

Reliability  
Efficiency  
Sustainability  
Affordability  
Diversity

■ ■ ■ Bright Ideas for Delaware's Energy Future



September 2003

Delaware  
Energy  
Task Force  
Report to  
the Governor  
Executive Summary



# Delaware Energy Task Force Members

**In April 2002,  
Governor  
Ruth Ann Minner  
established the  
Delaware Energy  
Task Force through  
Executive Order 31.  
The Task Force's  
mission is to address  
the state's long-term  
and short-term  
energy challenges.**

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## DELAWARE ENERGY TASK FORCE

Dear Governor Minner:

On behalf of the Delaware Energy Task Force I am pleased to present to you our report, Bright Ideas for Delaware's Energy Future. More than 100 participants representing a wide range of public and private sector interests worked together for over a year to prepare this report and its recommendations. This considerable effort resulted from Executive Order 31 signed by you in April 2002, establishing the Task Force and its goals and objectives. These objectives recognize the central importance of energy in Delaware's economy, as well as the need to protect the environment that is the foundation of the state's quality of life. We took for our mission the goals embodied in your Livable Delaware initiative, which addresses the significant environmental issues affecting Delaware's future.

As the recent blackout in parts of the United States and Canada abruptly reminded us, our economic and personal well-being is dependent upon reliable sources of energy. I am pleased to note that reliability was one of the key issues examined by the Task Force and the major recommendations proposed in this area anticipate the ideas currently being discussed nationally in the wake of the blackout.

Our final report addresses the comprehensive set of energy issues your Executive Order outlined. Ground transportation issues were not reviewed. The only issue we addressed within the transportation sector was alternative fuels because other ground transportation issues are being considered by other state working groups.

The Task Force believes this report is the beginning, not the end of the process. The options available to address the short and long-term challenges and opportunities facing Delaware require thoughtful consideration. The Energy Task Force has identified a key set of strategic options, each with its own set of recommendations, for your use in guiding Delaware's energy future. These issues are complex and don't lend themselves to a quick fix, but with the resolve and innovation that is characteristic of the people of Delaware, we are confident that the challenge will be met.

I know I speak for all Task Force participants when I say it was a privilege to serve you in this important effort. Thank you for the opportunity.

With great respect,



W. Michael McCabe  
Chairman

# Why Delaware Needs an Energy Plan

The energy we use every moment of every day is rarely given any thought by most people. Yet Delawareans are fortunate to have a reliable and affordable energy delivery system. But demand for energy services is growing, and the industry that serves our power needs is changing. As a result, the future holds many challenges, and planning now is critical for providing the public with the reliable and affordable energy we require.

Many states are facing energy crises, but Delaware's existing energy system has been sufficient to meet our needs and no energy crisis looms on the immediate horizon. However, rather than wait for a crisis to strike, we must take advantage of the current situation to chart a prudent course that anticipates and addresses both short and long-term issues that will have an impact on our energy future. Delaware faces a series of

challenges that require thoughtful consideration and planning, including:

## Increased Energy Demand

Rapid population growth, particularly in the southern portion of the state, that is higher than national averages, results in increased demand for energy services, which in turn increases the pressure on the energy infrastructure and environment.



## Increased Energy Cost

Geographic, infrastructure and market issues may cause the cost of delivering energy to Delaware and the Delmarva Peninsula to increase, especially with the removal of residential electricity price caps slated for 2005 and 2006.

There is also continuing uncertainty due to on-going utility deregulation and the transformation of the electricity industry on a national level.

## Environmental Issues

Energy generation and use is the single largest contributor to pollution, smog and greenhouse gases. Pressures to meet rising energy demands, if not handled properly, will have an adverse affect on our environment and public health. This Report recognizes these challenges and their possible impact on Delaware's economy, the environment and our citizens' prosperity.

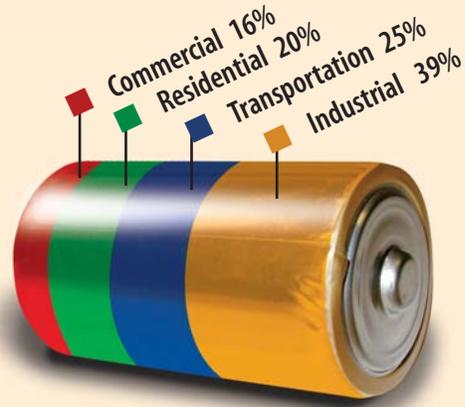
But before we respond to the challenges, let's examine the current status of our energy supply and usage.



## Who Uses Our Energy

The largest consumer of electricity is the industrial sector, in part because Delaware is home to several energy-intensive industries including a major petroleum refinery, chemical plants and large manufacturers. The transportation sector is the second largest and is almost completely dependent on petroleum fuels, mainly gasoline and diesel fuel. The commercial and residential sectors account for the remainder of the state's energy consumption. They include a wide range of end-uses including space heating, air conditioning, water heating and an array of electric appliances and equipment.

Energy is consumed by four sectors:



# Delaware's Energy Profile

Since 1985, in-state generation of electricity has decreased and now approximately 45% of the electricity sold in Delaware is imported from The PJM Interconnection. PJM is the regional transmission system operator, based in Valley Forge, PA. Utilities, electricity wholesalers and independent suppliers depend on PJM to balance the supply and demand of electricity within most of the Mid-Atlantic region, including Pennsylvania, New Jersey, Maryland, Delaware and the District of Columbia. Ninety-seven percent of the PJM electricity sold in DE is generated from non-renewable resources such as coal, oil, natural gas and nuclear.



## ENERGY SOURCES

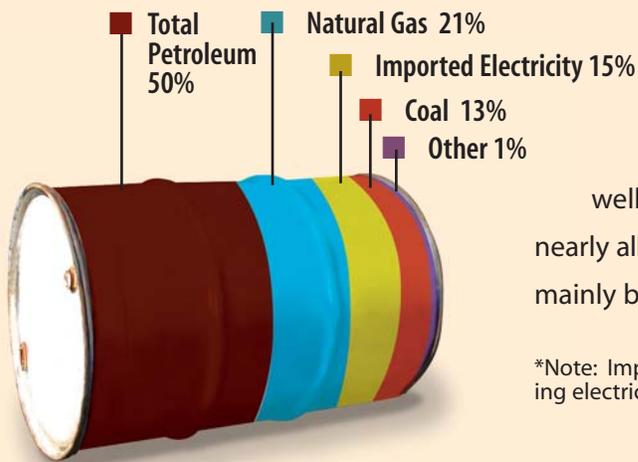
### Electricity

Electricity plays a critical role as an "energy carrier," meaning its main function is to deliver energy to users in a more usable form than the primary energy resources used to produce it. Because of its convenience and versatility, electricity use is growing at a faster rate than any other form of energy.

