

## A Fiscal 2003 Progress Report



In 1991, the Maryland Energy Administration (MEA) was created to develop State energy policy and implement energy efficiency. Governor William Donald Schaefer and the Maryland General Assembly recognized that energy efficiency and conservation reduce costs to State government and businesses as well as benefit the environment. MEA leverages State, Federal, Special and private funds for the benefit of Maryland citizens, businesses and governments and works across all economic sectors and State agencies to maximize efficiency.

Governor Robert L. Ehrlich Jr. entered office in January 2003 after serving on the House Energy and Commerce Committee, giving him extensive knowledge of energy issues. Further, the Governor ran on a platform of economic development, government accountability and environmental responsibility, which are all intricately tied to energy policies.

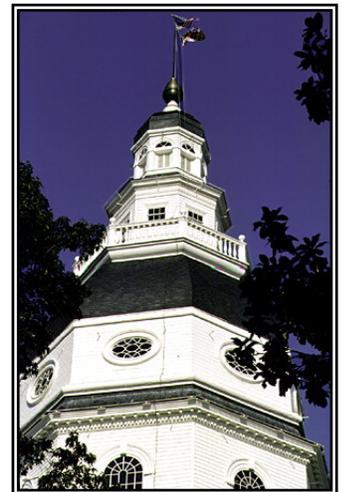
MEA receives the majority of its funding (62.8 percent or \$2.5 million in Fiscal 2003) from the Federal government. General Funds make up 9.8 percent (\$386,203) of MEA's operating budget.

In addition to its State mandates and responsibilities, MEA is the U.S. Department of Energy's (DOE) state office and works closely with DOE to implement national energy efficiency and conservation programs at State and local levels. MEA manages DOE programs in Maryland such as Clean Cities, Industries of the Future, ENERGY STAR<sup>®</sup>, Rebuild America and Energy Smart Schools.

State programs MEA manages are the Green Buildings Tax Credit, launched in November 2003, the State Agency Loan Program (SALP) and the Community Energy Loan Program (CELP). MEA is about to launch an Economic Development Loan Program (EEELP) directed toward energy efficiency. Programs span State and local government as well as the industrial, commercial and residential sectors. MEA also plays a role in energy emergency planning, deregulation and the development of a diverse energy supply.

In 2000, Marylanders spent more than \$7 billion on energy and State government spends more than \$85 million a year on electricity alone. The end result of MEA's work is money saved and a decrease in the emissions associated with energy use.

MEA projects and programs have saved an estimated 250 million kilowatt hours, reduced emissions of sulfur dioxide by nearly 1,430 tons a year and nitrogen oxide by more than 615 tons a year. This is in addition to the positive economic impact associated with energy cost savings to government, business and each Maryland resident.



## **Energy Efficiency within State Government**

The Maryland Energy Administration is mandated to promote the efficient use of energy among State agencies. Through the use of Energy Performance Contracts, administering the State Agency Loan Program and the careful review of new construction and renovation plans, MEA saves the state \$10 million per year in energy costs. Most of the savings, \$84 million since 1991, has been used to offset the cost of construction and renovation, providing a direct savings to the capital budget. By 2002, the State's use of energy dropped to 173,000 BTUs per square foot per year, a 3.8 percent decrease from 2000.

### **Energy Performance Contracts**

Energy Performance Contracting (EPC) is a self-funding financing mechanism that provides infrastructure improvements, energy and water savings, monitoring and verification of effectiveness, training, maintenance and environmental benefits. These are paid for through guaranteed energy savings that do not require capital dollars. Energy-related upgrades have become integral to the capital budget process, as a means of offsetting capital expenditures.

**MEA helped finance three Energy Performance Contracts in 2003, including the Rosewood Center in Owings Mills, the Springfield Hospital Center in Sykesville and the Maryland School for the Deaf in Columbia.**

In 2003, MEA completed three EPCs, with capital costs of more than \$14 million. This brings the total projects completed to 15 with an annual energy savings of almost \$7 million. The 2003 projects are the Rosewood Center in Owings Mills, Springfield Hospital Center in Sykesville and Maryland School for the Deaf in Columbia. Seven more are being evaluated or are under construction, with others in development. Those under construction include the Hagerstown Correctional Complex and the Deer's Head Center in Salisbury. In total, nearly \$56.7 million in energy upgrade projects have been completed, all using energy savings to pay debt service for private financing provided through the EPC agreement. With MEA's assistance, six local governments have received or are pursuing EPCs, including the cities of Baltimore and Rockville and Harford, Charles and Baltimore counties.

