REPORT OF THE

Virginia Coal and Energy Commission

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

Senate Document No. 17

COMMONWEALTH OF VIRGINIA
RICHMOND
1986

MEMBERS OF COMMITTEE

Daniel W. Bird, Jr., Chairman
A. Victor Thomas, Vice Chairman
James F. Almand
Walter C. Ayers
John C. Buchanan
L. Blaine Carter
Charles J. Colgan
J. Paul Councill, Jr.
Cynthia J. Dahlin
Jerry D. Duane
Herbert O. Funsten, Ph.D.
Virgil H. Goode
Glenn B. McClanan
Everard Munsey
Frank W. Nolen
Lewis W. Parker, Jr.
Ford C. Quillen
Alson H. Smith, Jr.
John Watkins
Richard A. Wolfe, Ph.D.
Donald L. McGlothlin, Sr., Ex-Officio Member

STAFF

Legal, Research, and Clerical

Michael D. Ward, Staff Attorney
Martin G. Farber, Research Associate
Kally A. Noblitt, CPS

Report of the
Virginia Coal and Energy Commission
To
The Governor and the General Assembly of Virginia
Richmond, Virginia
January, 1986

To: Honorable Gerald L. Baliles, Governor of Virginia,
and
The General Assembly of Virginia

I. INTRODUCTION

The Virginia Coal and Energy Commission was established as a permanent agency of the Commonwealth in 1979. Since that time, it has sought in a number of ways to carry out its charge to "study all aspects of coal as an energy resource and... to stimulate, encourage, promote, and assist in the development of renewable energy resources..." (§ 9-145.1 of the Code of Virginia). This document is submitted as the Commission's report on its 1985 activities.

The Commission met twice during the year. It received testimony regarding the following issues: high- and low-level radioactive waste, the status of the coal industry in Virginia, and new liquid coal technologies. This report also discusses the deliberations of the Commission's subcommittees.

II. COMMISSION DELIBERATIONS

A. HIGH- AND LOW-LEVEL RADIOACTIVE WASTE

The Commission received a briefing from staff of the Department of Energy's Chicago operations office on the Civilian Radioactive Waste Management Program and the Crystalline Repository Project. Dr. Paul Kearns of the Department of Energy (DOE), reported that the Project is evaluating potential sites for the storage of high-level nuclear waste. The Crystalline Repository Project is in response to the Nuclear Policy Act of 1982 which mandated that a schedule be established for siting, construction, and operation of repositories, with the first repository to be operational in 1998. Dr. Kearns explained that a very comprehensive screening procedure was being conducted to determine possible sites for the first waste repository. The first repository will likely be located in one of the western states. He pointed out that the crystalline rock regions in Virginia are included as possible sites for the second repository. It is anticipted that this repository will be in operation by the year 2000. Dr. Kearns went on to describe the factors which could disqualify a site from consideration (protected lands, population distribution and density, deep mines and quarries). A timetable was presented for action on the project and the Commission was informed that DOE would recommend three sites for the second repository to the President by 1991.

The Department of Energy briefing was followed by a presentation on low-level radioactive waste by Barbara Wrenn, Executive Director of the Solid Waste Commission. She explained that this type of waste consisted mainly of trash, tools, and protective clothing which had been exposed to high levels of radiation. Most of Virginia's low-level waste is being transported to a disposal site at Barnwell, South Carolina. Since this site is scheduled to be closed in 1992, Virginia has joined seven states to form the Southeast Compact. The objective of the Compact is to select a regional disposal site to replace the Barnwell site. Ms. Wrenn noted that the Compact was facing political difficulties in achieving ratification by Congress. Failure to ratify could result in each state having to develop its own disposal site. In light of this, the Commission unanimously approved a motion to draft a resolution (Appendix A) in support of the Southeast Compact and urging Congress to pass the appropriate authorizing legislation. At the time this report was written, Congress had ratified the Southeast Compact, but the bill had not yet been signed by the President.

Representatives of Virginia Power described their radioactive waste management program. According to company officials, storage of spent fuel was nearing capacity at the Surry Plant and the North Anna plant was approximately at one-half capacity. Virginia Power considered several options for additional storage space and selected a reracking arrangement (doubling upon the current racks of spent fuel) at North Anna and a dry cask program at Surry. The casks are large metal structures that hold seventeen tons of spent fuel rods when full and are located above ground on concrete pads. Five of these casks have been ordered for the Surry operation.

