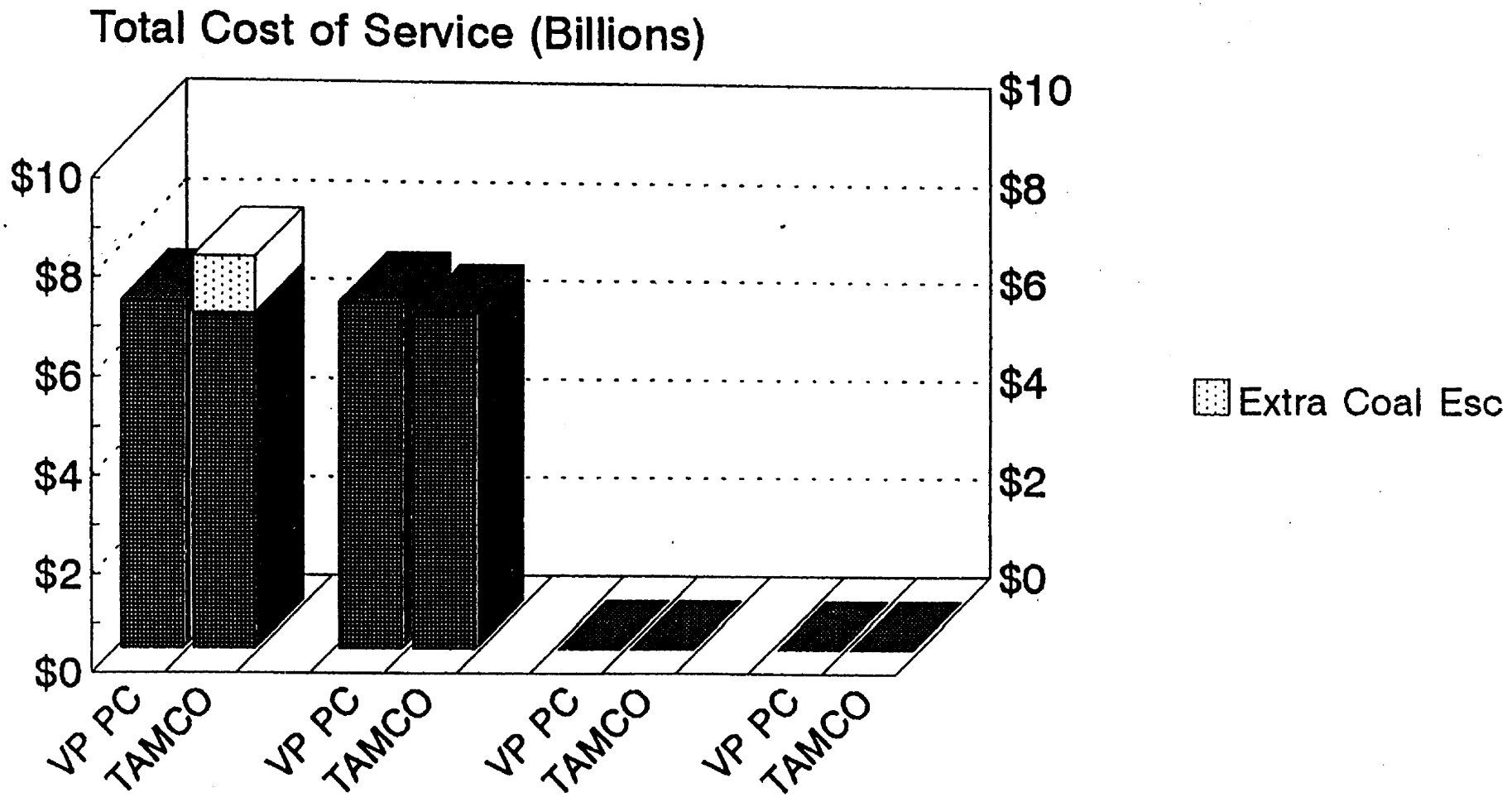
RATEPAYER COST COMPARISON
TAMCO vs VIRGINIA POWER BUILD OPTION



Total costs of service, as spent dollars, operating period 2000-2039.
Prices from TAMCO rate schedule and for a 186 MW share of Virginia Power pulverized coal unit.
Prepared by Coastal Powe[illegible]oduction Company 7/15/92

Figure 1b

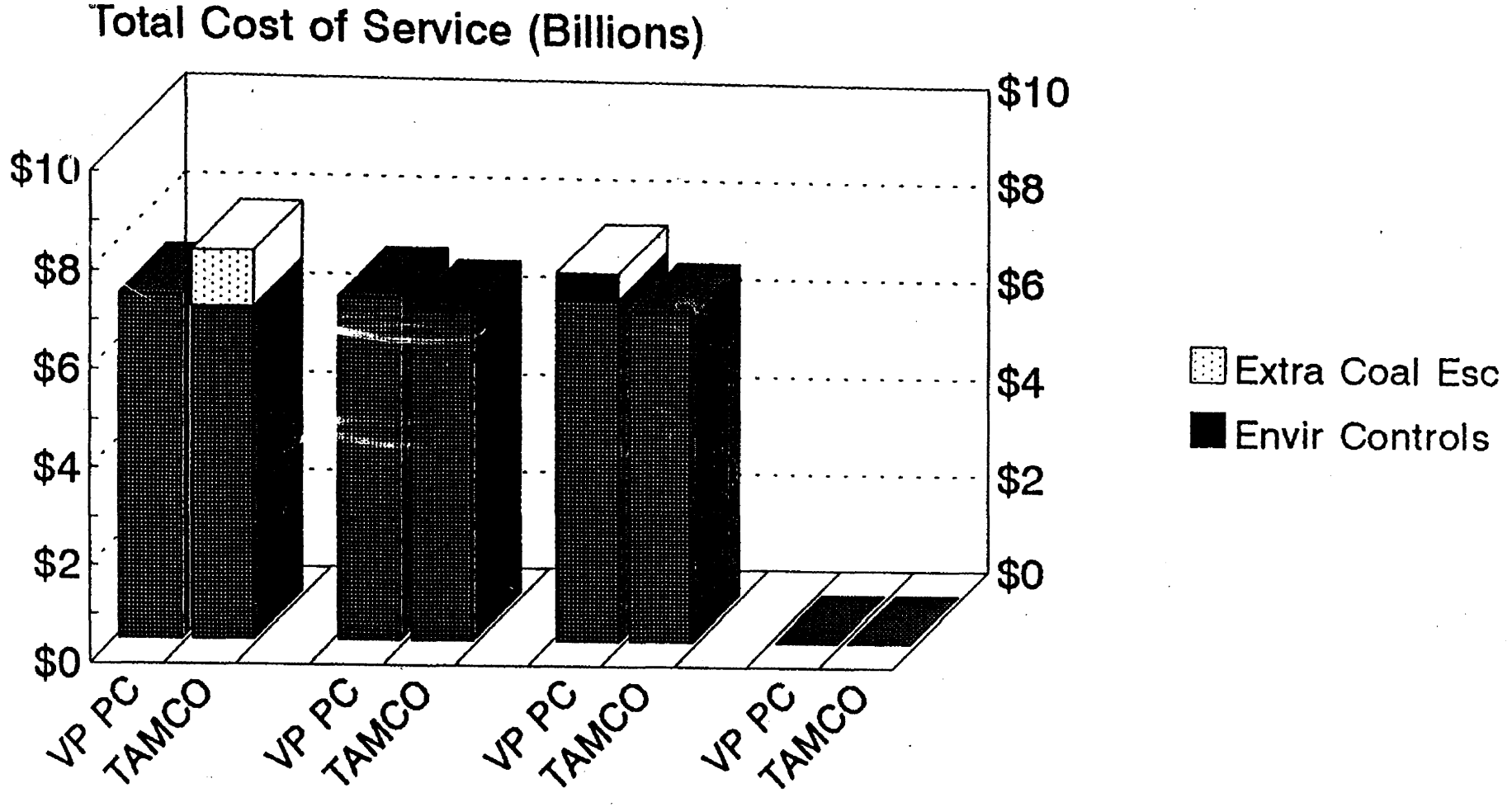
RATEPAYER COST COMPARISON
TAMCO vs VIRGINIA POWER BUILD OPTION



Total costs of service, as spent dollars, operating period 2000-2039.
Prices from TAMCO rate schedule and for a 186 MW share of Virginia Power pulverized coal unit.
Prepared by Coastal Power Production Company 7/15/92

