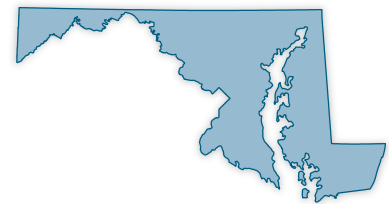




Department of Energy Recovery Act State Memos

Maryland



For questions about DOE's Recovery Act activities, please contact the DOE Recovery Act Clearinghouse:
1-888-DOE-RCVY (888-363-7289), Monday through Friday, 9 a.m. to 7 p.m. Eastern Time
<https://recoveryclearinghouse.energy.gov/contactUs.htm>.

All numbers and projects listed as of June 1, 2010

TABLE OF CONTENTS

RECOVERY ACT SNAPSHOT..... 1

FUNDING ALLOCATION TABLE..... 2

ENERGY EFFICIENCY 3

RENEWABLE ENERGY..... 4

ELECTRIC GRID..... 6

TRANSPORTATION 7

CARBON CAPTURE & STORAGE 7

SCIENCE AND INNOVATION..... 7

RECOVERY ACT SUCCESS STORIES – ENERGY EMPOWERS

- *Residential tax credits boost Maryland geothermal business 8*
- *Geothermal system saves dollars, makes sense for Maryland family ... 8*
- *Maryland small business helping lower solar costs 9*
- *Maryland abuzz with retrofit converts 9*
- *Baltimore boy’s asthma improved through retrofit 9*



American Recovery and Reinvestment Act



U.S. DEPARTMENT OF ENERGY • MARYLAND RECOVERY ACT SNAPSHOT

Funding for selected DOE projects: \$504.7 million

DOE Recovery Act projects in Maryland: 46

Clean energy tax credits and grants: 13

For total Recovery Act jobs numbers in Maryland go to www.recovery.gov

The **American Recovery & Reinvestment Act (ARRA)** is making a meaningful down payment on the nation's energy and environmental future. The Recovery Act investments in Maryland are supporting a broad range of clean energy projects, from energy efficiency and smart grid to advanced battery manufacturing. Through these investments, Maryland's businesses, universities, non-profits, and local governments are creating quality jobs today and positioning Maryland to play an important role in the new energy economy of the future.

EXAMPLES OF MARYLAND FORMULA GRANTS

Program	State Energy Program	Weatherization Assistance Program	Energy Efficiency Conservation Block Grants	Energy Efficiency Appliance Rebate Program
Award (in millions)	\$51.8	\$61.4	\$55.1	\$5.4
	The Energy Administration has received \$51.8 million in State Energy Program funds to invest in state-level energy efficiency and renewable energy priorities.	The State of Maryland has received \$61.4 million in Weatherization Assistance Program funds to scale-up existing weatherization efforts in the state, creating jobs, reducing carbon emissions, and saving money for Maryland's low-income families. Over the course of the Recovery Act, Maryland expects to weatherize approximately 6,850 homes. The program also includes workforce training and education as part of the state's efforts to develop a green workforce.	Twenty-three communities in Maryland received a total of \$55.1 million for Energy Efficiency and Conservation Block Grants (EECBG) to develop, promote, implement, and manage local energy efficiency programs.	Maryland has received \$5.4 million for the Energy Efficient Appliance Rebate Program, which offers consumer rebates for purchasing certain ENERGY STAR® appliances. These energy efficient appliances reduce energy use and save money for families, while helping the environment and supporting the local economy.

EXAMPLES OF MARYLAND COMPETITIVE GRANTS AND TAX CREDITS

Award	\$200 million	\$105 million	\$10 million	\$5.9 million
	Baltimore Gas and Electric is leading the implementation of a \$200 million Smart Grid Investment Grant to deploy a smart meter network and advanced customer control system for 1.1 million residential customers .	General Motors was awarded \$105 million to manufacture the second generation GM global rear wheel electric drive system. This funding will be used in White Marsh, Maryland.	Under the Smart Grid program , DOE awarded \$10 million to the National Institute of Standards and Technology (NIST) to develop a framework for smart grid interoperability and cybersecurity standards.	The Maryland Energy Administration in Annapolis, was awarded \$5.9 million for the Clean Cities Alternative Fuel and Vehicles Grant Program to deploy 150 heavy-duty hybrid vehicles.

Funding Allocation Table (Figure 1)

Total dollar amounts in this document are accurate as of June 1, 2010. Please note that Recovery Act Programs are ongoing and the dollar amounts are subject to change. Recipient locations are based on project sites rather than recipients' headquarters locations.