In addition to managing the high-level spent fuel, Virginia Power has begun to control the amount of low-level wastes it produces. Clothing and equipment which are exposed to radiation are compacted and stored in drums or boxes for shipment. A company spokesman noted that 80% of Virginia Power's low-level waste is shipped to the Barnwell site, with approximately 170 of these shipments being made each year.

B. COAL LIQUID FUEL TECHNOLOGIES

The focus of the Commission's September 26, 1985, meeting was a briefing on the latest developments in the field of coal liquid fuel technology. Dr. Richard Wolfe, Vice President for Research and Development at United Coal Company and a member of the Commission, discussed recent developments in the field of coal liquid applications. He explained that the liquid form of coal can be a viable alternative to the use of oil. In liquid form, coal is cleaner and cheaper than regular heating oil, and can be transported at less cost than bulk coal. Dr. Wolfe noted that United Coal Company is involved in some innovative applications of coal liquids and coal-water mixtures. In addition, some of their research indicated that these processes are resulting in significant reductions in the amount of ash.

As part of the tour of the Company's research facilities, Commission members saw demonstrations of the use of coal liquids in the operation of a diesel engine, a home furnace boiler, and in gas turbines. Dr. Wolfe forsees increased commercial use of coal liquids. He also explained a new "coal dryer" machine which could eventually de-water coal from a slurry pipeline. Dr. Wolfe concluded by predicting the development of coal refineries which would process and ship coal liquids in vast quantities.

Mr. Peter Hepp, Director of Commercialization for Atlantic Research Corporation, described his company's work in the area of coal-water mixtures. The mixture (ARC-COAL) is 70% coal, 29% water and 1% additive and is being produced at a rate of 600 barrels per day. It is presently being tested in industrial boilers in several countries. While the commercialization of this product is difficult at this time due to the declining price of oil, the market incentives should exist in the future for coal-water uses. Mr. Hepp suggested that the Commission give consideration to a 10% investment tax credit for research and development of coal. Such an incentive might further assist in the development of coal liquid technologies. West Virginia has, in fact, passed such an investment tax credit.

Delegate Ford C. Quillen, chairman of the Commission's coal subcommittee, emphasized the importance of these new technologies. He recommended that the Commission pass resolutions which would set forth the following:

1. VPI should conduct a pilot project using coal liquids in place of oil in existing boilers (Appendix C).

2. A special study should be undertaken to assess the feasibility of using Virginia coal in all state facilities (Appendix B).

Delegate Quillen, in discussing Resolution No. 1, suggested that United Coal Company could provide the coal liquids VPI-SU would need to carry out the project. If this project is successful, it will serve as an example for all state facilities to convert their current oil burning systems to accommodate coal liquids.

C. COAL MARKET STUDY

Dr. Walter Hibbard and Mr. Ray Chisolm of the Virginia Center for Coal and Energy Research have completed a federally funded study of the Virginia coal market. Their findings suggest that the decline in the Virginia coal market in recent years is attributable to a number of factors.

1. The significant decline in the steel market has resulted in reduced demand for Virginia's high quality metallurgical coal.

2. Virginia steam coal has a higher price at the mine than Kentucky's or West Virginia's due in part to the significant number of deep mining operations in Virginia which increases production costs.

3. Railroad transportation costs are higher in Virginia than in Kentucky and West Virginia.

In providing a status report of the Virginia coal market, Mr. Chisolm informed the Commission that the production of Virginia coal was up approximately 22% for the first three

quarters compared to the same period last year. West Virginia coal production is down 11% and Kentucky is down 14% over the same period. This significant increase over a year ago was at first thought to be a result of the selling of coal which had been stockpiled. However, additional research suggests that it may be due to the increase in coal "longwall" operations.

The study concludes "that since coal quality from all states is similar, then the delivered cost is the key to steam coal sales to Virginia's electric utilities." "Coal from eastern Kentucky and West Virginia was provided at a lower cost than coal from Virginia." (Final Technical Report, Investigation of the Virginia Coal Industry, Executive Summary. Virginia Center for Coal and Energy Research, July 15, 1985.) It suggests that future growth will require that Norfolk Southern meet CSX's transportation costs if Virginia coal is to compete on the basis of delivered costs with West Virginia and eastern Kentucky.