Figure 1c

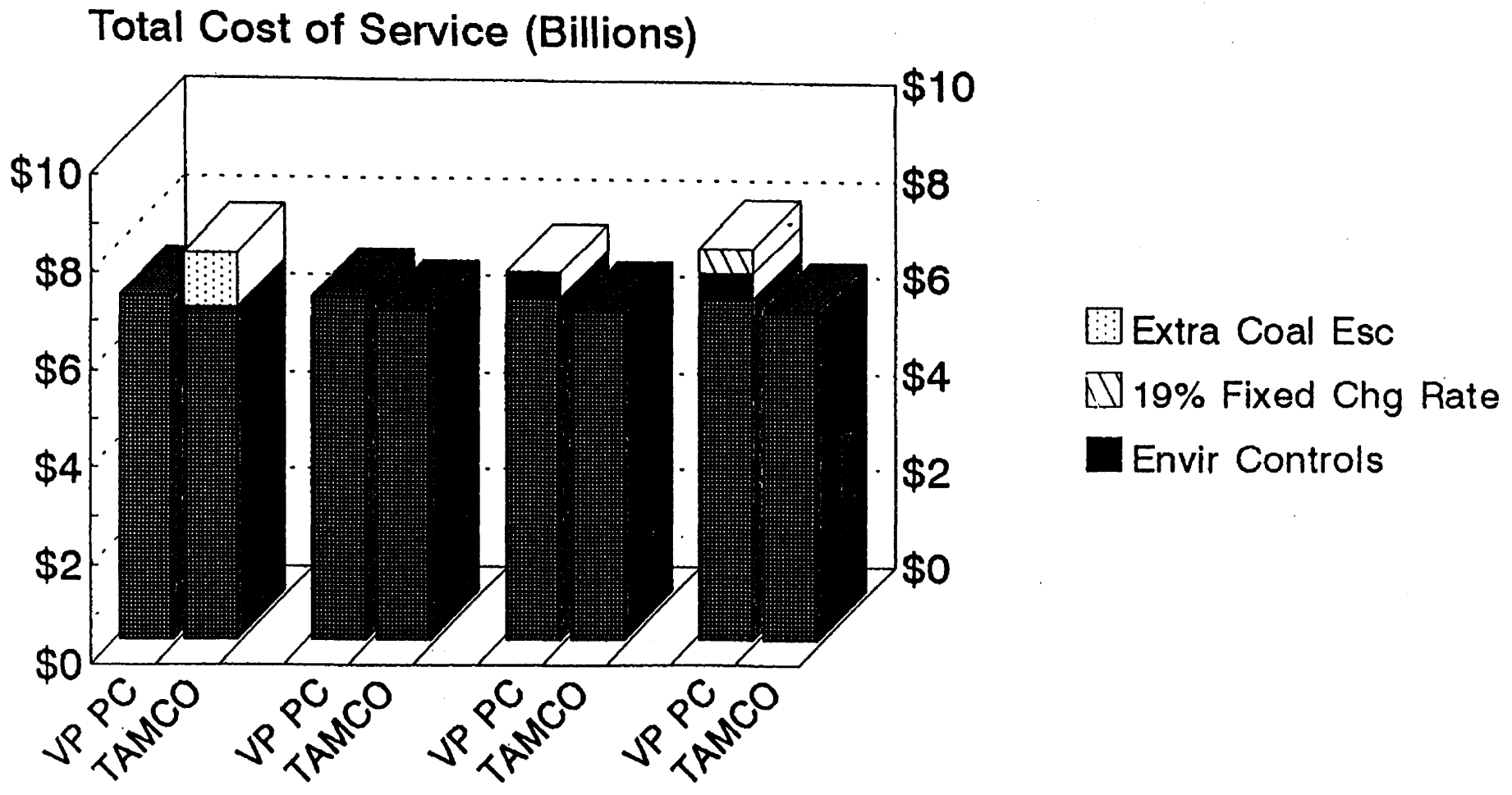
RATEPAYER COST COMPARISON
TAMCO vs VIRGINIA POWER BUILD OPTION



Total costs of service, as spent dollars, operating period 2000-2039.
Prices from TAMCO rate schedule and for a 186 MW share of Virginia Power pulverized coal unit.
Prepared by Coastal Powe oduction Company 7/15/92

Figure 1d

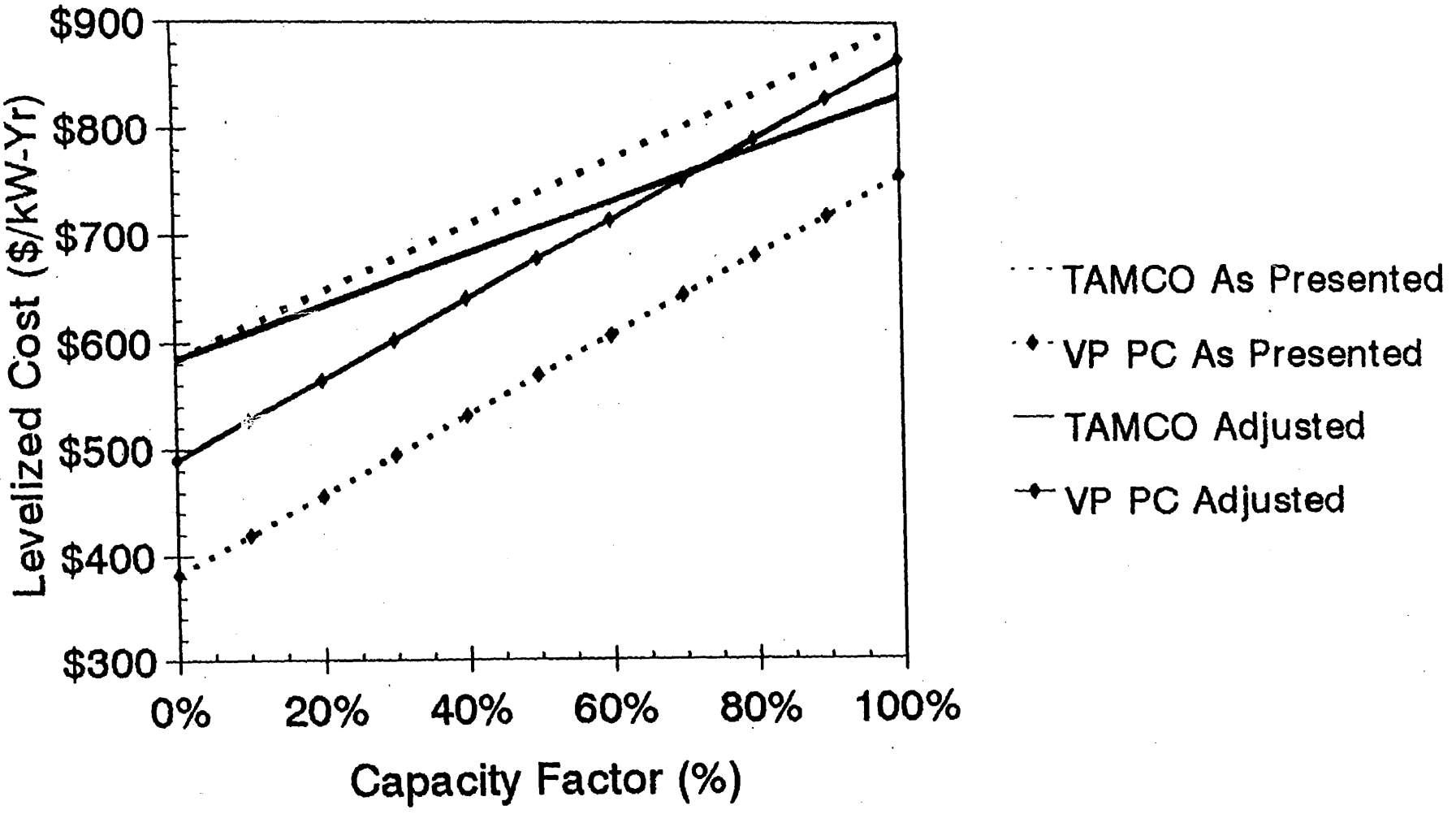
RATEPAYER COST COMPARISON
TAMCO vs VIRGINIA POWER BUILD OPTION



Total costs of service, as spent dollars, operating period 2000-2039.
Prices from TAMCO rate schedule and for a 186 MW share of Virginia Power pulverized coal unit.
Prepared by Coastal Power Production Company 7/15/92

Figure 2

TAMCO vs VIRGINIA POWER BUILD OPTION GENERATION COST SCREENING CURVES - ADJUSTED



VP: incl environmental controls, 19% fixed charge rate, 12% discount rate
TAMCO: less extra coal escalation, 12% discount rate, 40 year term
Prepared by Coastal Power Production Company 7/15/92

1993 SESSION

LD7045420

HOUSE BILL NO. 2129

Offered January 26, 1993

A BILL to amend the Code of Virginia by adding in Article 1.1 of Chapter 10 of Title 56 a section numbered 56-233.1:1, relating to public utilities; power purchases from federal grant recipients.

Patrons—Quillen, Baker, Ball, Brickley, Councill, Cranwell, Diamonstein, Forehand, Giesen, Guest, Harris, Jackson, Jennings, Johnson, Moss, Munford, Phillips, Robinson, Smith, Stieffen, Stump, Thomas and Wagner; Senators: Nolen, Potts, Reasor and Wampler

---

Referred to the Committee on Corporations, Insurance and Banking

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Be it enacted by the General Assembly of Virginia:

1. That the Code of Virginia is amended by adding in Article 1.1 of Chapter 10 of Title 56 a section numbered 56-233.1:1 as follows:

§ 56-233.1:1. Power purchasing practices.—A. Notwithstanding the provisions of § 56-233.1, a public utility shall not be required to utilize competitive bidding whenever (i) the recipient of a federal grant of ninety million dollars or more from the U.S. Department of Energy for the construction and operation of a clean coal technology project within the Commonwealth proposes to sell it electrical power and (ii) the project will generate the power sought to be sold to the public utility.

B. The Commission shall, upon the petition of any public utility or grant recipient described in subsection A, conduct an arbitration proceeding in which it shall establish the price, terms and other conditions by which the public utility must purchase power from the grant recipient. In determining the price, terms and other conditions, the Commission shall utilize the criteria established in regulations adopted by the Federal Energy Regulatory Commission pursuant to the Public Utility Regulatory Policies Act of 1978 (P.L. 95-617).

C. The Commission shall, on or before September 1, 1993, conclude the arbitration and order execution of a contract which is sought by any petition filed pursuant to subsection B within thirty days of the effective date of this section.