### **The State Agency Loan Program**

The State Agency Loan Program (SALP) was established in 1991 using funds from the Energy Overcharge Restitution Trust Fund. Through this revolving loan program, MEA provides loans to State agencies for cost-effective energy efficiency improvements in their facilities. In Fiscal 2003, SALP loaned State agencies almost \$1 million for energy savings projects, which MEA calculates will save more than 13 billion BTUs and \$119,317 annually. In Fiscal 2004, MEA has budgeted \$1 million to continue offering SALP. In Fiscal 2003, SALP loan agreements were signed by:

**In 12 years, SALP has funded more than \$8 million in conservation measures including energy efficient-lighting, motors, controls, variable drives, boilers and chillers.**

- The University of Maryland Baltimore County, for \$800,000. UMBC will replace two Central Plant boilers with energy-efficient ones. Completion is expected in early 2004.
- The University of Maryland Center for Environmental Science Chesapeake Biological Laboratory, for \$135,910. This project will install energy-efficient lighting and air conditioning throughout campus. Completion is expected in summer 2004.
- DHMH's Springfield Hospital Center, for a loan amendment to cover the increased cost of its EPC. The project was completed in March 2003. It utilized \$280,000 in SALP funds.

## Policies for a Reliable and Affordable Energy Supply

### Emergency Planning

MEA assists in planning the security efforts for Maryland's energy supplies and infrastructure, and has the authority for set-aside policies for petroleum fuels in an emergency. MEA participates in emergency preparedness training to mitigate supply shortages, whether caused by natural disaster or terrorist actions. During a state of emergency, MEA provides key staff to the designated Maryland Emergency Management Agency coordination site as well as critical information on our energy infrastructure and energy security issues.



- *Severe Weather Energy Supplies*

During weather-related emergencies or supply constraints, MEA coordinates efforts to extend fuel delivery truck driver hour restrictions to guarantee home delivery of home heating oil and propane. MEA also coordinates a weekly survey for the U.S. Department of Energy to track prices and supplies of home heating oil and propane. MEA staff coordinates with representatives of the winter heating fuels industry (home heating oil, propane and natural gas) to review the supply situation. When a serious shortage occurs, MEA advises the Governor on implementing procedures to mitigate the shortfall.

An example of MEA's emergency role is illustrated by Hurricane Isabel. Days before it made landfall, MEA began assessing and addressing potential energy problems that it might cause. Among primary concerns was ensuring that emergency shelters were adequately stocked with heating and cooking fuel. MEA had been alerted that fuel companies were so deluged by requests from Eastern Shore shelters that, without the required waiver, delivery vehicles would be unable to complete deliveries within their hours of service. MEA coordinated with the Maryland Department of Transportation to ensure that all waivers were granted for five Eastern Shore counties.



During and immediately following Isabel, MEA helped the Public Service Commission address power outages. In one instance, MEA worked with PEPCO officials to ensure that the company more rapidly restored electricity at a health-care facility in Southern Maryland.

- *Energy Security, Independence and Infrastructure Protection*

Since the terrorist attacks of Sept. 11, 2001, MEA has been involved in planning efforts with Federal, regional and State authorities to increase protection of our critical energy infrastructure, including power plants, transmission lines, substations, pipelines (natural gas and petroleum) and storage facilities.

### Electricity Deregulation

MEA has been actively involved in deregulation since its inception, and is engaged in activities related to the merger of electricity providers, electricity pricing under Standard Offer Service and new power plant sitings. The process of moving to a competitive electricity market began in 1999 with the passage of the Maryland Restructuring Act. Deregulation will continue to be a challenge for the State as we move from a system of regulation to incentives market-based policy approaches.

Since supply and demand, technological innovations and policy changes by Federal and State governments cause major shifts in market-sensitive energy sectors, State government must be positioned to respond to new opportunities, as well as to adjust to any potential dangers.

