

# MARYLAND ENERGY ADMINISTRATION YEAR IN REVIEW 2012



**Maryland Energy**

ADMINISTRATION

*Powering Maryland's Future*

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# Memo from the Director

MEA's programs have touched every corner of the State, helping Marylanders save money while combating climate change.

2012 marked another banner year for the Maryland Energy Administration (MEA) as it carried out its mission to bring clean, affordable, reliable energy to all Marylanders. MEA is responsible for implementing 3 of Governor Martin O'Malley's 15 strategic goals. First, the Governor aims to reduce both per capita peak demand and per capita electricity consumption in Maryland 15% by 2015. Second, the Governor seeks to increase in-State renewable generation to 20% by 2022. Lastly, the Governor aims to reduce greenhouse gas emissions 25% by 2020 from a 2006 baseline. These goals are saving Marylanders money, building a vibrant green economy, and protecting our families from dangerous climatic shifts. To find clean energy projects completed in your community, explore MEA's interactive map, available at [www.energy.maryland.gov/map](http://www.energy.maryland.gov/map), highlighting the locations of all of the major clean energy projects completed during the O'Malley-Brown Administration to date.

This year in review describes many of MEA's achievements in 2012. But MEA's successes span many years and will collectively save Marylanders billions of dollars. Here are some of MEA's top accomplishments:

**1 EmPOWER Maryland programs have saved Marylanders billions of dollars.**

MEA helped usher in the EmPOWER Maryland Energy Efficiency Act, a cutting edge energy efficiency package designed to save Marylanders money while saving the environment. In total, the EmPOWER Maryland programs have saved more than \$3.7 billion dollars in lifetime energy costs.

**2 Since 2007, MEA has provided policy expertise and technical assistance that has resulted in significant investments in the state.**

MEA's work was critical in the 2011 Exelon/Constellation merger negotiations that ultimately infused Maryland with more than \$1 billion in investments while creating 6,000 jobs. Furthermore, MEA's Generating Clean Horizons Initiative used public/partnerships to build 78 MW of new solar and wind generation.

**3 Maryland is now widely recognized as one of the leading clean energy states in the nation.**

Ranked only 47<sup>th</sup> in 2007, Maryland is now considered a top 10 state for energy efficiency. It is also recognized as a top 10 state for solar, while Baltimore is ranked by Ford Motor Company as one of America's top 25 EV-ready cities.

**4 MEA has grown Maryland's solar generating capacity by 700 percent.**

In 2006, Maryland had just 0.1 MW of solar on its grid. Now, it has 77 MW. Thanks to aggressive solar energy policies, including the Renewable Portfolio Standard, Maryland has 2,000 more well-paying solar industry jobs, up from practically zero just a few years ago.

**5 MEA has leveraged funds to help almost 8,000 families install solar, wind and geothermal energy systems.**

Since 2007, MEA has made grants to households all over the state for renewable energy systems that often reduce a family's energy bills to close to zero. In 2012 alone, MEA issued 2,385 grants that will help Marylanders save more \$32.5 million in energy costs over 15 years.

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Leveraging its expert staff, MEA is excited about its future. MEA will continue to play a transformative role in the State, saving taxpayers money while fighting climate change and building a sustainable energy economy. By making intelligent choices, I am confident MEA will be a significant asset to Marylanders for years to come.

One final note. I would like to acknowledge the leadership, vision and success of Malcolm Woolf, who left MEA in September 2012 after five years at the helm of this agency. Maryland is a cleaner and greener State because of his efforts.