There are, however, issues related to electricity consumption that have important implications on energy planning. Electricity is generated from other fuels, including coal, oil, natural gas and nuclear energy, and is delivered to consumers through an extensive transmission and distribution system. Converting fuels into electricity involves large losses of energy at power plants. On average, about 70% of the energy in the fuels used to generate electricity is lost. Smaller amounts of energy are lost in

# Where Our Energy Comes From

## Delaware's Energy Usage=280 Trillion BTU's



Delawareans currently consume approximately 280 trillion BTUs of energy in different forms every year - this equals approximately 7.4 gallons of oil per person per day. Eighty-four percent of this energy is delivered directly to Delaware in the form of fossil fuels (coal, petroleum products and natural gas), and is used to fuel homes, businesses, industry and transportation, as well as to generate a portion of the state's electricity. Another 15%, nearly all of the remainder, is delivered in the form of electricity generated mainly by out-of-state fossil and nuclear-fueled power plants.

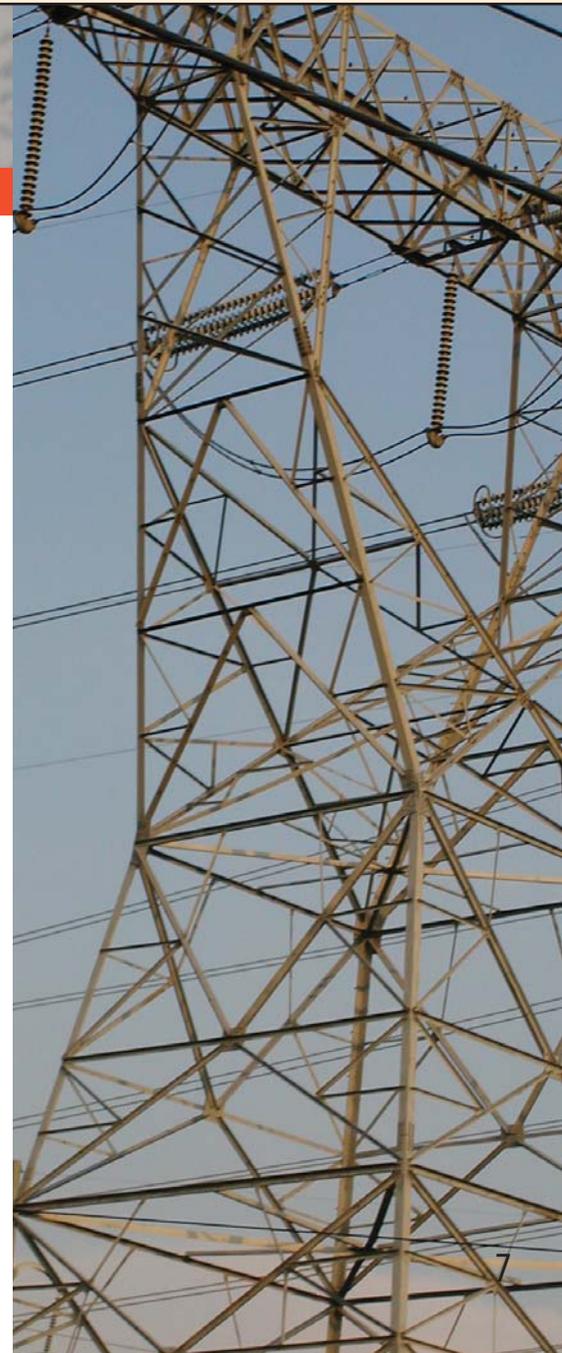
\*Note: Imported electricity does not include losses incurred in generating and delivering electricity from out-of-state power plants to Delaware.



transmission and distribution to customers. The sum of these losses is an important factor in developing recommendations to improve the efficiency of electrical appliances and equipment.

Long-term electricity supply concerns include environmental damage from air pollution, price instability and the danger of supply interruptions.

Potential price increases for electricity are another important concern for energy planners. Since the passage of restructuring legislation in 1999, electricity prices have been capped for residential and small commercial customers of Conectiv Power Delivery and all Delaware Electric Cooperative customers. In addition, Conectiv Power Delivery residential customers received a 7.5% rate reduction. Rate caps will be lifted for the Delaware Electric Cooperative in March 2005, and in May 2006 for Conectiv.





# Forecasts Predict Energy Consumption to Increase

Business-as-usual forecasts indicate that consumption of all fuels and electricity will increase substantially over the next decade. If the business-as-usual forecasts are accepted, Delaware can expect the following increases by about 2010:

- An 18.5% growth in electricity consumption
- An 18% increase in peak electricity demand
- An 8.8% growth in natural gas consumption
- A 6.1% increase in total fuel oil consumption for residential, commercial and industrial use
- A 23% increase in gasoline and other motor fuel consumption

## ENERGY SOURCES continued



### Natural Gas

The use of natural gas is growing, and the wholesale electricity marketplace at the regional level has favored natural gas for most new generation projects. Natural gas is popular because of relative cleanliness and low capital costs of gas-fueled power plants, two features that are very important in the unregulated marketplace. Depending on the location of possible new gas-fueled power plants, a large investment in pipeline capacity may be needed. Natural gas is also used for many other purposes in the residential, commercial and industrial sectors. However, in some of the fastest growing parts of Delaware, natural gas is unavailable for these purposes. Recent forecasts also express concern about short-term natural gas supplies and higher prices.



### Petroleum

The industrial sector in Delaware uses fuels like natural gas and oil directly for many purposes including process heat and steam. Approximately 46% of all primary energy input in Delaware's industrial sector is petroleum for either feedstock or fuel for the Motiva refinery.

In the transportation sector, nearly 383,000,000 gallons of gasoline were consumed in Delaware in 2000. Nearly 97% of this gasoline was used in on-highway vehicles. Diesel fuel consumption totaled over 182,000,000 gallons, split between on-highway, residential, commercial and industrial heating applications.