One way is through the Clean Energy Incentive Act, a first-in-the-nation set of tax incentives for energy efficient products and services, which has been an important component to our statewide energy efficiency effort, resulting in an estimated energy savings of more than 27 million kilowatt hours in 2003, or approximately \$2 million in electricity costs to Maryland residents.

- ***Standard Offer Service Settlement***

Recently, the PSC approved Phase II of the Standard Offer Service (SOS) settlement. This approval should help ensure that Maryland electricity consumers receive a stable-priced, reliable electric service during the transition to a competitive market. SOS will be provided through the same distribution companies that customers have relied on for years. The settlement promotes competition by requiring distribution companies to acquire the electricity from wholesale power suppliers through a competitive procurement system and by limiting switching restrictions. Consumers utilizing SOS can shop for and switch to competitive retail suppliers, without restricting their ability to return to SOS.

One outcome of Phase II of the settlement was to establish an “Other Services” working group charged with studying green energy and demand response management. The green working group, which had its first meeting in mid-November 2003, is studying the incorporation of renewable energy programs within SOS. These programs could include utility promotion of retail renewable-energy suppliers or the competitive procurement by utilities of green energy for retail customers. The working group encourages public input. Its first status report is due Dec. 29, 2003.

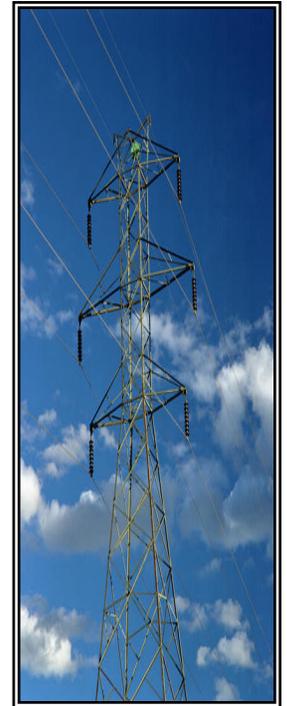
- ***Generator Attributes Tracking System***

Over the last two years, a working group consisting of PJM (the independent system operators), utilities, suppliers and agencies from several states has been meeting to work out the specifics of GATS, the PJM-developed Generator Attribute Tracking System. The purpose of the system is to disclose to customers the types of fuels used to generate electricity, as well as the emissions produced through generation. This information is required by Maryland’s 1999 Restructuring Act. MEA is actively involved in the process and has submitted comments to the PSC on the importance of creating a certificates system to track generator attributes (such as wind or coal-generated). Authorizing the separation and sale of the electricity from its generator attributes is necessary to foster the development of green energy and other competitive energy markets that offer customers real choices.

### **Diverse, Reliable and Clean Energy Supplies**

MEA advocates for adequate state-based power plants to ensure enough generation for Maryland customers, which contributes to stable rates and reliable electric service. Maryland is currently a net importer of electricity from surrounding states. As such, MEA also advocates for economic development in the energy sector, which would bring jobs, tax revenues and enhanced grid reliability.

Recent steps toward this, in which MEA played a variety of roles, include the 20-year license extension of the Constellation Calvert Cliffs nuclear power plant, the reopening of the Cove Point liquid natural gas facility and permitting for expansions of Mirant’s Dickerson and Chalk Point plants and the University of Maryland’s Trigen plant. Further, Easton Utilities has received their final approval to



construct two dual-fuel combustion turbine generating units; and the permitting of two wind farms in Western Maryland totaling 141 megawatts.



MEA supports wind farm development, which would bring income to Maryland landowners who lease their land for such uses and to the State and local jurisdictions in the form of property and production taxes. MEA is working closely with these companies to facilitate the construction of these renewable energy projects.

MEA also is leading a State government review of renewable biomass technologies for the Eastern Shore that would utilize poultry waste to fuel electric generation. Such a technology could potentially address the area's capacity constraint issue and reduce nutrient runoff into the Chesapeake Bay.

MEA works closely with Maryland businesses to obtain Federal funding for research projects. Over the past two years, MEA's efforts have benefited two Maryland businesses: CSX Transportation, which received nearly \$1 million, and Millennium Chemical, which will receive more than \$2 million in research grants. MEA is currently working with Maryland's coal industry so that it might participate in federally funded research projects for carbon capture, storage and sequestration.