Sincerely,



Abigail Ross Hopper  
*Acting Director, Maryland Energy Administration*

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# Saving Schools Money and Enhancing Opportunities For Our Children



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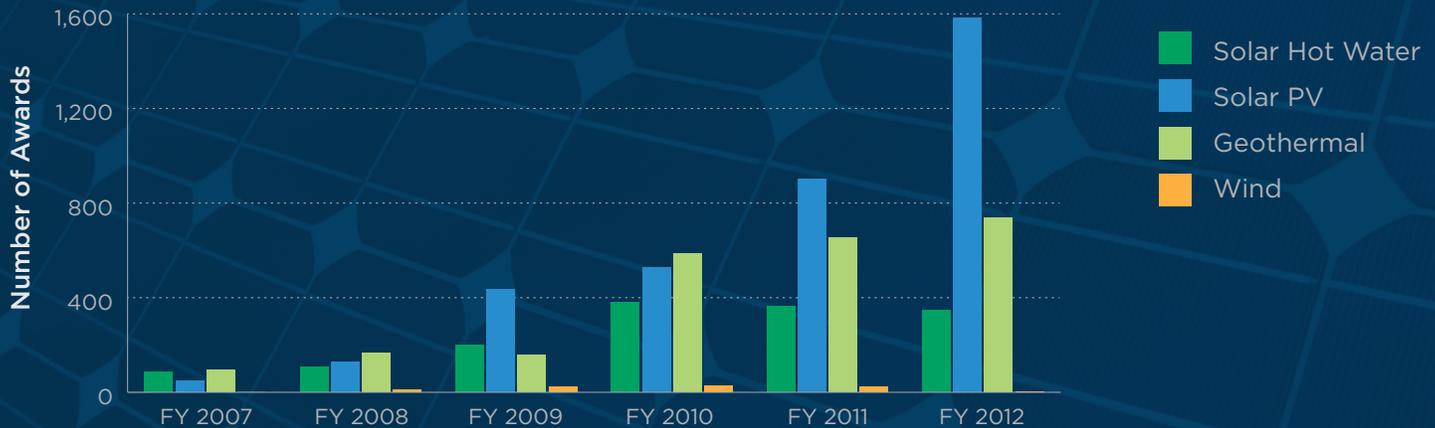
In 2012, MEA launched the Governor’s \$25 Million Maryland Public Schools Energy Efficiency Initiative, in collaboration with its sister agency the Maryland Public Schools Construction Program (“PSCP”). Through the initiative, MEA and PSCP are giving grants totaling \$25 million for energy efficiency makeovers to over 200 K-12 public schools across the State. Schools in all 23 counties and Baltimore City will receive grants to reduce the energy use of their lighting and heating and cooling systems, which in turn will reduce their electricity bills for years to come.

- Lower energy use means lower energy bills, which means more money for things that schools need—teachers, textbooks and computer—essential tools for educating our children for a 21<sup>st</sup> century economy.
- Several schools will install solar systems to ensure that the energy that they do use is clean. Those solar systems will act as a teaching tool to educate students about clean energy technologies while saving the schools money.
- MEA, in collaboration with another sister agency, the Maryland Department of Housing and Community Development (“DHCD”), is giving more than \$1 million in additional grants to the schools participating in the initiative to cover their system design costs.

Thanks to this program, more than 200 public schools across the State will receive grants totaling \$25 million for energy efficiency upgrades.

# Saving Marylanders Money And Saving the Environment

Residential Renewable Grants By Fiscal Year



Capitalizing on the State's abundant natural resources, MEA ensured Maryland's renewable sector had a record setting year in 2012. By wisely leveraging Strategic Energy Investment Fund dollars with other incentives, MEA issued 2,385 residential and commercial grants. These renewable energy systems in 2012 will help Marylanders save more than \$32.5 million in energy costs over 15 years. And by wisely leveraging Strategic Energy Investment Fund dollars with other incentives, MEA did it all without a dime of taxpayer money.

- Since the beginning of the O'Malley-Brown Administration, MEA has awarded almost 8,000 grants to install solar, wind, and geothermal systems on residential property. These grants have funded systems that will save Marylanders more than \$78 million over 15 years.
- Thanks to the leadership of Governor O'Malley and MEA Maryland now has 700 times more solar energy than in 2006. The majority of these systems are installed on homes, reducing many customer's electricity bills to close to zero. That's more than \$13,000 in total savings per solar grant recipient. These systems also reduce our state's CO<sub>2</sub> emissions by 1,400 tons, equal to 2,700 cars off the road.
- MEA's grants, combined with smart policies like the Renewable Portfolio Standard, have helped create a growing green energy sector right here in Maryland. These jobs cannot be outsourced, helping Maryland continue its leadership in job creation.
- In 2012 MEA initiated a pilot wood burning stove grant program to help all Marylanders realize the benefits of renewable energy. This is the first in a series of several programs MEA will administer in order to assist the development of the bioenergy market in Maryland.