# Environmental Impacts of Energy Consumption

The National Ambient Air Quality Standards (NAAQS) establishes limits on the concentrations of certain pollutants based on their effects on our health. In most cases, environmental permits limit emissions of certain pollutants from stationary sources such as power plants, and Federal standards limit pollutants from vehicles. However, the use of energy has inevitable environmental impacts on air, water and land. Burning fossil fuel can result in local, regional and global environmental effects including acid rain, high ground level ozone (smog) and global warming. Our health can be affected as well.

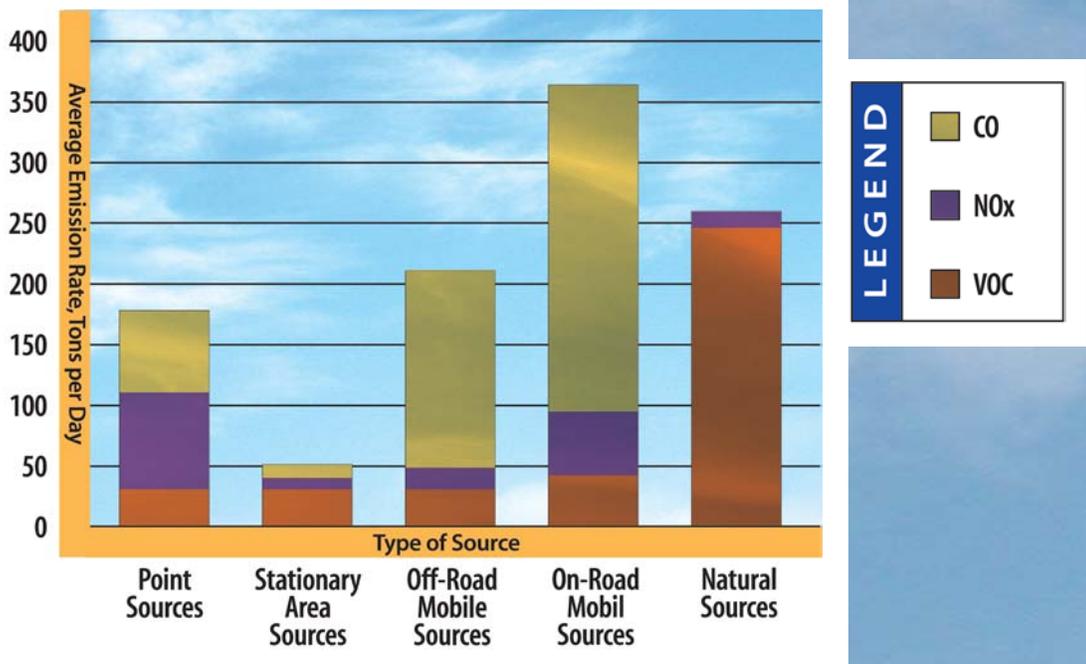
Ground level ozone and other emissions have been associated with a variety of respiratory and heart problems, especially in very young and very old people.

In spite of environmental regulations, New Castle and Kent counties are currently classified

by the Environmental Protection Agency as "severe non-attainment areas" for ozone under the NAAQS. The state is classified as non-attainment in all three counties under the new 8-hour ozone standard, and is likely to violate a new standard for particulate matter (the "PM2.5 standard") in New Castle County.

## How Energy Use Impacts Air Quality

Energy consumed for transportation, electric power generation and industry account for the largest share of on-site air pollutants and toxic emissions. Their total estimated emissions of three specific pollutants, carbon monoxide (CO), nitrogen oxides (NOx), and volatile organic compounds (VOC), is approximately 1,064 tons per day (approximately 388,400 tons per year).



# Bright Ideas

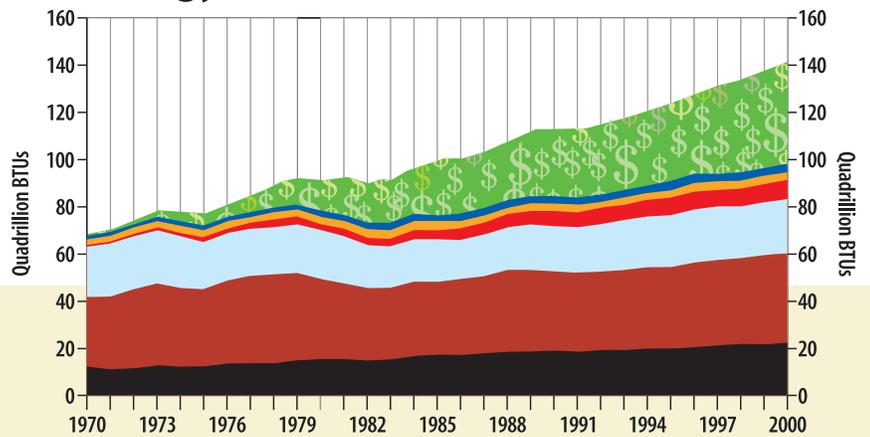
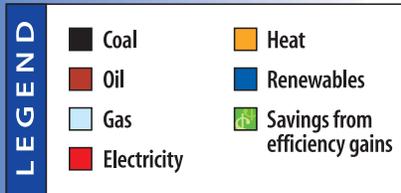
## for Delaware's Energy Future

### **Delaware Energy Task Force Goals**

In accordance with Executive Order 31 issued by Governor Minner, the Energy Task Force addressed the following goals:

- The expansion of the diversity of fuels used to meet Delaware's current and future energy needs.
- The development of conservation programs to reduce the need to build more electricity generation facilities.
- Ensuring that energy infrastructure will meet Delaware's future needs for efficiently transporting energy resources.
- Encouraging producers of clean energy technologies and producers of energy efficient products to locate their business operations in Delaware.

## Energy Growth Rates



## Energy Task Force's Strategies and Recommendations

Thirty years ago the nation faced an energy crisis brought about by an embargo of imported oil. For the first time, supplies of cheap and plentiful oil suddenly disappeared and American businesses and workers suffered the disruptive economic impacts for years. One of the most cost-effective and environmentally sound approaches to finding new sources of energy came in the form of conservation and improved efficiency. As the graph



above shows, energy consumption rose at a much slower pace due to conservation, resulting in real economic and environmental benefits as compared to historic rates of energy growth.

Without an immediate crisis hanging over us, we are at that point again where innovative technologies and improved efficiency can produce major benefits – a new generation of improvements.