Official Use By Clerks	
Passed By The House of Delegates	**Passed By The Senate**
without amendment ☐	without amendment ☐
with amendment ☐	with amendment ☐
substitute ☐	substitute ☐
substitute w/amdt ☐	substitute w/amdt ☐
Date: _____	Date: _____
Clerk of the House of Delegates	Clerk of the Senate

1993 SESSION

LD9158168

HOUSE JOINT RESOLUTION NO. 582

Offered January 26, 1993

Requesting the Department of Forestry to survey the availability and delivered prices of wood wastes within the Commonwealth.

Patrons—Councill, Abbitt, Bennett, Hull, Parker and Thomas

Referred to the Committee on Agriculture

WHEREAS, wood-waste fuels can reduce heat energy costs to the Commonwealth and provide economic stimulus to local wood products industries within the Commonwealth; and

WHEREAS, the lack of quantitative information about the potential availability of wood-waste fuels to the Commonwealth at specific locations, at present and over the long term, currently impedes the greater use of wood wastes for fuels by state facilities; and

WHEREAS, wood wastes' viability as a fuel at state facilities' central heating plants is tied closely to accessibility, availability and transportation costs; and

WHEREAS, currently, no data exists showing the location, availability, and delivered prices of wood waste from wood-processing facilities within the Commonwealth; now, therefore, be it

RESOLVED by the House of Delegates, the Senate concurring, That the Department of Forestry be requested to survey the availability and delivered prices of wood wastes within the Commonwealth, subject to favorable action on a budget amendment providing sufficient agency funding for the survey, estimated to be $20,000 - $30,000. Such survey should show wood wastes' availability within reasonable hauling distances of major state facilities and installations within each county in Virginia, from sources within the Commonwealth. Such survey should also consider the need to assure the availability of fuel supplies over the long term. In conducting the survey, the Department of Forestry is also requested to develop quantitative information documenting the extent to which the lack of net-revenue-generating byproduct markets are currently restricting or hindering expansion of the Commonwealth's wood product manufacturing industry; and be it

RESOLVED FURTHER, That all agencies of the Commonwealth shall provide assistance upon request to the Department of Forestry, as appropriate, and that members of Virginia's wood product manufacturing industry are urged to furnish such assistance as the Department of Forestry, or any agency assisting it, may request; and be it

RESOLVED FINALLY, That the Department of Forestry be requested to report the survey's findings and conclusions to the Governor and the 1994 Session of the Virginia General Assembly as provided in the procedures of the Division of Legislative Automated Systems for the processing of legislative documents.

Official Use By Clerks	
Agreed to By The House of Delegates	**Agreed to By The Senate**
without amendment ☐	without amendment ☐
with amendment ☐	with amendment ☐
substitute ☐	substitute ☐
substitute w/amdt ☐	substitute w/amdt ☐
Date: _____	Date: _____
Clerk of the House of Delegates	Clerk of the Senate

1993 SESSION

LD6946168

HOUSE BILL NO. 1670

Offered January 22, 1993

A BILL to amend and reenact § 2.1-51.31 of the Code of Virginia relating to the administration of government; capital outlay projects.

Patrons—Councill, Abbitt, Clement, Parker and Thomas

Referred to the Committee on Appropriations

Be it enacted by the General Assembly of Virginia:

1. That § 2.1-51.31 of the Code of Virginia is amended and reenacted as follows:

§ 2.1-51.31. Establishing rules for preplanning of capital outlay projects.— *A.* The Director of the Department of Planning and Budget or his designee shall prepare and issue regulations requiring a preplanning justification or a preplanning study, or both, for all capital outlay projects undertaken by any department, agency or institution of the Commonwealth. Such regulations, being ones which pertain to the location, design, specifications and construction of public buildings and other facilities, shall be exempt from the provisions of the Administrative Process Act ~~, Title 9, Chapter 1.1:1~~ (§ 9-6.14:1 et seq.). A preplanning study shall be required for any project of construction, renovation, or other capital outlay involving a structure of 20,000 or more square feet or which is estimated to cost one million dollars or more. For projects of lesser size or cost, the regulations issued by the Director may require only a preplanning justification of the project. Furthermore, the Director or his designee may waive the requirement for a preplanning justification or preplanning study for such projects of lesser size and cost when, in his judgment, such a preplanning justification or preplanning study is not needed or would not be warranted by the cost of making one. The Director shall in his regulations, by incorporation of existing administrative procedures or otherwise, determine the content and scope of preplanning justifications and preplanning studies, including the definition of the terms "capital outlay project." Preplanning studies for projects estimated to cost less than $2 million shall be done at a cost not exceeding $25,000. Preplanning studies for projects estimated to cost $2 million or more shall be done at a cost not exceeding $50,000. Exceptions to these limitations upon the cost of preplanning studies may be authorized by the House Appropriations and Senate Finance Committees.

B. The regulations required by subsection A shall require consideration of locally available fuels, including wood wastes, for use in new and replacement central heating plants in any proposed or existing public buildings or other facilities.

Official Use By Clerks	
Passed By The House of Delegates	**Passed By The Senate**
without amendment ☐	without amendment ☐
with amendment ☐	with amendment ☐
substitute ☐	substitute ☐
substitute w/amdt ☐	substitute w/amdt ☐
Date: _____	Date: _____
_____	_____
Clerk of the House of Delegates	Clerk of the Senate

1993 SESSION

LD6959168

HOUSE BILL NO. 1671

Offered January 22, 1993

A BILL to amend the Code of Virginia by adding a section numbered 2.1-483.2, relating to information on heating equipment which burns wood wastes.

Patrons—Councill, Abbitt, Clement, Parker and Thomas

Referred to the Committee on General Laws

Be it enacted by the General Assembly of Virginia:

1. That the Code of Virginia is amended by adding a section numbered 2.1-483.2 as follows:

§ 2.1-483.2. Information on equipment utilizing wood wastes.—The Division shall assemble and maintain information relevant to a determination by any department, agency, or institution regarding the suitability of using a central boiler or other heating equipment which is fueled by wood wastes, including but not limited to: (i) identity of manufacturers and suppliers of wood waste handling and burning equipment, (ii) capital and operating costs of such equipment, (iii) associated air emissions and solid waste disposal requirements, and (iv) fuel storage requirements. For purposes of this section, "wood wastes" means raw wood by-products from wood processing and wood product manufacturing industries, including sawdust, chips, bark, and planer shavings. The information shall be distributed to any department, agency, or institution with a construction project specifying a central boiler or heating plant, and to personnel involved in the procurement and administration of architectural and engineering services relating to such construction projects.

Official Use By Clerks	
Passed By The House of Delegates	**Passed By The Senate**
without amendment ☐	without amendment ☐
with amendment ☐	with amendment ☐
substitute ☐	substitute ☐
substitute w/amdt ☐	substitute w/amdt ☐
Date: _____	Date: _____
Clerk of the House of Delegates	Clerk of the Senate

1993 SESSION

LD6960168

HOUSE BILL NO. 1672

Offered January 22, 1993

A BILL to amend the Code of Virginia by adding a section numbered 2.1-483.2, relating to consideration of beneficial effects of in-state fuel purchases.

Patrons—Councill, Abbitt, Clement, Parker and Thomas

Referred to the Committee on General Laws

Be it enacted by the General Assembly of Virginia:

1. That the Code of Virginia is amended by adding a section numbered 2.1-483.2 as follows:

§ 2.1-483.2. Consideration of beneficial effects of in-state fuel purchases.—The Department of General Services, through its Division of Engineering and Buildings, shall establish guidelines for measuring any positive economic effects accruing to the Commonwealth resulting from the purchase of fuel produced in the Commonwealth for use in a central boiler or heating plant. Positive economic effects include, but are not limited to, increases in state tax revenues due to the sale of fuel produced in the Commonwealth. The Department of General Services shall establish procedures for incorporating such positive economic effects into its review of proposals, plans and specifications for capital outlay construction projects requiring the purchase, renovation or replacement of a central boiler or heating plant.

Official Use By Clerks	
Passed By The House of Delegates	**Passed By The Senate**
without amendment ☐	without amendment ☐
with amendment ☐	with amendment ☐
substitute ☐	substitute ☐
substitute w/amdt ☐	substitute w/amdt ☐
Date: _____	Date: _____
Clerk of the House of Delegates	Clerk of the Senate

Wood Products in the Waste Stream: Characterization & Emission Testing Protocol Development

August 5, 1992

Researchers

- Environment Risk Limited
- C. T. Donovan Associates, Inc.