III. SUBCOMMITTEE ACTIVITIES

A. ENERGY PREPAREDNESS

The Energy Preparedness Subcommittee looked into a wide range of issues, including public and private weatherization programs, federal and state emergency preparedness, utility plans for future electrical generation, and Virginia's participation in national energy conservation awareness projects.

The subcommittee continued its review of how weatherization services are provided. During the year, presentations were made by both private and public service agencies. The subcommittee received an update from the Department of Social Services on their weatherization program. Since the program's inception, 38,201 homes have been weatherized. During 1984, approximately 5,580 residences received this service. This represents an increase of about 21% over the 1983 total. In 1984, an average of $580 was spent on each residence. The subcommittee was informed that Congress has made changes in the Department of Energy's program, raising the spending ceiling to a $1,600 average per house.

The State Department of Social Services is working with the Division of Energy to develop a new energy audit procedure. It is anticipated that this will enable the Department to determine which weatherization measures will be most effective for a particular residence.

The state's weatherization program receives funds from two federal agencies: the Department of Energy and the Department of Health and Human Services (HHS). The HHS energy assistance block grant allows up to 15% of the funds targeted for fuel assistance to be allocated for weatherization activities. In the past, the state has chosen to expend approximately 9% on weatherization. Staff from the Department indicated that this year 12% is expected to be allocated for weatherization. The subcommittee, feeling that weatherization represents the best long-term approach to meeting the fuel needs of our low income and elderly citizens, sent a letter to the Board of Social Services requesting its members to consider authorizing the transfer of the maximum allowable 15%.

The subcommittee also heard testimony from two other providers of weatherization services. Ms. Jo Mullendore, Supervisor of Residential Services for Potomac Edison, which serves 5,500 residential customers in Northern Virginia, explained that a significant portion of these customers are low income. They spend up to 25% of their income on utility costs. In an effort to assist them, as well as reduce the number of delinquent accounts and reduce winter peak loads, the company has developed a program known as "WRAP" (Weatherization Residential Assistance Program). The specific objective of the program is to lower energy demands in the low income homes by at least 1/2 a kilowatt for each household. Services are targeted, with the help of the Department of Social Services, to those customers receiving fuel assistance. So far, 120 families will receive service with the utility monitoring the kilowatt savings using regular meters and some demand meters.

Several private firms have entered the weatherization business, offering new approaches for financing. One such company, House Docktors, operates via private contracts. A company official explained that they will perform a free energy audit to determine how the house can be improved to reduce heat loss. The company then offers a special 50/50 energy savings program along with a warranty. The first "50" represents 50 energy and hot water savings tips and actions, and the second 50 represents 50% in costs which will be saved each year in reduced energy loss. The warranty states that the savings in energy cost within five years will equal 100% of the expense to install the energy saving devices. The changes which are recommended include wrapping hot water tanks and pipes, installing cycled thermostats and foundation vents, and closing air exchanges from walls. It is estimated by the company that most home owners

will save $400-600 a year in energy costs.

The subcommittee received a briefing by the Division of Energy on the federal and state roles in the event of a fuel supply emergency. The federal government's role could best be described as a "free market response," where the price of fuel would determine supply allocation. This would be supplemented by the use of the Strategic Petroleum Reserve which has enough fuel stored to meet the country's needs for at least 110 days. In those instances where the price might cause undue hardship, many in Congress have supported an economic response package in the form of block grants to the states. The administration has yet to endorse such a proposal.

At the state level, the Department of Emergency Services and the Division of Energy have developed a plan which establishes a management structure which could be instituted in an emergency. The present Emergency Service Laws give the Governor specific powers to deal with an energy shortage. For instance, a "set-aside" program could be put into place which directs petroleum companies to make specific allocations to various geographic areas and sectors of the economy. According to state officials, present emergency laws are sufficient to deal with a fuel shortage.

The subcommittee also looked into how utilities are planning to meet future energy needs. Representatives of Virginia Power informed the subcommittee that it has undertaken a study to assess the most cost effective alternatives for meeting consumer demand in the 1990s. This study included demand assessments of customer usage and an evaluation of the supply side potential of various power generating fuels and technologies. The demand side studies focused on such approaches as load management, cogeneration, and conservation. Their major conclusion was that the most cost effective approach consists of a combination of conservation technologies and load management options. The benefit gained from these two strategies does not lie in terms of fuel savings but rather controlling the growth of demand and avoiding the construction of additional generating capacity.