These carbon sequestration projects are a part of "FutureGen," a \$1 billion DOE effort to design, build and operate nearly emissions-free, coal-fired electric and hydrogen production plants. DOE has also embarked on an aggressive effort to develop technologies for extracting fuel-grade hydrogen from natural gas and coal, as well as producing hydrogen through nuclear energy technology. As with FutureGen, a number of research institutions and private businesses stand to benefit from grants provided by DOE. MEA has coordinated with several private entities and the University of Maryland on proposals to the DOE that could bring nearly \$1 million to the State.

## Statewide Energy Efficiency

In addition to the energy savings initiatives managed by MEA for State operations, MEA also leads statewide efforts to promote energy efficiency in local governments, private businesses and residences.



The Maryland Energy Administration manages a number of programs and projects to increase energy efficiency and the development of clean energy sources, through targeted training programs, projects with local governments, low interest loans, demonstration projects and awareness campaigns. Since 2000, MEA's energy projects have saved an estimated 1.7 quadrillion BTUs, enough to power more than 7,000 homes for a year.

### Local Governments

MEA provides technical assistance to local governments to help them use Energy Performance Contracts to finance energy efficiency improvements, without making large up-front expenditures. As a result of MEA's assistance, six local governments have received or are pursuing EPCs, including the city of Rockville and Harford, Charles and Baltimore counties. MEA is also working to meet the needs of our smaller local governments by tailoring technical and financial assistance.

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By leveraging State resources, MEA has developed an outreach campaign that provides information on DOE's Rebuild America. MEA and Rebuild America offer valuable technical assistance and engineering services to local governments at no cost. Additionally, MEA offers one-on-one assistance to small municipalities, as well as general recommendations to larger audiences during regional meetings and annual conferences of the Maryland Municipal League and the Maryland Association of Counties. More than 100 local governments have been reached in this manner.

### ⇒ Queen Anne's and Frederick awarded grants

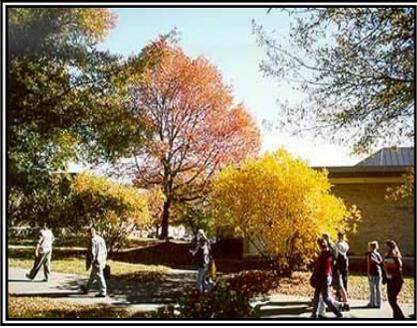


In summer 2003, MEA awarded two \$5,000 grants to Queen Anne's and Frederick counties to conduct energy audits on government buildings and/or equipment. Information gleaned from the audits creates a basis for deciding how to proceed in improving the energy efficiency of the building and/or equipment.

Queen Anne's County has chosen to look at its District Court House, a 200-year-old building that is the oldest continuously operating court house in the country. It is heated by an oil-fired boiler with a single heating zone, thus creating varying degrees of comfort throughout the building.



Frederick County wants to focus on Winchester Hall, a 158-year-old building used by government staff. Since both the District Court House and Winchester Hall are historically significant, changes to their facades and some interior fixtures are somewhat limited. MEA will continue to advise the counties as they proceed with these projects.



### ⇒ Harford Community College goes for Silver

MEA has assisted Harford Community College in designing the first known community college facility to meet U.S. Green Building Council LEED Silver Certification. MEA provided a grant to Harford Community College to redesign Joppa Hall, a 68,000-square-foot building, to meet LEED (Leadership in Energy and Environmental Design) Silver or better and to document the process of seeking certification so that other community colleges can use it. Harford County has followed up with construction and has borrowed \$566,650 from the Community Energy Loan Program for the energy-efficiency component of this project.

- *Solar Schools*

Funds are available through MEA's Maryland Solar Schools Program to partially supplement the costs of photovoltaic systems for Maryland schools.

MEA provides \$4,000 toward the cost of a minimum 1 kW grid-tied photovoltaic system. Schools must identify the funding source for the remainder of the cost, which range from \$6,000 to \$10,000. The program introduces younger Marylanders to renewable solar energy.

MEA is in preliminary discussions with the Maryland Science Center in Baltimore concerning installation of a photovoltaic solar energy system on its roof. MEA plans to offer funds to partially offset the cost of the system. MEA and the Center will also work together to create an educational exhibit on solar energy.