Funding Sponsors

- New York State Energy & Development Authority
- U.S. EPA
- Canadian Dept. of Energy, Mines & Resources
- U.S. DOE - Regional Biomass Program
- Virginia DMME

Total Cost $331,000

Virginia's Share $42,000

Department of Mines, Minerals and Energy

Kathy J. Reynolds

Project Objectives:

August 5, 1992

Identify the Quantity & Quality of Waste Wood

Summarize the Regulatory Issues Affecting the Processing & Combustion of Waste Wood for Energy

Characterize Waste Wood Processing & Combustion Facilities

Collect and Analyze Emission Data from Operating Combustion Facilities

Department of Mines, Minerals and Energy

Kathy J. Reynolds

Project Study Area

August 5, 1992

- California
- Connecticut
- New Brunswick Providence/Canada
- New York
- North Carolina
- Vermont
- Virginia
- Washington
- Wisconsin

Department of Mines, Minerals and Energy

Kathy J. Reynolds

Objective of Waste Wood Processing

August 5, 1992

Remove Wood from Waste Stream and Reuse or Recycle

Potential End Use as Fuel, Potting Soil, Landscaping Mulch, Soil Amendment, or Manufactured Products

Function of:

- Profitability
- Regulatory Climate
- Public Acceptance

Department of Mines, Minerals and Energy

Kathy J. Reynolds

"Clean" Waste Wood

August 5, 1992

Untreated, Uncontaminated Natural Wood

By-product of Harvesting, Site Preparation, or Primary Wood Products Industry

Bark, Chips, Sawdust, Pallets, Dimensional Lumber

Until the 1980's, Almost All Waste Wood Fuel Was "Clean"

In 1990, 80-85% of Waste Wood Fuel in Study Area Was "Clean"

Department of Mines, Minerals and Energy

Kathy J. Reynolds

"Treated" Waste Wood

August 5, 1992

Treated, Adulterated or Chemically Changed

Construction Waste, "Urban" Demolition, or Secondary Wood Processing

Plywood, Particle Board, Wood Laminates, Stained or Painted Wood, Railroad Ties, Utility Poles, Pilings

Applications Emerging Over Last 10 Years, But Facing Considerable Obstacles

In 1990, Only 15-20% of Waste Wood Fuel in Study Area Was "Treated"

Department of Mines, Minerals and Energy

Kathy J. Reynolds

Virginia Use of Wood As Fuel

August 5, 1992

1.4 % of Electrical Generation in Virginia

12% of Industrial Energy Consumption

Department of Mines, Minerals and Energy

Kathy J. Reynolds

Waste Wood Combustion Facilities in Virginia

August 5, 1992

Koppers Plant/Roanoke

Louisiana Pacific/Dungannon

Wood Tech, Inc./Bluefield

Chesapeake Corp./West Point

Stone Container Corp./Hopewell

Westavco/Covington

Union Camp/Franklin (Particle Board)

Department of Mines, Minerals and Energy

Kathy J. Reynolds

Wood Waste to Energy Potential

August 5, 1992

Virginia Waste Reduction Policy:

- Recognizes "Clean" Waste Wood As Principle Recyclable Material
- Classifies Waste Wood to Energy As Resource Recovery System, Not As "Reuse"
- Processing Waste Wood to Fuel is Not Considered Reuse or Recycling
- Policy May Encourage "Clean" Waste Wood to Mulch, Soil, and Manufactured Products at the Expense of Fuel

Department of Mines, Minerals and Energy

Kathy J. Reynolds

Wood Waste to Energy Potential

August 5, 1992

Virginia Solid Waste Regulation:

- Classified Waste Wood (Clean or Treated) As Resource Recovery System

- Regulation of Resource Recovery System is Similar to Other States' MSW "Incinerator" Regulations

  - Waste Supply Analysis

  - Ash Testing

  - Ash Characterization for Leachate

  - Ash Disposal in Landfill if Tested Non-Hazardous and Not >1ppb Dioxin or >50ppm PCB

- Other States Assume "Clean" Waste Wood Produces Non-hazardous Ash: Evoke RCRA Exemption

Department of Mines, Minerals and Energy

Kathy J. Reynolds

Waste Wood To Energy Potential

August 5, 1992

Virginia Air Quality Regulation:

- Classifies "Clean" Wood Fired Energy Recovery Facility As Wood Boiler or Combustion

- Requires BACT for Criteria Pollutants; Typical Concerns Are Particulate, NOx, and CO and VOC Controls

- Requires BACT for Hazardous Air Pollutants Over Trigger Levels; Typical Concerns are Benzene, Formaldehyde, Acetaldehyde, Trace Metals

Department of Mines, Minerals and Energy

Kathy J. Reynolds

August 5, 1992

Virginia Air Quality Regulation (con't)

- Classifies "Treated" Waste Wood to Energy As Incineration if Waste Wood is Brought In
- Does Not Allow On-site Incineration of "Treated" Waste Wood
- Applications for On-site Incineration of Scrap Plywood & Waferboard Have Been Denied
- One Permit For Test Burns Using Plywood Approved
- Sampling of Fuel, Stack, & Ash Would Be Required if a Permit Use Was Approved
- Public Opposition Likely

Waste Wood to Energy Potential

August 5, 1992

Virginia Energy Policy

- Virginia Energy Plan Strategies
  - Research Feasibility of Electrical Generation From Waste Wood Fuel
  - Promote Demonstration of Renewable Technologies In State Facilities
  - Promote Expanded Use of Wood As Heat Source
  - Integrate Waste to Energy With Waste Management Hierarchy
- Limited Potential for IPP
- No Identified Financial Incentives

Department of Mines, Minerals and Energy

Kathy J. Reynolds

Other Technical Information in Study

August 5, 1992

Types, Composition and Availability of Waste Wood

Types of Waste Wood Processing Facilities, Equipment

Type of Waste Wood Combustion Facilities

Chemical & Physical Properties of Waste Woods & Their Ashes

Air Emission Data From Waste Wood Combustion

Department of Mines, Minerals and Energy

Kathy J. Reynolds

Presentation on Coal Exports

Virginia Coal and Energy Commission, Roanoke. August 4, 1992.
Carl E. Zipper, Virginia Center for Coal and Energy Research, VPI&SU

Virginia Coal Exports, 1989 - 1991

Year	Va. Production	Export Tonnage		Export Percentage	
		Overseas	Canada	Overseas	Total
	- - - Million Tons - - - -			- % of Va. Prod. -	
1991	42.3	16.7	1.4	39	43
1990	45.6	17.9	1.2	39	41
1989	43.6	13.7	1.0	31	34

Source: Exports from U.S. Energy Information Administration, production from Virginia DMME.

1992 export figures are not yet available for Virginia. However, Hampton Roads exports for first six months are down by about three percent from last year. Virginia's production for the first five months was down by about two percent from last year.

Virginia coal exports are primarily metallurgical grade. In 1990: 1.5 million tons steam coal and 16.4 million tons metallurgical grade coals were exported to overseas markets. Canadian exports were dominantly metallurgical grade.

In 1991, U.S. was the world's second leading coal exporter (behind Australia), accounting for approximately $4.6 billion in foreign trade. Coal was nation's 17th leading export product, in terms of value.

1991 Facts and Figures:

World Coal Trade	450	million tons (approx)
U.S. Exports:	108.5	million tons, $4.6 billion
Hampton Roads Exports:	58.0	billion tons, 53 percent U.S. total
Virginia Overseas Exports:	16.7	million tons, 29% H.R. total
Virginia's total exports :	18.1	million tons, 17% U.S. total

Primary Markets Served by Hampton Roads Coal Exports - 1991

Rank	Market	Million Tons	% Met (US)	HR as % of US	US Rank	HR Rank, 1989
1	Italy	9.3	58	82	2	1
2	Netherlands	9.1	48	95	5	3
3	France	6.3	62	66	4	5
4	Brazil	5.2	99	74	7	2
5	Belgium	4.8	74	65	6	6
6	Japan	4.8	77	39	1	4
7	U.K.	3.7	76	59	8	8
8	Spain	3.6	73	77	9	7
9	Korea	2.9	79	79	12	9
10	Turkey	1.8	79	81	13	10

Canada was the No. 3 importer of US coal in 1991 - 10.7 million tons (60% met grade.) No Canadian imports passed through Hampton Roads.

Primary Market Regions Served by Hampton Roads Coal Exports, 1991

Market	Coal Exports from	
	H.R.	U.S.
	(million	tons)
North America	-	11.0
South America	5.3	7.6
E.E.C.	38.7	58.2
Other Europe	2.4	5.2
Asia, Africa, Oceania	11.5	26.5
Total	58.0	108.5

Source: Coal Exporters Association.

Major Coal Exporters from Hampton Roads, 1991

Company	Exports	Va. Prod.
	(million	tons)
Pittston	8.3	7.5
Island Creek	5.4	6.0
Westmoreland	5.1	2.3
Peabody	4.5	
Massey	4.3	
Consol	3.9	2.6
United	2.5	

Sources: Exports from *Coal Outlook*. Virginia production totals calculated by VCCER, in *1992 Virginia Coal*.

Importance of Coal Exports to the Virginia Economy (1990)

Economic Indicator	Virginia Total	Coal - Total (% of Virginia)	Coal Exports (% of Virginia)
Total Economic Activity		$3.1 billion	$1.5 billion
Contribution to GSP	$140 billion	$1.5 billion (1.1%)	$700 million (0.5%)
Payroll	$73 billion	$1 million (1.4%)	$500 million (0.7%)
Employment	3,000,000	31,700 (1.1%)	14,900 (0.5%)

Note: Totals equal direct and indirect economic impacts of Virginia coal mining, and of in-state transport of Virginia-origin coals.

Source: Preliminary results of study in process by VCCER - these figures are not for publication at this time.

Export Projections: Met coals held 65%-66% of total U.S. export market, from 1986-1989; fell to 60% in 1991 (although tonnage held steady) as steam coal exports increased.

U.S. EIA Projections (Base Case)

	1990	2000	2010
	(- - million tons - -)		
Domestic consumption	914	989	1210
Appalachian production	382	402	457
U.S. exports	104	144	235
Appalachian exports	99	130	201
Met coal exports	62	47	42

The same set of projections forecasts increasing prices for Appalachian steam coals, to $33 per ton in 2010 (1990 dollars).