The subcommittee was told that such programs as the energy saver homes, the add-on heat pump, winter heater load management technologies, and curtailment were approaches that Virginia Power will vigorously promote. The company has already certified 11,000 homes as being "energy savers" with a target of 257,000 by 1999. The add-on heat pump is used in conjunction with gas or oil furnaces, thereby reducing the demand for electric heat during the winter. Virginia Power hopes to identify 100,000 customers by 1999. In describing the water heater load management program, company officials indicated that 67,000 homes are presently participating with a goal of 455,000 homes by 1999. This would mean that four out of ten electric water heaters would be controlled by the Virginia Power system. Customers who participate in the program receive a monthly reduction in their bill of $4 in exchange for allowing the utility to interrupt their service.

On the supply side, Virginia Power investigated the potential of small-scale hydropower, alternative fuels, and advanced generation technologies. Their small-scale hydropower study reviewed over sixty sites in the company's service area and seven were selected for detailed analysis. Only two were judged as economically and environmentally sound. A project at the company's North Anna Power Station will have a capacity of 870 KW and produce approximately four million kilowatt hours annually. Improvements to the existing Cushaw Plant will produce an estimated five million kilowatt hours annually.

Virginia Power looked at the possible use of wood, peat, municipal solid waste, and coal-water mixtures as substitutes for fossil fuels. It concluded that generating units fueled with wood, peat, and coal water mixtures do not appear economically attractive in the near term and concentrated supplies of solid waste are limited in amount and availability. Virginia Power also studied such advanced generating technologies as fuel cells, solar photovoltaics, wind turbines, and coal gasification combined cycle systems. While each has significant potential, the most promising for commercial use during this century is the coal gasification combined cycle systems. The advantage of this technology is that capacity can be added in small increments and elements of the technology can be adopted in stages. It also has the environmental advantages of lower water usage, smaller land requirements, low emissions, a more efficient plant, and the elimination of the sludge which results from the flue gas scrubbers required on conventional coal plants.

Finally, the subcommittee received a report from the Division of Energy on what the Commonwealth was doing to educate consumers as to how to conserve energy. The subcommittee endorsed two public awareness programs which focus on energy conservation. American Energy Awareness Week, which took place the week of October 20-27, 1985, was a statewide effort to provide information to all consumers through schools, local governments, and extension offices,

as to what measures individual consumers could take to conserve energy and reduce their energy costs. Virginia will also participate in National Energy Education Day (NEED) in March, 1986. The NEED program is aimed at students and provides an energy-related curriculum to those students participating in a series of educational seminars. The Coal and Energy Commission endorsed the program and will request that the General Assembly do likewise (Appendix D).

B. OIL AND GAS

The subcommittee heard a presentation by Mr. Richard Counts, an attorney in Abingdon who specializes in oil and gas law, on the recent activity in the natural gas industry in Virginia. Mr. Counts stated that because of Virginia's location, it was in a good position to supply natural gas to eastern markets at a low rate. He presented information which showed the southwestern part of Virginia as part of the "Eastern Overthrust Belt," a geographical zone which is rich in natural gas reserves. Mr. Counts estimated that Virginia has on hand approximately 70 to 80 million cubic feet of natural gas reserves. He noted that many new wells have been drilled over the past two years and a 200% increase in natural gas production in Virginia is anticipated for 1985. He predicted substantial industry development of natural gas in Southwest Virginia and suggested that Virginia work toward developing a more extensive market for the use of natural gas. (See Appendix F.)

C. URANIUM

Mr. Paul Councill, Chairman of the Uranium Subcommittee, reported to the full Commission at its September 26, 1985, meeting that the uranium bill was withdrawn from the 1985 Session because of its complicated and technical nature. At that time, he stated that the chances of the bill being re-introduced in 1986 are questionable, but Mr. Councill expressed hope that the General Assembly will eventually resolve the question.

D. RENEWABLE ENERGY SUBCOMMITTEE

The Renewable Energy Subcommittee held no scheduled meetings this year, but inquiries were made regarding several issues which the subcommittee has been involved with in past years. The following information serves to update those issues.