With history as its guide, the Energy Task Force was determined to find alternatives to "business

as usual" forecasts and reduce the predicted increases in energy consumption. No single approach solves all the technical, economic, environmental and social issues associated with expanding the energy infrastructure, as each element of the infrastructure comes with its own set of challenges and opportunities.

The Task Force believes that Delaware must ensure the continued availability, reliability and affordability of energy while recognizing and encouraging the need to make transitions in the ways energy is supplied and used. Guided by a set of nine strategies intended to meet the goals of Executive Order 31, the Task Force created recommendations for each strategy. The recommendations were then classified as a high, medium or low priority. The strategies and high priority recommendations are highlighted on the pages that follow. A chart showing the medium and low priorities can be found on pages 24-25.



### ACTION IN PROGRESS

Throughout the report, you will see this symbol which represents actions taken during Task Force tenure.



Reduce environmental and economic costs of energy consumption through improvements in end-use efficiency and conservation.

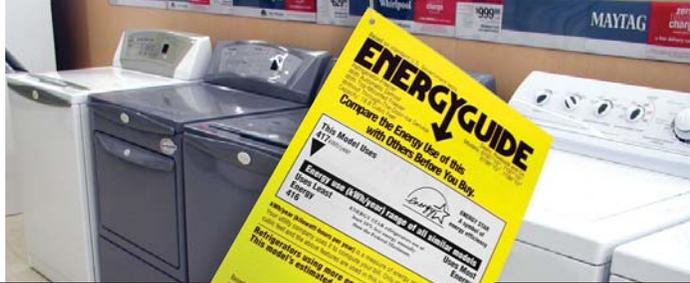
# Strategy 1

End-use efficiency and conservation are critical tools for managing the economic and environmental impacts of energy consumption. Since less than 30% of the energy from fuels used to generate electricity is actually delivered to the end-user because of conversion losses, there is a multiplier effect when electricity is conserved and used more efficiently. Findings indicate that there are many opportunities in the residential, commercial and industrial sectors to increase conservation and efficiency, and a wide range of tools that can be used to do this. There are countless environmental benefits of energy conservation and efficiency. For example, by consuming less fossil fuel, there are fewer emissions and impacts on our air, land and water. In addition, consumers benefit directly from lower energy bills and there is less need for costly infrastructure expansion.

Improvements in energy efficiency and conservation are at the core of Delaware's response to the economic and environmental challenges ahead. The Task Force targeted improvements in end-use energy efficiency and conservation by selecting tools and approaches in several categories:

- Education and Outreach Programs
- Building Codes
- Incentive Programs
- Areas for Further Investigation
- Funding





## RECOMMENDATIONS

### Education and Outreach

- Implement a comprehensive education program to inform residential consumers about how they can achieve the economic and environmental benefits of more efficient energy use.
- Disclose information about fuel sources, emissions, and costs to consumers to better inform their purchasing decisions.
- The state should take full advantage of existing U.S. Department of Energy (DOE) programs targeting industrial efficiency.
- The state should join the U.S. EPA/DOE Energy Star Program in order to take full advantage of the Program's educational, technical and marketing support.
- Develop an aggressive consumer education program to promote Energy Star appliances and equipment to builders and consumers in the Residential and Commercial sectors.

### Building Code

- Update residential and commercial building energy codes last set in 1993 in Delaware to the improved 2000 International Energy Conservation Code.

### Incentive Program

- The state should recognize outstanding energy-efficient design and construction by sponsoring a "Governor's Award."
- Provide direct incentives to encourage the purchase of selected high efficiency residential appliances and equipment.

### Areas for Further Investigation

- To reduce peak loads, a study should investigate the most effective means of implementing demand response/direct load control technologies.



## ACTION IN PROGRESS

### Recognize Green Buildings

The first building constructed to the U.S Green Building Council's "Leadership in Energy and Environmental Design" (LEED) Gold standards was dedicated by PFPC, Inc. in the Bellevue Corporate Center north of Wilmington in June 2003.



## RECOMMENDATIONS

### Funding

Funding sources and mechanisms to pay for energy efficiency and renewable energy programs should be developed to close the gap between the need for funding and available funding, especially if additional incentive programs are established. The following specific recommendations should be considered:

- Consider expanding the number of customers contributing to the Green Energy Fund. Any consideration of expanding the Fund should include all stakeholders.
- Analyze the Green Energy Fund collection rates and incentive levels to determine whether it has adequate revenue to accommodate anticipated demand for programs.
- Pursue other funding sources and mechanisms, such as the Federal Government and non-governmental organizations, to provide resources for energy efficiency, conservation and educational programs.
- Carefully monitor Federal funding opportunities for research and development and, where opportunities match the state's priorities, proposals should be developed and supported.

Low-income households in Delaware spend about 15 to 20% of their total household income on energy. In comparison, other households spend an average of 3.5% on energy. The following specific recommendations should be considered:

- Carefully evaluate the current backlog and anticipated need for low-income weatherization services.
- The state should make maintaining and increasing current Federal weatherization funding levels a high priority.
- The Delaware State Housing Authority should include energy efficiency as a criterion for ranking and selecting multi-family renovation projects.
- The state should investigate participation in the U.S. EPA's Energy Star Bulk Purchasing Program for refrigerators, windows, HVAC and lighting for publicly funded low-income housing renovations.