Clover International Coal Corporation

9102-I Industry Dr., Manassas Park, VA 22111 — Tel. (703) 330-1200 — Fax (703) 368-7543

TYPE OF COAL USED IN BULGARIA

Coking Coal

Moisture (as received) .....MAX 8.0%

Ash (dry) .....MAX 8.5%

Sulfur (dry) .....MAX 1.0%

Volatile (dry) .....26% to 28%

F.S.I. ..... 5.5 to 7.0

ARNU ..... 30% - 70%

EXPANSION ..... 0.5 PSI or less

SIZE ..... 2" or less

Steam Coal

BTU 11,000

Moisture (as received).....Max 10%

Sulfur (dry) .....Max 1.0% (Preferred)

Ash (dry) .....Max 10.0%

Size ..... 0 to 50 mm

Volatile (dry) ..... Min. 28%

Heating Coal

BTU 9,000

Moisture (as received) .....Max 10%

Sulfur (dry) .....Max 1.0% (Preferred)

Ash (dry) .....Max 14%

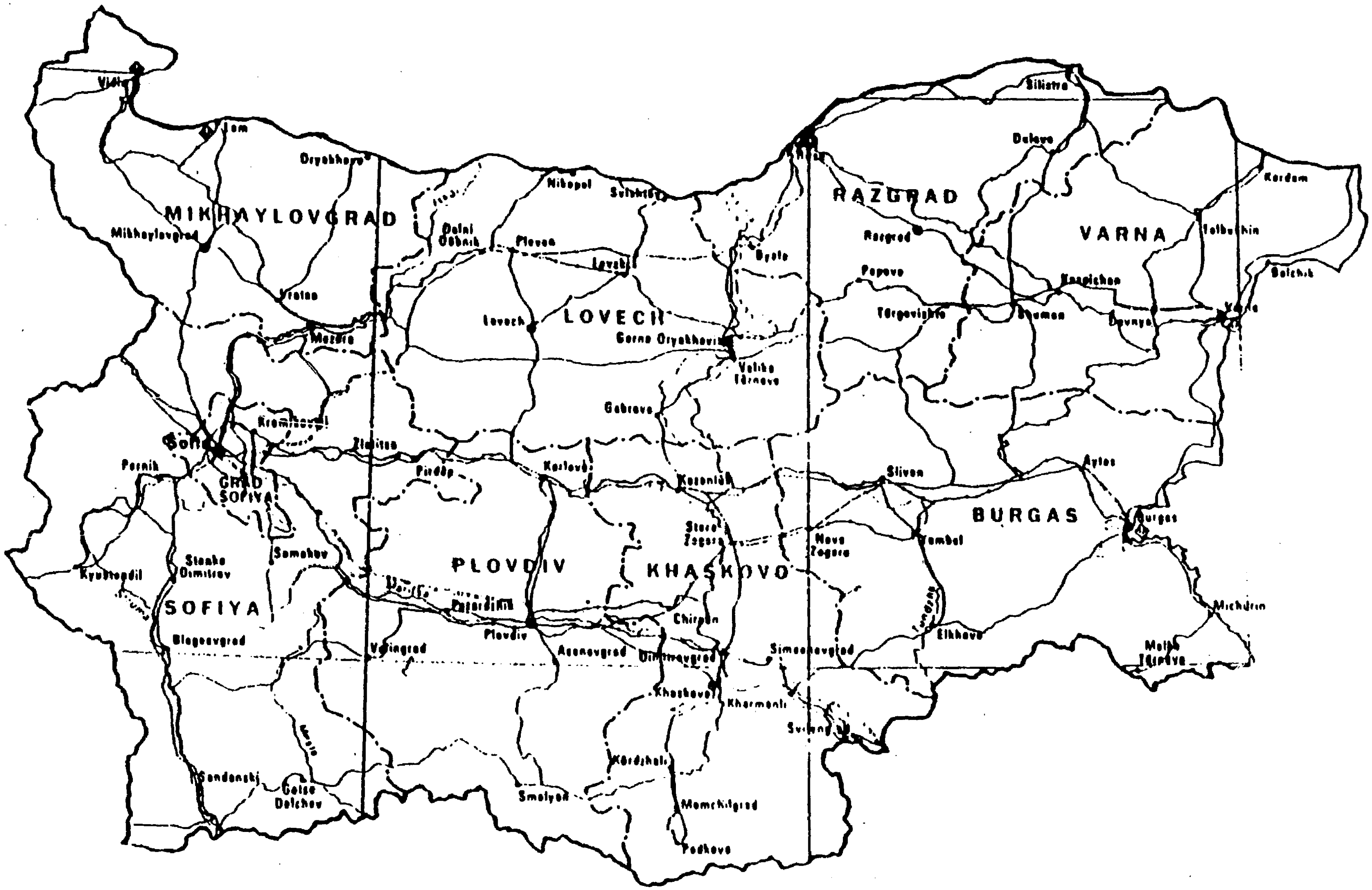
Volatile (dry) .....Min. 28%

Size .....10 mm to 100 mm

"On comparing Bulgaria's record with that of other East European countries during 1991, one sees that of all the former communist countries in the Balkan Peninsula, only Bulgaria has had a peaceful and steady transition to democracy. It was the first country in Eastern Europe to hold a second round of free national elections since the fall of communism. If it continues on the path of reform and achieves greater success with its economic programs, Bulgaria has the potential to become one of the most successful of the postcommunist states. As it is, the country is a comparatively peaceful island in the rough Balkan sea of political instability.

"Radio Free Europe/Radio Liberty Research Report, 1991: New Hopes, New Fears: Bulgaria: A New Constitution and Free Elections, p. 82, 3 January 1992.

BULGARIA


MIKHAYLOVGRAD
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RAZGRAD
VARNA
PLOVDIV
KHASKOVO
BURGAS
SOFIYA
GRAD SOFIYA
Vidin
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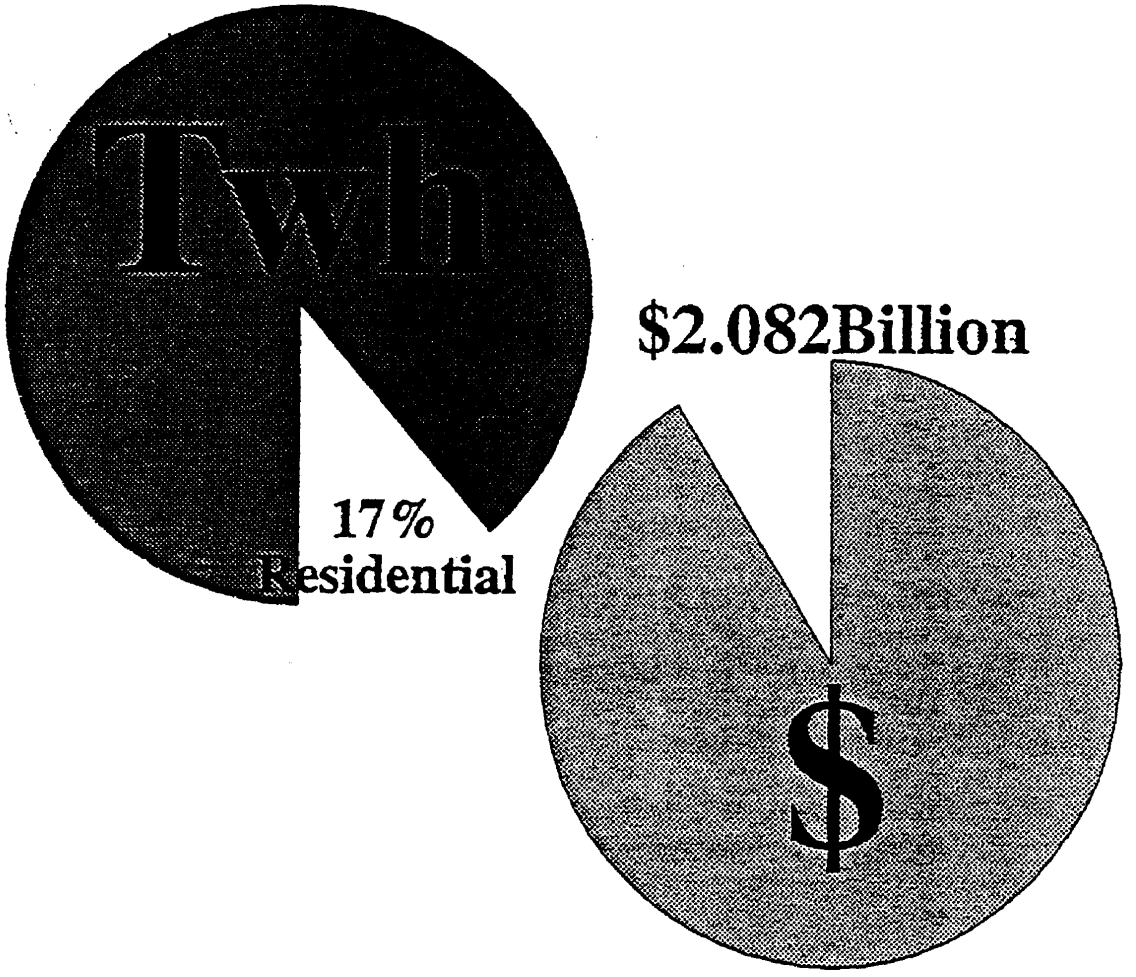
Mikhaylovgrad
Vratsa
Mezdra
Nikopol
Dolni Dåbnik
Pleven
Levski
Lovech
Gorna Oryakhovitsa
Veliko Tårnovo
Byala
Gabrovo
Silistra
Dulovo
Kardam
Razgrad
Tolbukhin
Popovo
Balchik
Kaspichan
Tårgovishte
Shumen
Devnya
Varna
Kremikovtsi
Sofia
Pernik
Zlatitsa
Pirdop
Karlovo
Kazanlåk
Sliven
Aytos
Burgas
Stara Zagora
Nova Zagora
Yambol
Stanke Dimitrov
Samokov
Kyustendil
Pazardzhik
Chirpan
Michurin
Blagoevgrad
Velingrad
Plovdiv
Asenovgrad
Dimitrovgrad
Simeonovgrad
Elkhovo
Malko Tårnovo
Khaskovo
Kharmanli
Svilengrad
Kårdzhali
Sandanski
Gotse Delchev
Smolyan
Momchilgrad
Podkova

Energy Rated Homes of Virginia

Just the Facts

Virginia Energy Usage



2201 West Broad Street, Suite 106
Richmond, Virginia 23220
Tel. (804)358-0892 Fax (804)353-2508

Background Facts

OVERVIEW

The Energy Rated Homes of Virginia program is an energy rating system for new and existing housing in Virginia. An energy rating system is a method for documenting and quantifying energy efficiency information so that valid comparisons about energy costs and usage can be made.