1. The Longwood College Wood Burning Project

Staff was directed to follow up on the Longwood College Wood Burning Project which was put into full operation in 1985. In September of 1984, the Renewable Energy Subcommittee toured the Longwood College Physical Plant to observe work being done to two boilers so that wood chips and sawdust could be burned as fuel.

The conversion project was completed in early February of 1985. Testing took place at that time under the direction of State Building and State Air Pollution Control Representatives. Two weeks of testing resulted in some minor modifications, and since that time, the college has relied almost entirely on wood as a fuel source.

Mr. Wadi Williams, Director of the Physical Plant, stated that sawdust has been the primary fuel source; however, over the last two to three months of 1985, a cutback in furniture production in Southside Virginia resulted in the loss of the college's main sawdust supply, so wood chips are being utilized instead. He also remarked that the two converted boilers have been working very well in producing the amount of energy needed.

In February, 1986, the college plans to conduct a test run by burning coal in the wood burning units. Mr. Williams stated the units are easily adaptable to burn coal, and if the tests are successful, coal will be the primary back-up fuel with the dependence on oil being virtually eliminated. Detailed cost savings for 1985 are not yet available, but Mr. Williams estimated that the total fuel costs of the college are being reduced from almost $600,000 per year down to around $300,000, or roughly one-half of the total fuel costs in previous years.

2. Photovoltaic Cells

The subcommittee has heard testimony in past years regarding the potential of using photovoltaic cells to harness solar energy. The production of these cells or modules represents a rapidly growing industry as evidenced by the fact that worldwide production rose by 1/3 between 1983 and 1984. This is still a very new technology and commercialization of the cells will be more prevalent once the modules are made more efficient and when the cost of the technology becomes lower.

Virginia Power is undertaking a photovoltaic power system test on three acres of land at their North Anna Power Station. This pilot project costs about 1 million dollars and site work began on September 16, 1985. The site construction is to be completed by January 31, 1986, and under optimum conditions, the panels which hold the cells can produce about 475 megawatt hours per year, or enough power to provide electricity to about 30 homes. The Renewable Energy Subcommittee and the Commission has been invited to observe this project and hear a briefing on project operations sometime this spring.

3. Solar Tax Credit

Chapter 324 of the 1982 Acts of Assembly established a 25% tax credit for renewable energy sources expenditures made in 1983 and 1984. The Act required that in 1985, the tax credit be reduced to 20%, lowered to 15% in 1986, and to 10% for 1987. Estimates are not yet available for claims made during 1985, but it appears that public awareness in this program has risen since 1983. Figures show that there were 1,415 claims submitted under the program totaling $1,096,544 and 1984 figures show 3,811 claims were made totaling $3,104,071.

4. Solar Home Grant Program

In late 1984, the subcommittee was briefed on the Virginia Solar Home Grant Program, a joint effort of the Virginia Housing Development Authority and the Virginia Energy Division. This program awards grants of up to $5,000 for new homes with passive or active solar home designs which effectively utilize solar energy for space heating and cooling systems and domestic hot water systems. In 1985, 336 grants were made totaling $1.4 million. Average grants were about $4,000 per home. There is $110,000 left in the Grant Fund which is expected to end in February, 1986.

E. COAL

The Coal Subcommittee initiated the September meeting of the full Commission in Abingdon. On behalf of the subcommittee, Delegate Quillen recommended to the Commission the resolution supporting a pilot project at VPI using coal liquids (see Appendix C), and the resolution to study the feasibility of using Virginia coal in all state facilities (see Appendix B).

The Coal Subcommittee also requested the appearance of Dr. Walter Hibbard and representatives of the Virginia Center for Coal and Energy Research before the Commission to provide updates on the coal market situation in Virginia.

IV. RECOMMENDATIONS

The Virginia Coal and Energy Commission recommends the following.

1. The Coal and Energy Commission should undertake a study to determine the feasibility of using coal in state facilities (Appendix B).

2. VPI-SU should develop a pilot project using liquid coal in place of oil in existing boilers (Appendix C).

3. The Coal and Energy Commission should forward a resolution to the 1986 General Assembly endorsing the National Energy Education Day project (Appendix D).

4. The Coal and Energy Commission should undertake a study of the effectiveness of tax exemptions for alcohol fuels (Appendix E).