In 2012, MEA issued 2,385 residential and commercial grants that will help Marylanders save more \$32.5 million in energy costs over 15 years.

# “The Cheapest Kilowatt is the One Not Used” Energy Efficiency for State Buildings

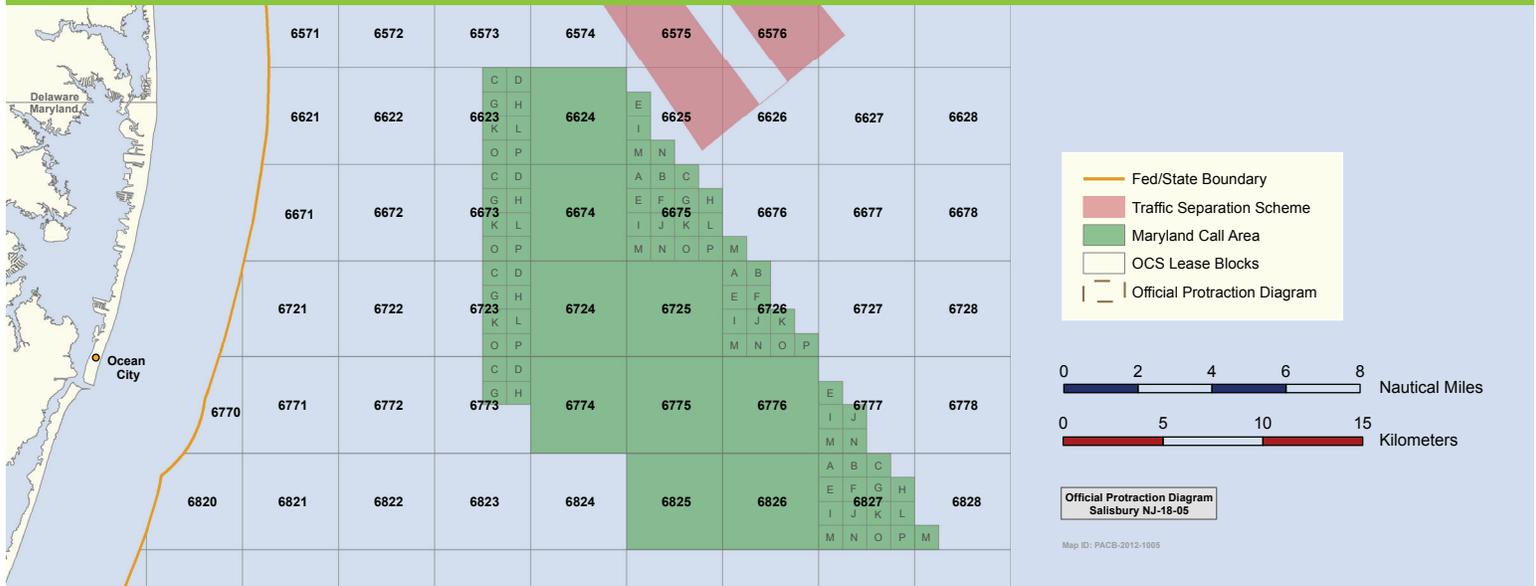


Building off the successful State Agency Loan Program (“SALP”), MEA is helping our state government make smart energy efficiency investments in its building infrastructure. By forging strong relationships with the Department of General Services and the University System of Maryland, MEA helps to drive efforts to save money by reducing our government’s energy bill.