### ACTION IN PROGRESS

#### Provide Funding for Low Income Programs

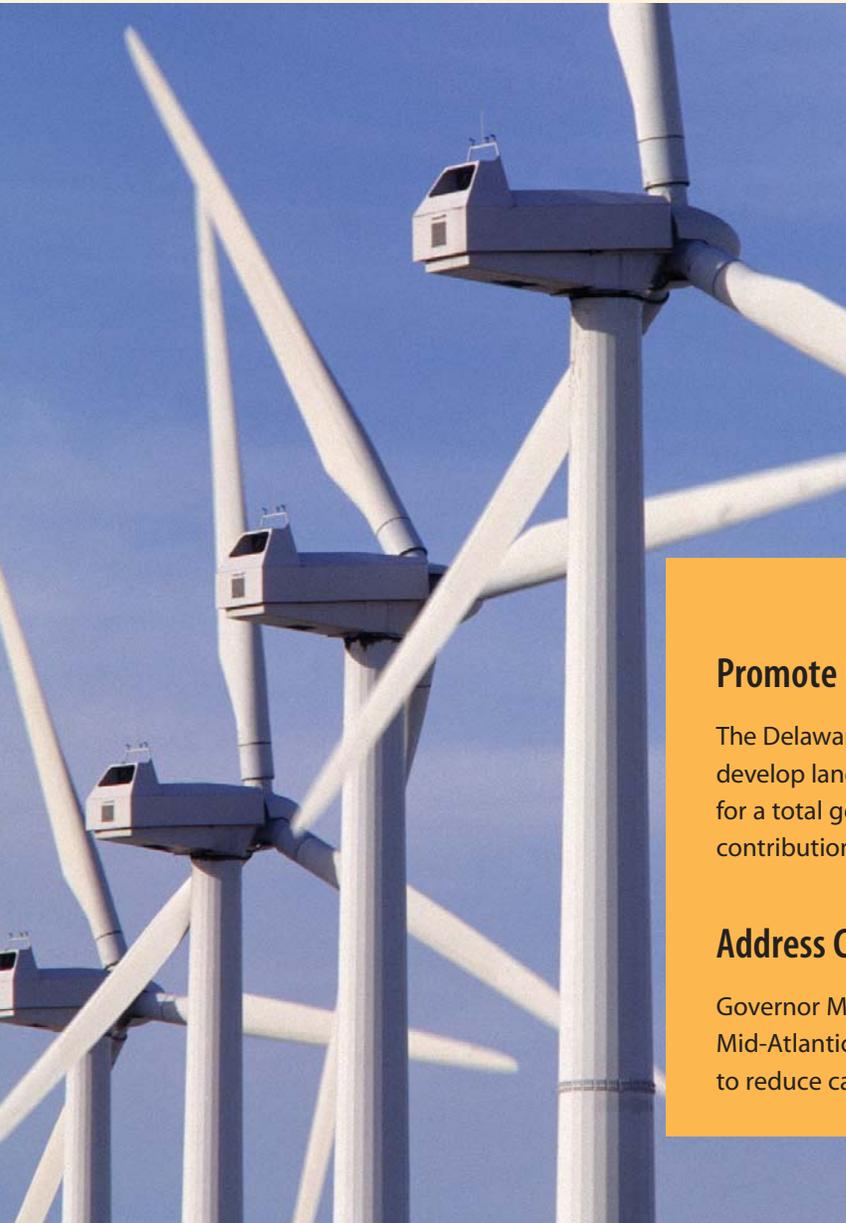
The passage of Senate Bill 93 in June 2003 dedicates \$1,000,000 of existing funds for additional low-income energy programs.





# Strategy 2

■ ■ ■ Reduce the environmental impacts of electricity generation by encouraging clean and renewable energy generation.



Delaware's population, and therefore the demand for electricity, is expected to grow faster than the national average. Conservation and efficiency are critical to managing this growth. However, if a large-scale power plant is needed, there is a priority to ensure that it is clean. Once again, this is a complicated issue.

The decision to build a power plant is largely in the hands of unregulated wholesale power producers responding to market conditions. Since the early 1990s, over 90% of the new generating capacity in the U.S. and in the PJM region has been fueled by natural gas. This is the cleanest of the fuels conventionally used to generate electricity, although there have recently been concerns about the short-term rising prices and availability of natural gas and the negative impacts of depending too heavily on it for power generation. Natural gas delivery to a large power plant may also be an issue, depending on its location.

## ACTIONS IN PROGRESS

### Promote Renewable Energy

The Delaware Solid Waste Authority (DSWA) signed contracts to develop landfill gas from the Jones Crossing and Sandtown landfills, for a total generation of 10MW of power, which is an important contribution to renewable energy production in the state.

### Address Climate Change

Governor Minner joined with nine other Northeastern and Mid-Atlantic states in May 2003 to develop a regional program to reduce carbon dioxide emissions from power plants.

# Strategy 2 continued

Even the cleanest conventional power plants use large amounts of fossil fuels, and have significant environmental impacts. Renewable energy resources that can reduce dependence on fossil fuels for electric power generation, including solar, wind and biomass, are available in Delaware. While the initial costs of renewables are often higher than conventional energy supplies, the benefits of increased renewable use are significant. Renewable energy resource and technology development also have positive implications for economic growth.



## RECOMMENDATIONS

- Develop a "Green Pricing" program for electricity that requires offering electricity customers the option to purchase increments of "green energy."
- The state government should join the U.S. EPA Green Power Partnership Program and should procure a portion of its electricity from renewable resources.
- Re-assess photovoltaic system rebates from the state's Green Energy Fund with a goal of having 500 photovoltaic systems in Delaware by 2010.
- Establish a study group to determine the types and quantities of sustainable biomass resources and their best use.
- Establish a renewable energy goal for electricity consumed in the state.



*Setting a  
New Standard  
for Power  
Procurement*



# Strategy 3

## Reduce the economic impacts of transmission congestion.

Delaware and the Delmarva Peninsula are uniquely affected by location and geography. The current pricing structure within the PJM Interconnection results in relatively higher electricity costs on the Delmarva Peninsula compared to the rest of the PJM region. This is a very complicated issue related to the configuration of the transmission system, the types and locations of generating units on the Delmarva Peninsula, and the design of PJM's wholesale pricing system. Recommendations affecting any of these components are constrained by legal, regulatory, technical and economic boundaries.

### RECOMMENDATIONS

- Simplify the permitting and right-of-way acquisition processes for transmission and distribution projects.
- The Public Service Commission should review the cost recovery process for transmission and distribution investments as new marketplace rules and practices are rapidly changing the way investment decisions are made. The challenge is to ensure that regulated utilities receive fair returns while unregulated utilities are not hindered from competing.
- The state and energy companies should continue to ensure the physical security of the energy infrastructure.

### ACTIONS IN PROGRESS



### Relieve Transmission Congestion

- The Federal Energy Regulatory Commission (FERC) opened a docket in June 2003 to investigate the causes and impacts of transmission congestion on the Delmarva Peninsula.
- In March 2003, PJM filed a proposal with the FERC that outlines its proposed methods for determining what transmission projects should be built to address congestion. This proposal is still under review by the FERC. Subsequently, the PJM transmission owners, including Conectiv, filed in support of PJM's economic planning proposal designed to address congestion and also provided a rate formula to apply to new transmission investments. The FERC accepted the transmission owners' filing in June 2003 and it will go into effect on November 11, 2003.