### Tax Credit Programs

In early November 2003, Governor Ehrlich announced the launch of the Green Building Tax Credit, which provides a financial incentive for developers to construct or retrofit commercial buildings to make them resource and energy efficient. Green buildings are also designed to save water, minimize site disturbance and have high indoor air quality. The tax credit, administered through MEA, was enacted by the Maryland General Assembly in 2001 with a total allocation of \$25 million through 2011. It enables developers to offset the higher cost of design and construction associated with green buildings.

Green buildings cost about 3 percent more to construct. However, the payback period in energy savings is usually less than 10 years. Reducing energy consumption through efficiency also helps reduce the load on power plants, which helps the environment and the Chesapeake Bay.

### Loan Programs

- *Community Energy Loan Program*

The Maryland General Assembly authorized the Community Energy Loan Program (CELP) for implementation as of July 1, 1989. Originally funded with \$3.2 million in seed money, CELP provides local governments and nonprofit organizations in the State a unique opportunity to reduce their operating expenses by identifying and installing energy conservation improvements. CELP allows borrowers to use the cost savings generated by the improvements as the primary source of revenue for repaying the loans. This neutral budget impact makes CELP an attractive financing opportunity for interested organizations. Loans can be made to eligible nonprofits, including hospitals and private schools, and local governmental entities, including public school systems and community colleges. Projects considered for

funding include those that: save energy and have a simple payback of seven years or less. The building must be owned or leased by the applicant and have an existing heating and/or cooling system.

By offering CELP as a revolving loan fund rather than a one-time grant, Maryland is able to maximize the use of the funds. Repayments and interest earned will allow the program to continue making loans for the foreseeable future. To date, 42 loans have been made, providing more than \$9.1 million for energy efficiency improvements and saving municipalities \$2.05 million.

In Fiscal 2003, three projects were initiated, providing an annual savings of \$124,750. This builds on the previous year, where four projects provided an annual savings of \$186,000.

- ***Energy Efficiency and Economic Development Loan Program***

The Energy Efficiency and Economic Development Loan Program (EEEDLP) was originally funded with \$2 million in seed money. The program provides Maryland-based businesses a unique opportunity to reduce operating expenses by installing energy efficiency and conservation improvements. The program allows borrowers to use the cost savings generated by the improvements as the primary source of revenue for repaying the loans. This neutral budget impact makes the program an attractive financing opportunity. The program currently funds approximately \$500,000 in new projects each fiscal year.

⇒ **Baltimore City Inn Pursues Geothermal Technology**



MEA is working with the Black Olive, a restaurant in Baltimore, which is constructing a 20,000-square-foot inn that will be a showcase for geothermal technology. Once complete, the building will utilize both a geothermal and a solar hot water system. The owners of the Black Olive expect to save \$7 million in energy costs over 70 years. The developers are on track to make this the first LEED Certified Platinum building in Baltimore City. MEA will provide a \$300,000 loan through EEEDLP.

### **Industries of the Future**

Maryland Industries of the Future (MIOF) is a partnership between state businesses, the Maryland Energy Administration, the state Department of Business and Economic Development and the Office of Energy Efficiency and Renewable Energy within the U.S. Department of Energy. The partnership targets issues of concern to Maryland businesses and provides local access to a wide range of DOE-developed software tools, technical assistance and materials.



The program also leverages corporate interests and resources with university research facilities to bring in federal funding for research and development projects in industrial energy efficiency. The mission of MIOF is to assist Maryland industries in saving energy, reducing waste and increasing productivity by providing resources and information and through building partnerships.

At the conclusion of the third year of the Maryland Industries of the Future Program, 12 manufacturing facilities have received free energy assessments, 10 companies have received training in energy efficiency best practices and more than 100 companies have participated in the program.

One company, W.R. Grace, identified four technically and economically viable projects with a combined savings of \$840,000 in energy costs per year. An assessment at a recycled paperboard plant identified \$1.2 million in annual energy savings. Additionally, MEA worked with Millennium Chemical to prepare

a proposal for the U.S. Department of Energy. The proposal was selected and, as a result, Millennium Chemical will receive more than \$2 million in funding for an energy research project.