- Since 2007, MEA has made 27 SALP loans to state agencies totaling \$11 million. These projects will save Maryland more than \$30 million over the life of the investments, while reducing CO<sub>2</sub> emissions by 11,000 tons. That’s equivalent to 2,100 cars off the road.
- In 2012, MEA made SALP loans to Frostburg State University, the University of Maryland Shady Grove, and the University of Maryland College Park. These investments will save the universities collectively more than \$6.8 million, allowing them to keep tuition low while increasing cutting-edge research and job training programs.
- In 2012, MEA signed on to the US Department of Energy Better Buildings Challenge, with a goal of reducing energy consumption in state buildings 20% by 2020. By setting forward looking goals, MEA is ensuring Maryland will remain a national leader in energy efficiency for years to come.
- As state agencies repay SALP loans, MEA makes new loans with that money, creating an on-going sustainable stream of capital for energy efficiency improvements throughout the State.

**In 2012, MEA made a \$1.5 million loan to the Maryland Port Administration. These boilers, installed at Baltimore’s World Trade Center, will save an estimated \$2.8 million.**

# Laying the Foundation for Offshore Wind in Maryland



Maryland is laying the foundation for Maryland’s clean energy future by working with stakeholders, federal partners and industry to take advantage of our most renewable energy resource—offshore wind. As the U.S. Department of Interior ramps up to offer, for the first time, competitive offshore wind leases off the East Coast, Maryland has been busy on many fronts preparing to capture the economic development benefits, as well as the clean renewable electricity, from this promising sector. During 2012, Maryland agencies worked with federal partners to issue a Call for Information and Nominations for Maryland’s designated Wind Energy Area.

**Offshore wind is Maryland’s most abundant renewable energy resource.**

- In 2012, Maryland agencies launched an aggressive strategy to harness funding that was secured during last year’s utility merger to advance offshore wind energy. MEA has worked with Maryland’s Department of Natural Resources to conduct advanced meteorological, oceanographic and ecological surveys of Maryland’s Wind Energy Area.
- Offshore wind is Maryland’s most abundant renewable energy resource, able to power up to 2/3 of the State and the entire Eastern Shore. Offshore wind in Maryland’s designated Wind Energy Area can generate up to 1 GW of electricity, enough to power nearly 400,000 homes and reduce Maryland’s CO<sub>2</sub> emissions by 2 million tons, equal to 380,000 cars off the road.
- Potentially totaling \$10 billion in Maryland, the offshore wind industry will provide a significant benefit to Maryland’s economy. The industry will create an opportunity to revitalize Maryland’s manufacturing sector, upgrade our port infrastructure, and support workforce training and research.

# Building Maryland a 21<sup>st</sup> Century Clean Transportation Infrastructure



MEA recognizes that innovative vehicle technologies offer real environmental and economic benefits to Marylanders. By harnessing the innovation of our people, MEA worked efficiently in 2012 to speed electric and hybrid vehicle adoption. Seeing significant success, MEA's Clean Cities Program reduced in-state gasoline consumption by 16.6 million gallons from 2007 to 2011, equal to more than 28,000 cars off the road. Most importantly, this will save Marylanders nearly a billion dollars over the lifetime of the investments.

- MEA has partnered to install over 80 electric vehicle (EV) charging stations at strategic locations across the State. By preparing now for the future wave of electric vehicles, MEA has positioned Maryland as a national leader in EV preparedness.
- MEA has partnered with five of our State's leading truck fleets to deploy 143 heavy duty hybrid trucks, displacing nearly 130,000 gallons of dirty burning diesel per year. And through the Idle Reduction Technology Grant Program, MEA has funded heavy truck retrofits that will save an additional estimated 110,000 gallons of diesel per year.
- Providing significant benefits to our State's institutions of higher education, MEA helped the University of Maryland purchase eight propane powered vehicles and Johns Hopkins University purchase eight compressed natural gas (CNG) vehicles. These investments will save our universities—and students—money, all while reducing harmful greenhouse gas emissions.

MEA's Clean Cities Program reduced in-state gasoline consumption by 16.6 million gallons from 2007 to 2011, equal to removing more than 28,000 cars off the road.