Respectively submitted,

Daniel W. Bird, Jr., Chairman
A. Victor Thomas, Vice Chairman
James F. Almand
Walter C. Ayers
John C. Buchanan
L. Blaine Carter
Charles J. Colgan
J. Paul Councill, Jr.
Cynthia J. Dahlin
Jerry D. Duane
Herbert O. Funsten, Ph.D.

Virgil H. Goode
Glenn B. McClanan
Everard Munsey
Frank W. Nolen
Lewis W. Parker, Jr.
Ford C. Quillen
Alson H. Smith, Jr.
John Watkins
Richard A. Wolfe, Ph.D.
Donald A. McGlothlin, Sr., Ex-Officio Member

APPENDIX A

VIRGINIA COAL AND ENERGY COMMISSION

A Resolution of the Virginia Coal and Energy Commission in support of the Southeast Interstate Low-Level Radioactive Waste Management Compact and memorializing Congress to enact consenting legislation to ratify the Compact.

WHEREAS, the Congress of the United States, by enacting the Low-Level Radioactive Waste Policy Act (P.L. 96-573) in 1980, has provided for and encouraged the development of low-level radioactive waste compacts as a cooperative effort in disposing of such wastes; and

WHEREAS, the Southeast Interstate Low-Level Radioactive Waste Management Compact, hereinafter referred to as the Southeast Compact, was approved by the 1983 Virginia General Assembly; and

WHEREAS, the eight member states of the Southeast Compact recognize that the management of low-level radioactive waste is handled most effectively on a regional basis; and

WHEREAS, disposal of low-level radioactive wastes at the currently operating regional facility in Barnwell, South Carolina will continue to operate only until 1992; and

WHEREAS, the Southeast Compact Commission, which was created by the Southeast Compact, has been actively researching the type and number of low-level waste facilities which are needed and has prepared guidelines for procedures and siting criteria for identifying the host state or states for new regional facilities; and

WHEREAS, explicit Congressional consent is necessary for full implementation of the Southeast Compact and new regional facilities, whereby the eight member states can efficiently and effectively manage low-level radioactive waste in a collective fashion; and

WHEREAS, HR 1267, granting Congressional authorization of the Southeast Compact, is awaiting action by Congress; now, therefore, be it

RESOLVED That the Virginia Coal and Energy Commission memorializes the United States Congress to enact HR 1267, thereby consenting to the Southeast Compact and ensuring coordinated management of low-level radioactive wastes in the southeast region of the United States; and be it

RESOLVED FURTHER, That the Commission staff is directed to send copies of this resolution to all members of the Commonwealth's Congressional delegation.

Agreed to by the Commission on June 24, 1985.

APPENDIX B

LD4016301

D 12/17/85 M. FARBER C 12/19/85 llh

HOUSE JOINT RESOLUTION NO. 107

Requesting the Virginia Coal and Energy Commission to study the use of coal in state facilities.

WHEREAS, coal constitutes one of Virginia's most vital resources with over 450 Virginia coal mines producing 40 to 50 million tons of coal annually, and employing directly in coal mines over 10,000 persons; and

WHEREAS, in the last six years, over 5,000 people have been displaced from employment in the coal mines because of automation and the declining market for coal; and

WHEREAS, many coal companies have gone out of business, resulting in especially high unemployment rates in southwest Virginia; and

WHEREAS, since Virginia is one of the largest coal- producing states in the country, the Commonwealth of Virginia has an obligation to support the coal industry and should make a commitment to the coal industry and the people of southwest Virginia; and

WHEREAS, Virginia coal is generally of high quality with a low sulfur content that produces clean, efficient, and reliable steam generation for power plants; and

WHEREAS, coal is the least expensive fuel compared to burning natural gas or Number 6 fuel oil; and

WHEREAS, state facilities should set examples for the rest of the Commonwealth by using coal mined in Virginia, thereby promoting the entire coal industry in Virginia and benefiting the Commonwealth economically; now, therefore, be it

RESOLVED by the House of Delegates, the Senate concurring, That the Virginia Coal and Energy Commission study the feasibility of using Virginia coal in new and existing state facilities. The Commission shall be assisted in its work by the appropriate state agencies.

The Commission shall report its findings to the 1987 Session of the General Assembly.

APPENDIX C

VIRGINIA COAL AND ENERGY COMMISSION

A Resolution of the Virginia Coal and Energy Commission requesting VPI & SU to conduct a pilot project utilizing coal liquids.