Software has been customized for Virginia consisting of field collected data on: house type; conditioned floor area; insulation levels; air leakage; window size; orientation; shading solar gain; roof color; water heater efficiency; and space heating and cooling efficiencies, to produce a numerical score on a 1 - 100 scale for each home rated.

The performance-based, numerical score is translated into a one-to-five star rating. The rating sheet also provides information on the amount of energy projected to be used yearly (in BTU's), and an annual estimated energy cost by fuel type.

The home energy ratings will be performed by raters trained and certified by Energy Rated Homes of Virginia.

BENEFITS

The ultimate goal of Energy Rated Homes of Virginia is to improve the overall housing stock efficiency in Virginia. This goal will be accomplished in the following ways:

*** A consistent and "user friendly" public relations campaign to educate all audiences on the fuel neutral definition and the benefits of an energy efficient home. These audiences will include Realtors, lenders, appraisers, home inspectors, social and community service providers, and the general public.**

*** Negotiating for favorable financing products for energy efficient homes with lending institutions, loan originators, and the secondary mortgage market. This will also allow a wider segment of Virginia's citizens to enjoy the benefits of home ownership and reward builders for building energy efficient new construction.**

*** Maximizing the savings to utilities (demand side management).**

*** Encouraging real estate agents and sellers to utilize energy efficiency as a marketing tool.**

Salient Facts

* There are 90 million houses in the United States.

* Each unit uses 8,930 Kwh of energy per year.

* The nation's yearly total of energy use for residential purposes is 808 Twh.

* There were 2,291,830 occupied housing units in the state of Virginia as of the 1990 census.

* That represented 2.6% of the national total.

* 17% of the energy used in Virginia is used for residential purposes.

* Virginia's 1990 expenditure for energy for all purposes was $12.25 Billion.

* $2.082 billion was the expenditure for residential energy.

* A 20% reduction, achieved in research performed by the Oakridge National Laboratory in three states with a minimal expenditure on retrofitting, would save Virginia residents $416 million per year.

* 229 pounds of carbon dioxide is emitted per million BTU's of energy produced (averaged for all fuel sources).

* Virginia uses 21 Twh of residential energy per year.

* This results in the emission of 781 million pounds of carbon dioxide.

* A 20% reduction would mean the lessening of those emissions by 390,678 tons of carbon dioxide.

Board Facts

BOARD OF DIRECTORS

PRESIDENT
Gary Treaster
T.I.E. Incorporated
P.O. Box 1644
Chesterfield, Virginia 23832

TREASURER
Kenneth Schaal
Virginia Solar Power Association
Commonwealth Solar Services
Route 4, Box 1166
Ashland, Virginia 23005

SECRETARY
Charles A. Johnston
Virginia Power
P.O. Box 26666
Richmond, Virginia 23261

Steve Baum
Virginia Natural Gas, Inc.
5100 E. Virginia Beach Boulevard
Norfolk, Virginia 23502

Randy A. Bowers
City of Manassas
8500 Public Works Drive
P.O. Box 560
Manassas, Virginia 22110

Keith Carpenter
National Home Inspection Service
2639 West Street
Falls Church, Virginia 22046

Ron Oakes
Arrow Marketing
2984 S. Lynnhaven Road
Virginia Beach, Virginia 23452

Mark S. Kittrell
Virginia Mortgage Bankers Association
c/o 1st National Mortgage Corporation
1001 Boulders Parkway, Suite 100
Richmond, Virginia 23225

Douglas W. Talbot
Home Builders Association of Virginia
1108 E. Maine Street
Richmond, Virginia 23219

James A. Smith
Dept. of Mines, Minerals and Energy
Division of Energy
2201 West Broad Street
Richmond, Virginia 23220

EXECUTIVE DIRECTOR
Christine K. Taylor
ERHV
2201 West Broad Street
Richmond, Virginia 23220

THREE YEAR OPERATING GOALS

* To have rated 10,000 homes.

* To have in place a statewide network of certified raters.

* To require less state funding than in previous years.

* To have 10% of Virginia's citizens recognize Energy Rated Homes of Virginia name and logo.

* To have 100 dues paying affiliates.

* To show that 500 - 1,000 homeowners qualified for higher debt-to-income loan ratios because of energy-efficient home ratings.

* To have a list of statewide contractors certified to do home energy improvements.

* To evaluate program success by developing a mechanism to determine per cent of home upgrades.

ENERGY ASSISTANCE PROGRAM

FY91-92

Submitted by Department of Social Services
Division of Benefit Programs
Bureau of Energy and Emergency Assistance

VIRGINIA ENERGY ASSISTANCE PROGRAM
UPDATE FY91-92
MAJOR ISSUES

FUNDING

Congress appropriated $1.5 billion rather than the $1 billion anticipated.

$7,439,832 of funds were withheld and not available until 09/30/92. Department of Social Services borrowed this amount so that benefits could be adequately distributed during coldest months of the year. Delayed funding dollars must be encumbered or spent during the fiscal year before a state can request them. If not encumbered, they revert to the federal government, an action averted by Virginia by borrowing the funds.

PROGRAM REDESIGN

Automated Eligibility and Benefit Determination System

System worked efficiently.

Some local departments of social services were able to reduce staffing costs.

Several logistical problems occurred due to late receipt of approval to finalize proposal and implement.

An overwhelming majority of local agencies liked the new system and felt it made their jobs easier.

Shortened Application Period

Concept was not liked at inception. Local agencies felt that client population would not understand. Client awareness campaign (mailing of two post cards listing changes, newspaper articles, TV announcements got the word out). The mail out application form and addition to the Crisis Assistance Component of assistance to pay for the purchase of primary fuel circumvented any negative impact on the client population and local administration.

It should be noted that some 124,550 households were served in FY 92 which compares favorably with prior years, i.e. 124,072 in FY91 and 122,868 in FY90.

1991-92 Energy Assistance Program
Statewide Summary

		FUEL	CRISIS	COOLING
I.	Total Persons Served	280,623	43,465	
II.	Total Households Served	109,964	14,586	
	Percent Containing:			
	A. Elderly (60 or over)	33.0	12.2	
	B. Disabled	30.7	16.3	
	C. Children (Under 16)	48.2	64.0	
	D. Black Persons	45.6	46.8	
	E. White Persons	52.9	51.9	
	F. Alien Persons	.6	.3	
III.	Household Income Source	Fuel/Crisis		
	Percent With:			
	A. Earned Income	28.3		
	B. Unemployment	1.7		
	C. Social Security	34.6		
	D. SSI	27.7		
	E. ADC	22.1		
	F. General Relief	.9		
	G. Food Stamps	63.9		
	H. Veterans Benefits	3.4		
	I. Other	13.7		
	J. None	6.5		
IV.	Household Income Level			
	Percent With Income:			
	A. Under $2,000	7.9	19.0	
	B. $2,000 - 3,999	14.2	16.2	
	C. $4,000 - 5,999	34.8	20.4	
	D. $6,000 - 7,999	16.8	13.3	
	E. $8,000 - 9,999	11.0	11.2	
	F. $10,000 - 11,999	6.7	7.5	
	G. $12,000 - 14,999	5.2	7.1	
	H. $15,000 and over	3.2	5.4	
V.	Percent Who Used Each Fuel Type			
	A. Electricity	33.6	N/A	N/A
	B. Gas (Natural)	15.7	N/A	N/A
	C. Fuel Oil	13.6	N/A	N/A
	D. Kerosene	17.9	N/A	N/A
	E. Coal	4.3	N/A	N/A
	F. Wood	11.4	N/A	N/A
	G. LP Gas	3.5	N/A	N/A

		FUEL	CRISIS	COOLING
VI.	Approval Rate (Percentage)	89.9	87.0	
VII.	Benefits			
	A. Average per Household	$261	$191	$
	B. Average per Recipient	102	64	
	C. Minimum	107	N/A	N/A
	D. Maximum	392	700	400
VIII.	Housing (Percentage)			
	A. Homeowners	36.1	28.3	
	B. Renters	46.3	60.4	
	C. Renters w/ Heat Incl.	1.4	.5	
	D. Roomers	.9	.7	
	E. Subsidized Housing	15.3	10.0	
	F. Weatherized Homes	14.1	6.9	
IX.	Payment Method (Percentage)			
	1. Vendor Payments	77.0	90.9	
	2. Client Payments	23.0	9.1	

X. Dollars Available

LIHEA Grant	$28,822,467.00
Oil Overcharge Monies	5,645,365.00
Carryover	2,233,919.00
Total	$36,701,751.00

XI.. Expenditures

A. Benefits Total = $	$28,736,553	$2,791,548	$

B. Administration (Max = $3,446,783)
State = $ Local = $

XII. Types of Assistance Received

	Crisis			Cooling	
	#Cases	Amount Expended		#Cases	Amount Expended $
A. Equip Repairs	983	$121,320	H. AC Repairs		
B. Equip Purchase	1,106	643,790	I. Fan Repairs	0	000
C. Electricity	2,346	288,274	J. AC Purchase		
D. Security Dep	2,339	297,452	K. Fan Purch		
E. Space Heaters	365	226,238	L. Rewiring		
F. Port Sp Htrs	41	5,819	M. Fan/AC Rental		
G. Emerg Shelter	3	521	N. Prvnt Elec CutOff		
W. Primary fuel	3,477	484,504	O. Pymt of Elect		
X. Primary Disc	4,803	689,666	P. Elec Security Dep		
Z. Rebuild Furn	69	33,964			

LIHEAP LEVERAGING

In 1990, the Low-Income Home Energy Assistance Block Grant (LIHEAP) underwent a congressional review and oversight process called "reauthorization". The purpose of reauthorization is to allow Congress to decide if any given federal program should be continued, and whether any changes to the enabling legislation should be made.