Another achievement of the IOF Program has been a partnership between MEA and the University of Maryland Center for Environmental Energy Engineering. This collaboration resulted in the University of Maryland's selection to host the Mid-Atlantic Regional Center for Combined Heat and Power. This center will work with local businesses and institutions to identify opportunities for cogeneration and on-site power generation. The Center will open for business in early 2004.

### Residential Programs

- *PEPCO/Conectiv Merger*

The merger of the utility companies PEPCO and Conectiv in the summer of 2002 provided MEA with \$1 million in private-sector funding for two residential energy efficiency pilot programs. The programs, approved by the Public Service Commission in July 2003, will provide education to:

- (1) consumers on purchasing energy efficient products that meet the EPA's ENERGY STAR<sup>®</sup> label; and
- (2) heating and air conditioning contractors in the proper sizing and installation of energy efficient heating and air conditioning equipment.

- *ENERGY STAR<sup>®</sup>*

MEA is working in conjunction with the DOE and the Environmental Protection Agency to promote ENERGY STAR<sup>®</sup> products in Maryland. This includes the Maryland Clean Energy Incentive Act, a comprehensive set of Maryland tax incentives for energy efficient and renewable energy products and services that help to reduce energy costs for Maryland residents. The funding made available through the settlement of the PEPCO/Conectiv merger will provide important resources for marketing ENERGY STAR<sup>®</sup> homes and products. MEA expects that 2004 and 2005 will see dramatic increases in the market share of ENERGY STAR<sup>®</sup> products as a result of a comprehensive marketing campaign that will MEA will launch in early 2004.



- *Home Energy Rating System*



MEA is supporting the development of Maryland independent businesses interested in providing energy ratings or audits to builders and homeowners. By building energy efficiency into a house design, shell and equipment, energy savings can be realized by generations of homeowners. MEA is also conducting a series of 18 training sessions throughout Maryland on the new International Energy Conservation Code, ENERGY STAR<sup>®</sup> labeled homebuilding techniques and best practices for building energy efficient homes. Further, MEA received a grant from DOE to work with the National Association of Home Builders Research Center in Upper Marlboro to demonstrate advanced energy construction techniques

and equipment to Maryland builders through the construction of a "Zero Energy Home."

### Trainings

MEA conducts technical training, special events, conferences, workshops and other activities that educate the general public and targeted markets on the economic, environmental and national security benefits of energy efficiency. Recent programs include:

- **The Reality of Buying Electricity in an Open Market in the Washington Metropolitan Region and The Reality of Buying Electricity in an Open Market in Maryland.** These one-day conferences provided an introduction to electricity restructuring and provided guidance for businesses entering the competitive electricity market. The conferences were held in April 2002 and February 2003.
- **Maryland Industries of the Future Annual Energy Conference.** This annual MEA/DOE sponsored forum assists industries in saving energy, reducing waste and increasing productivity by providing resources and information and through building partnerships. More than 125 business owners and energy managers attended the 2003 event in November. Lt. Governor Michael Steele was a featured speaker.
- **Home Energy Raters Training Program.** Held at Montgomery College in November 2002 and at Howard County Community College in April 2003, the weeklong program was conducted with the objective of increasing the number of Home Energy Raters in Maryland. Twenty-two people participated in the classes.
- **Code Officials Trainings.** More than 200 code officials throughout Maryland have been trained in the new International Energy Conservation Code. Trainings were funded by a DOE grant implemented by Codes Administration within the Department of House and Community Development.



## Operating Budget

In Fiscal 2003, the total budget for the Maryland Energy Administration was \$6 million. The operating budget was \$4 million and the capital budget, consisting of self-sustaining loan programs originally capitalized with Energy Overcharge Restitution Funds, was \$2 million. The \$4 million operating budget includes funds applied to grants and loans. As the chart below demonstrates, MEA leverages State General Funds into a larger budget supplemented by Federal and Special Funds.

Approximately 9.8 percent of the operating budget comes from General Funds with 62.8 percent of MEA's funding coming from Federal Funds, and 25.3 percent coming from Special Funds, including Energy Overcharge Restitution Funds, the Community Energy Loan Program, the State Agency Loan Program and Environmental Trust Funds.

**MEA's Fiscal 2003 Operating Budget  
Funding Sources**