# Empowering Clean Energy Communities through Energy Efficiency

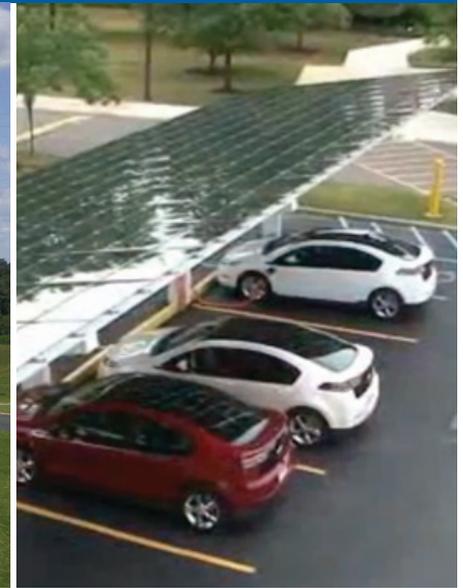


For some Maryland families, utility bills consume a significant portion of discretionary income. That's why MEA's Clean Energy Communities Program has focused resources on grants for low and moderate income households. The program helps local governments and not-for-profit organizations fund energy efficiency projects specifically designed to benefit low to moderate income Marylanders. These investments will help Maryland families save hundreds of dollars on their utility bills and move the State closer to achieving its goal of a 15% reduction in energy consumption by 2015.

- For 2012, MEA's Clean Energy Communities grants are expected to help more than 1,400 Maryland families save a total of 1,450 MWh of electricity and almost 6 million cubic feet of natural gas each year. This amounts to more than \$4.5 million in savings over the estimated life of the measures.
- In 2012, as part of the Clean Energy Communities Program, MEA has awarded forty-seven grants to organizations in every county across Maryland and Baltimore City. Municipalities and not-for-profit organizations will use these funds to ensure an energy efficient future for Maryland. Funded projects range from energy efficiency upgrades at a homeless shelter in Anne Arundel County to whole home audits and retrofits for low-to-moderate households in Prince George's County.
- MEA has ensured its Clean Energy Communities Program touches families across the state by allocating funds to counties and Baltimore City based on the number of low to moderate income households residing in each respective area.

In 2012, MEA invested \$162,000 in an energy efficiency retrofit of the Bay Ridge low-income community, saving residents nearly \$1 million over 15 years.

# Game Changers Grants: Bringing Innovation to Maryland



Innovative clean energy technologies are going to transform Maryland, the nation, and the world. MEA created the Game Changers program to ensure Maryland is a hotbed of clean energy innovation. In 2012, MEA offered four grants through its Game Changer program to innovative clean energy companies that have the potential to transform the State's energy landscape. MEA's team of experts carefully selected each grant recipient from a large applicant pool to offer seed funding for the most promising projects.

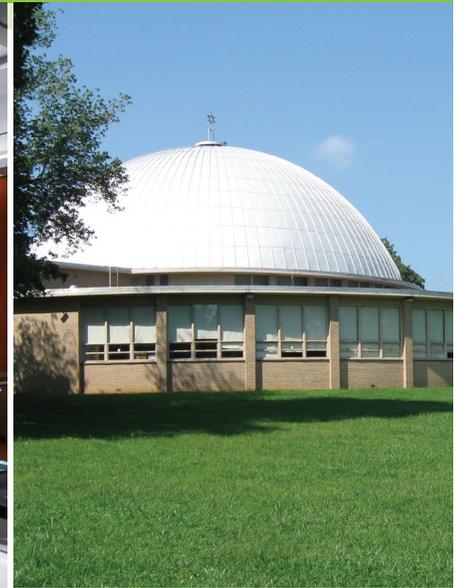
- MEA has offered a grant to assist the construction of Maryland's first solar PV microgrid. This microgrid will use battery backup technology to allow residents and businesses to use solar PV power even when the grid is down. By harnessing clean energy to increase service reliability, MEA is helping mitigate the costs of prolonged power outages to our State's residents.
- MEA has offered a grant to build an innovative PV charging station at the White Marsh General Motors facility. Using battery backup, this solar array will provide electricity to the manufacturing plant, electric vehicles, and the electricity grid. MEA is helping industry thrive by lowering energy costs and sparking innovation from the ground up.