LIHEAP was authorized in a bill signed by the President in November, 1990, for four years. There were a number of amendments to the LIHEAP statue which were enacted at that time. One major amendment is considered noteworthy in terms of its potential to affect public perception and operation of the LIHEAP program in Virginia over the next several years. This amendment established the "Leveraging Incentive Program."

On January 16, 1992, the United States Department of Health and Human Services (HHS) issued implementing regulations (Federal Register, Volume 57, No. 11, pp 1960-81) in response to the changes in the LIHEAP statue.

The questions and answers below will provide general information on the leveraging concept and its impact on Virginia.

Q: What is leveraging?

A: Leveraging is a term that means using our LIHEAP funds to acquire additional, non-federal resources to expand the effect of the federal dollars assisting low-income households. The report of the U.S. Senate's LIHEAP reauthorization bill states "if the LIHEAP program uses its purchasing power (or 'leverage') to acquire the full economic value of its resources, it can acquire substantial additional energy assistance resources and services for the poor from state energy market sources."

Q: What are "non-federal resources?"

A: Among others, they are state appropriated funds, discounts, credits, energy conservation improvements, fee waivers, forgiveness of arrears, donations of fuel or weatherization materials and anything else which meets the criteria of "countable resources" in the regulations.

Q: What is not "countable?"

A: Deferred obligations, projected future savings from weatherization, borrowed funds, funds used as a match for other federal programs, budget counseling and any other resources that do not "result directly in a specific net

addition to low-income households' total energy resources."

Q: What happens when a state is successful at leveraging?"

A: As an incentive to states to seek more for our energy assistance dollars, HHS has set aside $25 million for FY91 and $50 million for FY92 to be awarded to states who are able to leverage successfully. The awards are made on a competitive basis.

Q: How will the $25 million be distributed?

A: In the regulations, HHS has created a two-part formula on which to base the awards. Half of the money will be awarded by determining the value of a state's leveraged resources relative to its own basic LIHEAP grant. The second half of the funds will be awarded based on how much a given state leveraged relative to all states' efforts.

Q: How does a state prove that its LIHEAP funds brought in the additional resources?

A: To be counted, the state must be able to show that any resource meets at least one of the three criteria:

1) The resource was the result of acquisition or development by the LIHEAP program through negotiation, regulation or competitive bid, and that the LIHEAP program had "substantial involvement" in obtaining the benefits;

2) The benefits were appropriated or mandated for distribution through the normal LIHEAP program, and are thus provided to eligible households;

3) The resources are determined by HHS to be integrated with the LIHEAP program and "coordinated ... and are provided in cooperation and conjunction" with the basic program.

Q: What are Virginia's long-range plans for leveraging?

A: Virginia plans to work in partnership with vendors and other social services organizations to develop and implement leveraging activities. Cooperation among state agencies and new partnerships with utilities and fuel vendors is a necessity if the state is to prevail and succeed in this new environment.

Q: Besides the possibility of gaining increased amounts of assistance for low-income families, does leveraging provide any other benefits?

A: Yes. As mentioned above, it creates an incentive for better inter-agency and public-private partnerships. Further, it will demonstrate to the public at large and to federal and state legislators that LIHEAP is not a welfare program in the traditional income-transfer sense. Rather, LIHEAP programs will have to be creative and entrepreneurial in their efforts to assist low-income families which is extremely important in the current federal and state funding environments.

LIHEAP PROGRAM
FUNDING COMPARISON

	FY92 ACTUAL	FY93 PROJECTED
Grant	$28,822,467	$27,083,900
Overcharge	5,645,365	3,000,000
	$34,467,832	$30,083,900
Minus		
Admin (10%)	3,446,783	3,008,390
Outreach	60,000	
Leveraging	35,000	15,000
Client Educ.	5,000	
	$30,921,049	$27,060,510
Plus		
Carryover	2,233,919	1,000,000
Leveraging		69,909
BENEFITS	$33,154,968	$28,130,419

BENEFIT DOLLARS

	FY92 ACTUAL	FY93 ESTIMATE
CRISIS	$ 2,791,548	$ 2,600,000
COOLING	650,000*	500,000
FUEL	28,736,553	25,030,419
	$32,178,101	$28,130,419

13% Reduction in Fuel Dollars
1% Reduction in Crisis Dollars
1.3% Reduction in Cooling Dollars

13% REDUCTION IN TOTAL BENEFIT DOLLARS

*Actual amount paid not available

VIRGINIA ENERGY ASSISTANCE PROGRAM
FUTURE ISSUES

FUNDING

Funding will continue to be an issue. The Congressional Conference Committee bill passed last week and sent to the President for signature contains an appropriation of $1.449 billion in funding for FY94 to allow adequate funding for states to change the grant fiscal year from October 1 through September 30 to July 1 through June 30. $143 million of this amount was established to reimburse states with expenses incurred during the transition.

At this time it is not practical to project that this amount of money will be available. Even if this part of the bill is approved by the President, it will still have to go through the total legislative appropriation process next year.

Oil overcharge dollars will be depleted at the end of FY93.

If Congress continues to appropriate funding for the leveraging incentive fund, increased leveraging incentives should result in increased funding awards.

PROGRAMMATIC

No major programmatic changes are proposed for the future.

Continual improvements to current automation will continue in an effort to decrease manual workload and decrease the administrative cost of the Program.

COMMONWEALTH of VIRGINIA

NEAL J. BARBER
DIRECTOR

DEPARTMENT OF
HOUSING AND COMMUNITY DEVELOPMENT

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October 7, 1992

TO: The Honorable James F. Almand, Chairman
Energy Preparedness Subcommittee

FROM: Alice Fascitelli, Associate Director
Division of Housing

SUBJECT: **WEATHERIZATION ASSISTANCE PROGRAM: Status and Update**

FUNDING LEVEL:

	FY 91	FY 92	FY 93 (Anticipated)
DOE	$3.4	$3.3	$3.2
EXXON	$4.5	0	0
STRIPPER	0	.4	0
TOTALS	$7.9	$3.7 *	$3.2

* The current year (FY 92) is operating with a $1.8 million carryover from FY 91. Therefore, the total available for the FY 92 program is approximately $5.5 million.

HOUSEHOLDS ASSISTED IN FY 91:

- 3,365 households had their housing units weatherized
- 73% of the households owned their own home
- 23% of the household contained elderly persons; 9% contained handicapped
- On the average, $1,648 was spent on each unit that was weatherized

ADMINISTRATION:

- About 4% of the total funds are spent by DHCD for state administration of the program.
- The 26 local agencies receive another 5% of the total for administration.

- DHCD has one full time staff, 50% of another staff, and contracts with Ener-Tec for training and technical assistance

FY 91 EMPHASIS:

- Transition administration from DSS to DHCD
- Training on new standards: emphasis changed from production to quality of work and increased energy savings
- Begun efforts to Integrate weatherization with housing rehabilitation and coordinate with other DHCD housing programs

CURRENT ISSUES:

- FY 92 is a transition year with a 30% reduction in funds available; FY 93 will see an additional 25% reduction for a total of over 50% reduction from the FY 91 funding level
- Continue integration and coordination efforts to make best use of available resources and better serve clients
- Encourage and promote local leveraging efforts:
  - For profit ventures using new technology
  - Coupling weatherization with other rehab programs, such as CDBG, Indoor Plumbing, Local Rehab
- Begin state leveraging efforts:
  - Work with utilities to start weatherization programs
  - Develop landlord contribution program
- Develop and adopt multi-family weatherization standards
- Develop method to evaluate energy savings

FUTURE DIRECTION:

- Majority of funding from private sources
- Fewer agencies administering the program; more regional approach to administration
- Total integration with housing rehabilitation programs
- More emphasis on evaluation of savings

Clover Project Facts

OVERVIEW: Clean, Reliable Power

Old Dominion Electric Cooperative and Virginia Power are jointly constructing a twin-unit, 786-megawatt, advanced-technology, coal-fired electric generating station on 1,836 acres on the Staunton River in Halifax County, near Clover, Virginia. Old Dominion is the power supplier for 12 electric distribution cooperatives, 10 in Virginia and one each in Maryland and Delaware.

During the power plant's life of 35 years or more, it will provide reliable power to the 350,000 homes and businesses served by Old Dominion's 12 member cooperatives and will do so in a responsible, environmentally sound way. In fact, it will be the "cleanest" coal-fired power plant of its class east of the Mississippi River, with almost one-third of its $1.2 billion cost, almost $400 million, devoted to making the plant clean.