WHEREAS, research and technological development in the area of coal liquids has greatly increased in recent years; and

WHEREAS, commercial utilization of coal liquids continues to expand and coal liquids have come to represent a viable alternative to the use of oil; and

WHEREAS, in liquid form, coal is cleaner and less expensive than regular heating oil and can be transported at less cost than bulk coal; and

WHEREAS, coal liquids are currently being produced in Virginia from Virginia coal and are readily available for research and some commercial applications; and

WHEREAS, VPI & SU, one of the leading coal research facilities in the country, provides on-going support for the coal industry as is evidenced by the work of the Virginia Center for Coal and Energy Research as an arm of the university; now, therefore, be it

RESOLVED That the Virginia Coal and Energy Commission hereby requests VPI & SU to conduct a pilot project whereby coal liquids can be utilized in place of oil in existing boilers. Such a project should serve as an example to other state facilities to convert oil boilers to accommodate Virginia coal liquids where it is determined to be economically feasible; and be it

RESOLVED FURTHER, That copies of this resolution be forwarded to the President of VPI & SU.

Agreed to by the Commission on January 7, 1986.

APPENDIX D

LD0927404

D 01/08/86 M. Farber C 01/09/86 owj

HOUSE JOINT RESOLUTION NO. 141

Endorsing National Energy Education Day (NEED) and encourging the Commonwealth's participation in energy education activities.

WHEREAS, the United States will rely on more varied energy sources to supply its growing energy requirements; and

WHEREAS, the development and wise use of conventional and alternate energy sources will require an energy-educated public; and

WHEREAS, ongoing quality education programs in Virginia's schools and communities will be required to explore the energy education choices for the future; and

WHEREAS, the annual National Energy Education Day, which will occur March 21, 1986, will bring together students, teachers, school officials, and community members to focus attention on the growth of energy education in our nation's schools and communities; now, therefore, be it

RESOLVED, by the House of Delegates, the Senate concurring, That the General Assembly endorses and encourages Virginia participation in National Energy Education Day; and, be it

RESOLVED FURTHER, That in promoting National Energy Education Day, the Virginia Department of Education and the Virginia Division of Energy shall coordinate their efforts in enhancing energy education programs in Virginia's schools by providing educators with information about energy education curricula, resources and activities, by increasing the participation of students and the community in the energy education process, and by recognizing the efforts of schools and energy educators for their time and commitment to energy education; and, be it

RESOLVED FURTHER, That the clerk of the House of Delegates shall transmit a copy of this resolution to the Superintendent of Public Instruction for the Virginia Department of Education and the Director of the Virginia Division of Energy.

APPENDIX E

LD4056105

D 1/10/86 Farber T 1/11/86 smw

SENATE JOINT RESOLUTION NO. 15

Requesting the Virginia Coal and Energy Commission to study the costs and benefits of gasohol as an alternative fuel source.

WHEREAS, in 1984 the United States was importing one-third of its oil, which is the same percentage as in 1973 when the country experienced a significant fuel shortage; and

WHEREAS, proven reserves of oil are being drawn down substantially as the consumption of oil products continues to increase; and

WHEREAS, the situation in the Middle East dictates that the United States continue to develop alternative sources of fuel; and