MEA created the Game Changers program to ensure Maryland is a hotbed of clean energy innovation.

*Left:* MEA offered a grant for an innovative solar hot water heating system.

*Right:* An example of the type of solar array being installed at the White Marsh GM facility.

# Lawton Loans and Save Energy Now: Making Efficient Choices That Benefit the Bottom Line



In 2012, MEA made three low-interest loans to businesses and non-profit organizations totaling over \$1 million. The energy efficiency projects financed by those loans will save the three borrowers about \$120,000 each year for the life of the installed measures. As participants save money and pay back their loans with interest, MEA will reinvest the money in even more projects—creating a sustainable stream of energy efficiency financing.

As part of the Save Energy Now program, in 2012 MEA performed 5,389,416 KWh and 479,750 therms worth of energy audits on 2 industrial businesses. The audits identified \$752,350 worth of potential energy savings for the businesses over the life of the measures.

The energy efficiency projects financed by these loans in 2012 will save the three borrowers about \$120,000 each year over the life of the installed measures.

*Left:* MedImmune in Gaithersburg received an audit through MEA's Save Energy Now program.

*Right:* Bnos Yisroel will save over \$120,000 each year with their energy upgrades.

# The Mathias Agriculture Program: Enhancing the Efficiency of Maryland's Farms



Maryland's agricultural sector is one of the most important components of our State's economy. To serve this community, MEA and the Department of Housing and Community Development (DHCD) created the Kathleen A. P. Mathias Agriculture Energy Efficiency Program. The 17 recipients of grants totaling \$1.4 million are spread across 11 Maryland counties and will receive funding to cover 75 percent of the cost of energy efficiency upgrades for selected farms and agribusinesses. Reducing energy consumption saves money, sustains our quality of life and ensures that these farms and communities will remain viable and successful in years to come.

- Examples of grantees include an Eastern Shore grain producer that switched his primary fuel source from diesel fuel to electricity. As a result the producer will save 88% of energy use. An aquaculture farm in Frederick County saved 60% of energy use by upgrading its lighting, tank heating, and tank pumps.
- The annual energy savings are estimated at approximately 800 MWh, 14,000 therms of natural gas, over 70,000 gallons of propane, and 2,220 gallons of diesel fuel.

Reducing energy consumption saves money, sustains our quality of life and ensures that these farms and communities will remain viable and successful in years to come.

## Partnerships

In addition to the cutting edge programs listed in this review, MEA continued a number of productive partnerships in 2012 that saved Marylanders even more money while helping the fight against climate change:



Since the passage of the EmPOWER Maryland Act in 2008, millions of Marylanders have taken advantage of MEA's and utilities' programs to reduce their energy consumption. Those programs are saving Marylanders over \$3.7 billion in energy costs over the life of the investments.



In partnership with the Maryland Emergency Management Agency and other designated agencies, MEA played a key role in the Governor's Grid Resiliency Task Force. The Task Force's final report outlines eleven recommendations to keep the lights on during major storms.



MEA continued its partnership with the Maryland Clean Energy Center in 2012. The Maryland Clean Energy Center helps move promising clean energy technology from the bench to the bank. MCEC manages the Maryland Home Energy Loan Program, which was first funded by a grant from MEA. MHELP provided over 350 loans worth about \$3 million to Maryland homeowners in 2012 for energy efficiency projects and heating and cooling equipment.



MEA would also like to thank the following Maryland State Agencies for their tireless work: Department of Housing and Community Development, Department of General Services, Department of Environment, Department of Economic Development, Department of Natural Resources and Department of Transportation.



# **Maryland** **Energy**

ADMINISTRATION

*Powering Maryland's Future*

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