### Improve Transmission

In May 2003, Conectiv announced that it would begin work on a major 230 kV transmission project between Red Lion, Milford and Indian River to be completed by 2006.

Promote clean distributed generation.



Distributed generation locates small-scale power generation units close to end-users. They can be deployed at customer sites, utility substations or other locations where the need for power is small, but its value is high. Distributed generation can use a wide variety of equipment and resources including conventional engine-generators, fuel cells and solar photovoltaics.

Distributed generation holds the potential to reduce transmission congestion, reduce losses in electric power delivery, improve reliability and avoid or defer larger investments. Under the right circumstances, it can also greatly improve efficiency through the use of combined heat and power (CHP) applications.



## RECOMMENDATIONS

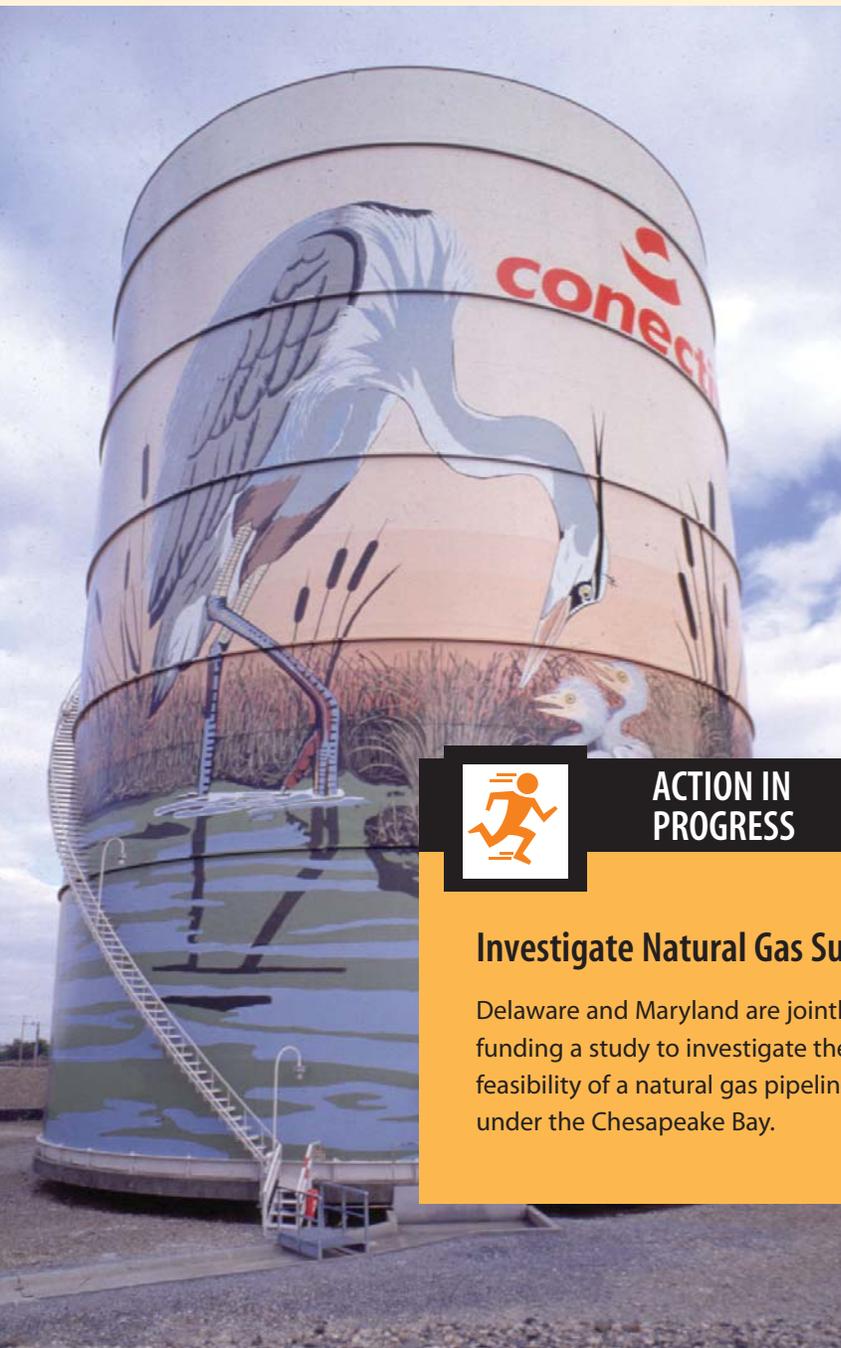
- Encourage distributed generation as an alternative to electric transmission and distribution system expansion.
- Electric and gas utilities should develop rates that encourage distributed generation.
- Identify and encourage combined heat and power opportunities as a means of increasing fuel utilization efficiency.
- The Public Service Commission and the state's utilities should closely follow development in distributed generation interconnection standards.
- The state should establish a distributed generation registry.



# Strategy 5



Enhance availability of natural gas.



**ACTION IN PROGRESS**

## Investigate Natural Gas Supply

Delaware and Maryland are jointly funding a study to investigate the feasibility of a natural gas pipeline under the Chesapeake Bay.

Natural gas service in Delaware is limited mainly to most of New Castle County, the more populated areas of Kent County and along the U.S. Route 13 corridor in Sussex County. In the fastest growing parts of Sussex County, natural gas is unavailable. The availability of natural gas is important for two reasons. First, new residential and commercial end-users who do not have access to natural gas are likely to use electricity for space heating, water heating and other applications, thereby increasing the overall need for electricity. Second, natural gas is considered critical in the development of relatively clean distributed generation.

## RECOMMENDATION

- The state should evaluate possible incentives for expanding residential and commercial natural gas service.



## Promote alternative transportation fuels.

Delaware's transportation sector, like the rest of the U.S., is almost completely dependent on oil. This has large implications for air quality and dependence on fossil fuels. However, Delaware is a small vehicle market in comparison to other states and has limited capacity to affect the efficiency of vehicles on the road.

Considering these factors, it makes sense for Delaware to promote alternative fuels that can be used in available vehicles, especially bio-diesel and ethanol. These two fuels can be produced locally and distributed to regional markets while providing a boost to Delaware's important agricultural sector. Perhaps more importantly, these fuels have environmental advantages by reducing tailpipe emissions.