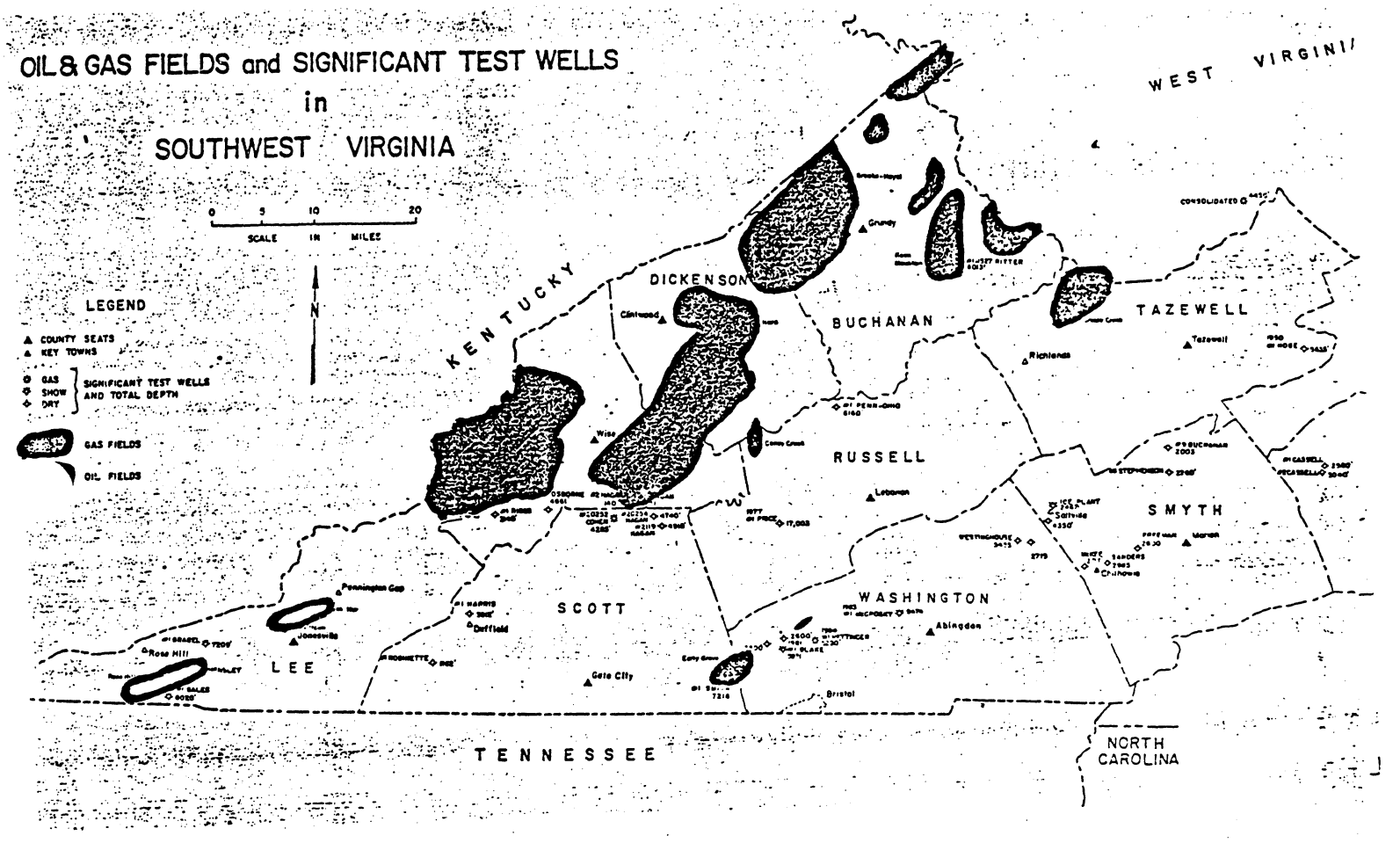
WHEREAS, the Environmental Protection Agency's decision to phase out leaded gasoline, has provided a market for high octane substitutes such as ethanol; and

WHEREAS, the sales of gasohol, which contains 10% ethanol, have tripled in Virginia from 71.8 million gallons in fiscal year 1984 to 214.2 million gallons in fiscal year 1985, with projected sales for fiscal year 1986 of 420 million gallons; now, therefore, be it

RESOLVED by the Senate, the House of Delegates concurring, That the Virginia Coal and Energy Commission study the costs and benefits to the Commonwealth of gasohol as alternative fuel source.

The Commission shall complete its work in time to submit its recommendations to the 1987 Session of the General Assembly.

APPENDIX F


OIL & GAS FIELDS and SIGNIFICANT TEST WELLS
in
SOUTHWEST VIRGINIA
SCALE IN MILES
0 5 10 20
N
LEGEND
COUNTY SEATS
KEY TOWNS
GAS
SHOW
DRY
SIGNIFICANT TEST WELLS AND TOTAL DEPTH
GAS FIELDS
OIL FIELDS
KENTUCKY
WEST VIRGINIA
DICKENSON
BUCHANAN
TAZEWELL
RUSSELL
SMYTH
SCOTT
WASHINGTON
LEE
TENNESSEE
NORTH CAROLINA
Pennington Gap
Jonesville
Rose Hill
Duffield
Gate City
Bristol
Abingdon
Lebanon
Richlands
Tazewell
Grundy
Wise