ENVIRONMENTAL LICENSING: As of April 1991, all major local, state, and federal permits had been secured for the project. However, due to a request for its appeal, the "Prevention of Significant Deterioration" (PSD) Permit was delayed, pending the U.S. Environmental Protection Agency's (EPA's) review. On January 29, 1992, the EPA dismissed the appeal. With an effective state air permit, Old Dominion and Virginia Power issued the notice to start construction to the consortium of builders on January 31, 1992. Permanent construction began the week of February 3, 1992.

FINANCING: On June 3, 1992, proceeds from a $550 million bond issuance were advanced to Old Dominion by Smith Barney, Harris Upham & Co., managing underwriter for the bond sale. The bond sale proceeds allowed Old Dominion to retire previous debts with the Rural Electrification Administration, allowing the Clover Project to proceed as planned. Old Dominion president John P. Edwards commented that the bond issuance, "Clears the last significant hurdle for Old Dominion toward retaining our full share in the Clover Project, and we are now looking to complete the project on time and under budget."

THE NEED: Clear and Urgent

Old Dominion will receive 393 megawatts of electricity from its half-share of the plant. A small portion of this power will be used to meet the fast-growing power needs of its co-ops' service territories. However, 300 of the 393 megawatts will be used simply to replace purchase power that will not be available after 1992. The 300 megawatts now being purchased from Allegheny Power Systems will be replaced temporarily by a purchase from Virginia Power beginning January 1993. The Clover Project is the only viable, reliable means of replacing this power and preparing for future growth. Because of permitting delays, the first unit will not be on line until the Spring of 1995. Unit two will be completed during the Spring of 1996.

. COAL: Plentiful, Economical, "Homegrown," Environmentally Sound

Coal is our major domestic energy source. Our nation has 25 percent of the world's reserves, which experts say should last several hundred years. Old Dominion studied all possible fuel sources. Because coal is so plentiful, its cost is stable and reasonable and is not subject to price fluctuations caused by recurring turmoil in the Middle East, Old Dominion concluded that - by far - coal is the most available, economical fuel source, and - most importantly - can be burned in an environmentally responsible way.

To put Old Dominion's environmental commitment in perspective, consider that the annual emissions levels of the Clover Project will be approximately twelve times less than those called for in the stringent Clean Air Act Amendments of 1990.

The primary concern in burning coal is the emission of sulfur dioxide (SO_2), which has been cited by some scientific authorities as a contributor to "acid rain." Most importantly, Old Dominion is committed to preserving the quality of the communities it serves. After all, its member cooperatives are owned by all those they serve. So Old Dominion's environmental commitment is not only good business and good science, it's a matter of serving well the 350,000 consumers who literally own it.

The almost $400 million in advanced pollution-control technology includes a baghouse that will remove over 99 percent of the fly ash. Wet limestone "scrubbers," the region's first for a power plant of this size, will remove at least 94 percent of the sulfur dioxide emissions. The byproducts of the process will be cement-like and deposited on the site in a lined, engineered landfill that will prevent any seepage into groundwater.

WATER SOURCE: Protecting a River's Flow

Any power plant must have water to produce steam to turn the turbines to produce the electricity. On average, the Clover units will withdraw only six-tenths of one percent of the Staunton River's daily flow of almost 200 millions gallons of water. This amount is comparable to using three pints of water from a 55-gallon drum that is refilled every day. By permit conditions, Old Dominion may not withdraw water when the river drops to established levels, ensuring no impact on this precious commodity. Old Dominion will utilize water from an on-site water reservoir during these low-river periods.

THE BUILDERS: Best in the Business

In April 1989, construction contracts were executed among Old Dominion and a consortium of four of the premier power plant builders in the world. This consortium, with nearly 300 years of combined corporate experience in building power plants, consists of Black & Veatch Engineers and Architects, which will design the facility; ABB Combustion Engineering, Inc., which will provide the pulverized coal boilers; Westinghouse, Inc., a household name that will supply the steam turbine generators; and H. B. Zachry Co., which will construct the plant.

ECONOMIC IMPACT: A Powerful Contributor to an Entire Region

The Clover Project will provide immediate, enormous benefits to the economic revitalization of Halifax County and all of south-central Virginia. The timing of the project is especially beneficial because this region did not enjoy the substantial economic growth of the 1980s experienced by northern, central, and eastern Virginia.

During the more than four years of construction, Old Dominion estimates that the approximately 1,417 workers will provide about $14 million to the region in purchases of goods and services. Local workers will be utilized as part of the construction team and will benefit from the construction payroll of $90 million. Most of the 225 permanent employees will be members of the community, and all will benefit from the annual operating payroll of $5 million. Long-term economic stimulation will result from the $3 million per year Old Dominion and Virginia Power will pay in county taxes. Short-term and long-range, the project will be a needed economic boost for the entire region.

THE BOTTOM LINE: Positive Impact for Consumers

Consumers rightly expect three things from their electric service: that it be **reliable**, that it be **affordable**, and that it be generated in an **environmentally responsible** manner. The Clover Project will meet all of these expectations and help stabilize electric bills for the long term.

SITE SELECTION: Old Dominion conducted an exhaustive search over 60,000 square miles in a four-state area to select the best site to minimize impact on the environment, to maximize economic benefit to the local community, and to ensure access to plentiful water and a rail line to provide coal. Clover, Virginia, is it.

POWER SUPPLY OPTIONS: Old Dominion carefully studied all power supply options, including purchases from investor-owned utilities or cogenerating units, before concluding that building its own power plant with Virginia Power is - by far - best for its consumers. All possible fuel sources were studied before Old Dominion found that coal is the most reliable, economical, and environmentally sound fuel now and well into the future.

COOPERATION: Old Dominion has worked closely with local, state, and federal officials and regulatory agencies - as well as citizens' groups - to address all concerns. Its expression of environmental concern is not just lip service; nearly $400 million in pollution-control equipment attests to the deep and abiding commitment of Old Dominion to build the cleanest plant possible.

The benefit for consumers is obvious: the Clover Project will provide the **cleanest**, most **reliable**, and most **economical** electricity possible for the 336,000 homes and businesses served by Old Dominion's 12 member cooperatives. In its use of domestic fuel, its stringent environmental controls, and its long-term benefit to citizens in Southside Virginia and throughout our three-state area, the Clover Project will be a stellar model for other utilities to emulate as the United States seeks energy independence by the 21st century.

Clover Project
Statistical Facts

1. 98,690 cubic yards of concrete for both units = 385 miles of sidewalk, 4 feet wide by 4 inches thick (Bristol to Hampton)

2. Total structural steel = 23,634 = (47,268,000#) = 7,280 mid- size rail cars

3. Total earthwork = 1.2 million cubic yards = 1 mile square X 1' deep

4. Total electrical wiring = 5,800,000' = 1,100 miles (Richmond to Kansas City)

5. Total High/Low Pressure Piping = 862,808' = 163 miles (Manassas to Newport News)

   Total underground piping = 135,000' = 25.5 miles (site to South Boston and back)
   Total number of valves = 15,100
   Total number of fittings = 250,000+

6. Total feet of electrical ductbank = 275,000' = 52 miles (Roanoke to Lynchburg)

7. Total feet of Material Handling Conveyor Belting = 15,000' = 2.8 miles

8. Total cubic yards of sand = 204,480 cyds. (115 acres X 1' deep)

9. Total miles of roads on site = 7.0

10. Raw Water Storage Pond = 68 acres, holds 310 million gallons of water

11. Receive 11,000 tons of coal/day, burn 157 tons/unit/hr. @ 85% load
    Storage = 580,000 tons for both units

12. 40,850 cubic feet of air make up to boiler

13. 220,000 gallons/min. of water circulating through cooling tower and 4,800 gallons/min. of river make up water

14. Total acres of site = 1,836 acres with approximately 460 acres being utilized.

ESTIMATED PAYROLLS

- **Co-owner ODEC from 1992-1996 will average about $358,000 per year (subject to very slight increase). Co-owner Virginia Power's operation staff by 1996 will build to 217 people who will live in the vicinity. Staffing will start with seven in 1992; 55 in 1993; 127 in 1994; 190 in 1995; and 217 in 1996. Total payroll will grow from an estimated $1.3 million to approximately $5 million in 1996.**

- **Engineers Burns & McDonnell's payroll for 1992 is approximately $1.3 million. Staffing will grow from 13 to 19 or 20 by the end of 1993. Payroll will be approximately $2.3 million. Burns & McDonnell's job will be completed by June 1996.**

- **Consortium: H. B. Zachry's payroll for wage earners will amount to roughly $14.4 million and 907 people in 1992; $25.2 million and 1,417 people in 1993; $24.5 million and 1,027 people in 1994, $15.6 million and 437 people in 1995; $3.3 million and 77 people in 1996. Total for project: $83 million.**

- **H. B. Zachry will utilize local sub-contractors for labor and materials within the site's 100 mile radius. Projected total pay is estimated to be $25 million. Contractors include, for earthwork, Mason Day; for HVAC systems, CCI; for warehouses, J. E. Burton; and others for various suppliers of lumber, office supplies, vehicle fuel and repairs, etc.**

- **Note: These numbers do not include influx of personnel for meetings at the site, sales personnel, vendor reps, state or federal compliance personnel, relatives or other visitors.**

- **As has been stated before, H. B. Zachry intends to utilize personnel within a 100 mile radius of the site. As of the end of July 1992, 79 percent of the total work force, or 537 of 680 people, were hired within a 100 mile radius of the plant site.**

- **Taxes generated by the project are estimated to be approximately $2 million in 1993 and will increase to over $3 million annually when the facility goes into full operation by 1996.**

For further information about the Clover Project, contract the Clover Project Community Relations Office, Old Dominion Electric Cooperative, P. O. Box 248, Clover, Virginia, 24534, or call 1-800-828-1895.