### RECOMMENDATIONS

- Mandate that all diesel fuel sold in Delaware must be at least 2% bio-diesel. (legislation required)
- State government should use B-20 bio-diesel in State-owned vehicles and encourage the use of B-20 bio-diesel in private fleets.
- Officially recognize bio-diesel in the Delaware Code for taxation purposes. (legislation required)
- The state should provide training and education on the availability and use of alternative transportation fuels.



### ACTIONS IN PROGRESS

#### Advance Biodiesel Production & Consumption

There were numerous activities related to advancing bio-diesel production and consumption in Delaware including:



- The Governor appeared in a series of television commercials promoting bio-diesel in September 2002
- Developing a bio-diesel production facility in Delaware has been actively pursued
- Conectiv Power Delivery and the Delaware Electric Cooperative are using bio-diesel in their fleet trucks
- DNREC, DeIDOT and Department of Agriculture fleets use bio-diesel in vehicle fleets and the state's dredge
- DSWA converted to bio-diesel for its diesel-powered equipment
- Emissions testing on bio-diesel from high-oleic oil produced by genetically modified soybeans
- Emissions testing on bio-diesel used as heating oil in the Appoquinimick School District
- Uncle Willies began selling bio-diesel at 3 service stations in southern Delaware in February 2003



#### Provide Ethanol

The state signed a contract for supplying ethanol for refueling state-owned Flex-Fuel vehicles in July 2002.

# Strategy 7

Delaware has historically been a center of technological innovation. The state is also the home of several important companies and research centers involved in solar energy and fuel cell technology development. It is in Delaware's interest to promote itself as a center for these activities. Research, development and manufacturing in renewable energy and advanced energy technologies will help to attract high-paying jobs and solidify the state's position as an important center for clean energy innovation.

Promote economic development by encouraging advanced energy technology development.



## RECOMMENDATIONS

- As part of its economic development strategy, the state should recruit advanced energy technology companies and end-users with targeted financial incentives.
- The state should facilitate the development of a Clean Energy Research Institute focused on basic and applied clean energy technology research.
- The Delaware Economic Development Office and the electric utilities should address the needs of those business customers who need consistently reliable "high quality" energy.
- The State Energy Office should continue to sponsor appropriate energy-related demonstration projects.



## ACTIONS IN PROGRESS

### Support Economic Development

The U.S. Department of Energy awarded a contract to a public-private consortium to investigate biotechnologies and energy efficiency for Delaware's agricultural sector.



### Expand Fuel Cell Research

With the help of Delaware's Congressional delegation, two Delaware companies, Ion Power and DuPont, will receive combined funding of \$9.5 million for fuel cell research.

Ion Power, Inc



Nafion®



Implement energy efficiency, conservation and renewable energy in state government.



Through the State Energy Office and other agencies, Delaware's state government has always recognized the value of energy efficiency. However, the challenges are larger than ever before, and the state must actively and symbolically promote energy efficiency and lead this effort by example. The state government can do this by reorganizing its procurement efforts and taking advantage of the opportunities that lie ahead.



### ACTIONS IN PROGRESS

#### Encourage Use of Hybrid Buses/Vehicles



The Delaware Transit Corporation demonstrated use of Diesel-Electric Hybrid Buses in June 2003. They will add two of these buses to their fleet during the upcoming calendar year.

#### Relocate State Energy Office



To improve the effectiveness of the State Energy Office and increase its profile within the state, the office was moved to the Department of Natural Resources and Environmental Control following passage of Senate Bill 93 in June 2003.

### RECOMMENDATIONS

- State buildings that have the potential to save significant energy should be benchmarked for energy efficiency.
- Allow the use of performance contracting for energy efficiency upgrades in state facilities. (legislation required)
- Update energy efficiency standards for state-owned buildings. (legislation required)
- Require energy life-cycle cost analysis for new construction and renovations. (legislation required)
- Establish a revolving loan fund to internally finance energy efficiency projects in state-owned facilities. (legislation required)
- Require consideration of energy-efficient products in state procurement. (legislation required)
- Mandate the procurement of Energy Star rated equipment where possible. (legislation required)
- Expand training efforts encouraging employees to identify energy saving opportunities and promoting energy-efficient operation in state facilities.
- Form an Energy Cabinet Committee to coordinate state government energy activities.
- Require state agencies to evaluate the merits and cost effectiveness of stationary fuel cells and photovoltaics as primary or back-up power sources for buildings and remote power applications.
- Require individual state agencies to enter energy consumption data into the state's tracking system.
- Additional resources should be provided to the State Energy Office to effectively carry out its expanded mission.



# Strategy 9

Continue the planning effort to ensure that long-term goals are met.



This energy plan is a giant step toward achieving the goals established by Governor Minner in Executive Order 31. The success of this plan will depend on four factors: commitment, monitoring, flexibility and accountability. Rapidly changing events, technologies and circumstances will affect future implementation and plans will require adjustment. For these reasons, planning, tracking progress and reporting should be on-going efforts. Without these functions, feedback will be unavailable, opportunities will be missed and potential problems will not be identified.

## RECOMMENDATIONS

- Develop legislation to require on-going energy planning for the state.
- The State Energy Office should establish and maintain an energy end-use data collection and analysis program.
- Delaware should establish an Energy Stakeholder Coordination Council to monitor Delaware's energy transport systems, draft and implement actions necessary to enhance energy systems, and provide counsel to the Governor to promote an economic, reliable and competitive energy market for all Delaware consumers.
- Delaware should support and enhance on-going utility and PJM regional planning processes to insure reliability and cost-effectiveness.

# MEDIUM-LOW

# Priority

## RECOMMENDATIONS

### Strategy 1

Reduce environmental and economic costs of energy consumption through improvements in end-use efficiency and conservation.	Priority
<b>Recommendations</b>	
<b>Education &amp; Outreach</b>	
Once the state is a member, it should promote the Energy Star Program to potential private sector partners who would receive similar benefits.	MED
Educate homebuyers about the advantages of "Energy-Efficient" Mortgages.	
Provide commercial building owners with information and services to help them save energy.	
Offer small and medium-sized industrial consumers audits to help improve energy efficiency.	LOW
<b>Building Codes</b>	
Train building energy code officials to enforce updated energy codes.	MED
<b>Incentive Program</b>	
Develop commercial tax incentives and/or credits for energy-efficient equipment purchases in the commercial sector.	MED
Develop commercial tax incentives and credits to encourage Leadership in Energy and Environment (LEED)-certified buildings in the commercial sector.	
Develop a rebate program specifically for energy-efficient motors and variable speed drives to encourage replacement of older, low efficiency motors and the adoption of variable speed drives.	LOW
Develop a custom incentive program for industrial energy users.	
<b>Areas for Further Investigation</b>	
Investigate utility rates that encourage higher efficiency, such as real time energy pricing.	MED
Investigate utility rates that encourage higher efficiency, such as real time energy pricing.	LOW

Previous pages show high priority recommendations for each strategy. The Task Force would like to see those implemented as soon as possible. In addition, they developed these medium and low priority recommendations for the future.

### Strategy 2

Reduce the environmental impacts of electricity generation by encouraging clean and renewable energy generation.	Priority
<b>Recommendations</b>	
Review Delaware laws for their impact on the use of sustainable biomass and energy crops in an environmentally acceptable manner.	MED
Catalog potential power plant sites from the standpoints of environmental impacts, access to and the ability to license electric transmission, road and rail transportation infrastructure and natural gas delivery infrastructure.	

### Strategy 3

Reduce the economic impacts of transmission congestion.	Priority
<b>Recommendations</b>	
Encourage advanced transmission and distribution technologies.	MED
Encourage and support proactive communications among Transmission Owners, Load Serving Entities and PJM.	
To help maintain diversity of fuel sources, Innovative funding should be explored for energy-related environmental improvement projects	

## Strategy 5

Enhance availability of natural gas.	Priority
Recommendation	
The state should examine possible incentives to expand the natural gas infrastructure on a project-specific basis to develop clean power generation when and where it is needed.	MED

## Strategy 6

Promote alternative transportation fuels.	Priority
Recommendations	
Future contracts for state motor fuel purchases should require bidders to include access to E-85 ethanol refueling stations in return for a minimum purchase amount.	MED
The state should provide funding to aid purchases of Neighborhood Electric Vehicles (NEVs) for public and private urban fleets.	
Amend state motor vehicle laws to remove barriers to the use of NEVs.	
The state should ban the use of MTBE by 2006. The state should encourage the use of ethanol as the primary substitute for MTBE at a level regionally acceptable.	

## Strategy 7

Promote economic development by encouraging advanced energy technology development.	Priority
Recommendation	
The state should fund a visible fuel cell technology demonstration project to support the fuel cell industry in Delaware.	MED

## Strategy 8

Promote alternative transportation fuels.	Priority
Recommendations	
Encourage environmental permitting flexibility for fuel cells.	MED
Evaluate the use of hybrid vehicles for the state fleet and develop procurement guidelines for purchasing these vehicles.	
Require state agencies to seek assistance from the Energy Office and/or Contracting Unit before purchasing high value and/or unique energy-related equipment and services. (legislation required)	MED
Use life-cycle cost analysis to assess products with potential to save significant amounts of energy, that are not Energy Star labeled, before they are purchased. (legislation required)	LOW
Evaluate the use of recycled products to reduce "embedded energy."	

## Strategy 9

Promote alternative transportation fuels.	Priority
Recommendations	
Delaware should help facilitate the establishment of a Multi-State Energy Commission to address regional energy issues.	MED
Future energy planning efforts should include a more comprehensive treatment of the transportation sector.	
Include water consumption in future energy planning efforts.	LOW

# 14 Ways

## TO CONSERVE ENERGY AT HOME

### 1 Eliminate Wasted Energy

Turn off appliances, lights, and equipment when not in use. Don't forget to turn computers and printers off at the power strip!

### 2 Turn Up Your Thermostat

During warm weather months, set your thermostat to 78 degrees or higher when you are home, and 85 degrees or off when you are away. Using ceiling or room fans allows you to set the thermostat higher because the air movement will cool the room. You can save up to 3% for each degree the thermostat is set above 72 degrees.

### 3 Use Your Appliances Wisely

To help prevent electricity outages, avoid running your appliances during peak hours – from 4 p.m. to 6 p.m. – or anytime an electricity emergency is declared. Do laundry more efficiently by using warm or cold water settings for washing your clothes. Always use cold water for rinsing clothes. Line dry clothes whenever you can. When you need to use the clothes dryer, run full loads, use the moisture-sensing setting, and clean the lint trap after each use. Conserve energy by running your dishwasher only when it is fully loaded, and turn off the dry cycle and air-dry the dishes instead.

### 4 Use Energy Efficient Lighting

Replace regular incandescent light bulbs that are used more than two hours per day with Energy Star® compact fluorescent light bulbs. Compact fluorescent light bulbs use approximately 75 % less electricity than regular light bulbs and last up to seven years! Buy Energy Star® certified table lamps, light fixtures, or torchieres.

## 5 Wrap Your Water Heater

If your water heater is older than 10 years, wrap it with an insulating blanket.

## 6 Replace Air Conditioner Filters

Dirty filters restrict airflow and can cause the system to run longer, increasing energy use. Replace filters monthly for maximum benefit and save up to 2%

## 7 Plug Your Home's Leaks

Weather-strip, seal, and caulk leaky doors and windows, and install foam gaskets behind outlet covers.

## 8 Install Energy-Saver Showerheads

This can save not only electricity, but water as well.

## 9 Install an Energy Star® Thermostat

This can save up to 3% of your electricity use.

## 10 Use Energy Efficient Windows

Replace old windows with new high performance, energy efficient windows.

## 11 Install a Whole House Fan

An attic "whole house" fan draws cooler air into your home and forces hot air out through attic vents. Use it when the air is cool outside and in the early morning hours.

## 12 Increase Attic Insulation

Insulate ceilings to R-30 standards if your attic has less than R-19.

## 13 Seal Your Ducts

Leaking ductwork accounts for as much as 25 % of cooling costs in an average home. Have your ducts tested and get any leaks or restrictions repaired by a qualified contractor.

## 14 Buy Energy Star® Appliances

When buying new appliances, be sure to purchase energy-efficient ENERGY STAR® models. Also, look for seasonal incentives sponsored by utility companies for energy-efficient appliances.



Reliability  
Efficiency  
Sustainability  
Affordability  
Diversity

Ensuring the  
Future of  
Delaware's  
Energy  
Supply

**DELAWARE ENERGY TASK FORCE**