Recovery Act Pillar	Flagship Program Names & Funding Type ¹	Number of Selections	Selected Amount (in millions) ²
Energy Efficiency	<i>Weatherization Assistance Program (F)</i>	1	\$61.4
	<i>State Energy Program (F)</i>	1	\$51.8
	<i>Energy Efficiency and Conservation Block Grant (F)</i>	23	\$55.1
	<i>Energy Efficient Appliance Rebate (F)</i>	1	\$5.4
	<i>Industrial Energy Efficiency (CM)</i>	1	\$0.4
	<i>Additional Programs (CM + C)</i>	1	\$2.2
	TOTAL Energy Efficiency	28	\$176.3
Renewable Energy	<i>Solar (CM)</i>	1	\$0.2
	<i>Wind (CM)</i>	1	\$0.3
	<i>Geothermal (CM)</i>	1	\$1.2
	TOTAL Renewable Energy	3	\$1.7
Electric Grid	<i>Smart Grid Investment and Demonstrations Project (CM)³</i>	1	\$200.0
	<i>State and Local Energy Assurance and Regulatory Assistance (F)</i>	4	\$11.8
	<i>Smart Grid Workforce Training (CM)</i>	1	\$0.8
	TOTAL Electric Grid	6	\$212.6
Transportation	<i>Advanced Battery Manufacturing (CM)</i>	1	\$105.0
	<i>Clean Cities Alternative Fuel and Vehicles Program (CM)</i>	1	\$5.9
	TOTAL Transportation	2	\$111.0
Carbon Capture and Storage	<i>CCS Projects (CM)</i>	1	\$0.2
	TOTAL Carbon Capture and Storage	1	\$0.2
Science and Innovation	<i>Small Business Research (SBIR/STTR) (CM)</i>	3	\$0.4
	<i>National Laboratory Facilities (C)</i>	1	\$1.5
	<i>Additional Programs</i>	2	\$1.0
	TOTAL Science and Innovation	6	\$2.9
TOTAL - DOE Programs⁴		46	\$504.7
Tax Credits/ Grants ⁵	<i>Payments for Renewable Energy Generation in Lieu of Tax Credits (1603)</i>	11	\$2.1
	<i>Clean Energy Manufacturing Tax Credits (48C)</i>	2	\$0.8
	TOTAL Tax Incentives	13	\$2.9
TOTAL - DOE/Treasury + DOE		59	\$507.6
¹ F=Formula Grant, CM=Competitive Grant, C=Contract			
² "Selected" indicates DOE has selected a potential funding recipient, which begins the process of negotiating an agreement. This does not necessarily indicate that a final agreement has been reached.			
³ Projects may cross state boundaries, signifies HQ location.			
⁴ Total does not include administrative funds.			
⁵ Jointly administered by DOE and the U.S. Department of Treasury.			

ENERGY EFFICIENCY – 28 projects totaling \$176.3 million

Helping millions of American families cut utility bills by making homes and appliances more energy efficient, expanding the home efficiency industry in sales and manufacturing. For more information, visit <http://www.energy.gov/recovery/energyefficiency.htm>.

Award(s): \$61.4 million, Weatherization Assistance Program (WAP)

Location: Statewide

The State of Maryland received \$61.4 million in Weatherization Assistance Program funds to increase existing weatherization efforts in the state, create jobs, reduce carbon emissions and save money for Maryland's low-income families. Over the course of the Recovery Act, Maryland's goal is to weatherize approximately 6,850 homes. The program also includes workforce training and education as part of the state's efforts to develop a green workforce. The Maryland Department of Housing and Community Development will be administering the program with more than eighteen agencies and counties implementing the weatherization program. Each local sub-grantee receives funding to hire and train new employees or contractors. Five regional training centers in community colleges are being established to train the workforce. Trainings focus on increasing energy savings and improving program management and accountability. A computerized monitoring system assists in conducting energy audits and supplying performance energy-savings data.

Award(s): \$51.8 million, State Energy Program (SEP)

Location: Statewide

The Energy Administration received \$51.8 million in State Energy Program funds to invest in state-level energy efficiency and renewable energy priorities. Maryland is employing its Recovery Act SEP funding to promote clean and efficient energy usage in the transportation, residential, commercial and industrial sectors. To advance sustainability in transportation, Maryland is funding a variety of initiatives designed to boost consumer awareness, increase the availability of alternative fuels and facilitate the deployment of hybrid-electric and all-electric vehicles. In the housing market for low- and moderate-income families, Maryland is making grants in support of cost-effective and environmentally responsible building retrofits. In addition, innovative public-financing programs, such as the EmPOWERing Financing Initiative, enable property owners to leverage private capital in order to implement efficiency improvements. Recovery Act SEP funding also supports educational and workforce training efforts to familiarize families with important sustainable energy approaches.

Award(s): 21 totaling \$55.1 million, Energy Efficiency and Conservation Block Grant Program (EECBG)

Location: Statewide

Recipients: Howard County, Baltimore County, Baltimore, Washington, College Park, Prince George's County, Charles County, Maryland State Energy Office, Laurel, Salisbury, Carroll County, Anne Arundel County, Annapolis, Hagerstown, Harford County, Bowie, Frederick, Frederick County, Rockville, Montgomery County, Gaithersburg

Twenty-one communities in Maryland received a total of \$55.1 million for the Energy Efficiency and Conservation Block Grants Program (EECBG) to develop, promote, implement and manage local energy efficiency programs.

A portion of the EECBG funds is being used to provide energy engineering services to help the counties and municipalities receiving grants to identify potential energy efficiency and conservation

projects and / or to conduct planning sessions for renewable energy projects. Assistance is being provided to help local governments assess their specific energy opportunities, prepare project bid specifications and estimate project savings. Energy projects must occur on buildings or facilities owned or operated by the recipient local government.

Award(s): \$5.4 million, Energy Efficient Appliance Rebate Programs

Location: Statewide

Maryland received \$5.4 million for the Energy Efficient Appliance Rebate Program, which offers consumer rebates for purchasing certain ENERGY STAR® appliances. These energy efficient appliances reduce energy use and save money for families, while supporting the local economy. This project assists states, U.S. territories, Indian tribes, counties and cities to develop, promote, implement and manage localized energy efficiency programs through individual program grants. The project funds programs which reduce fossil fuel emissions in a manner that is environmentally sustainable and maximizes cost savings, reduces the total energy use of eligible entities and improves energy efficiency in the transportation, building and other appropriate sectors.

Award(s): \$2.2 million, Enhance and Accelerate FEMP Service Functions to the Federal Government

Location: Hyattsville

New West-Energetics Joint Venture, LLC, received \$2.2 million in funding to provide technical assistance for federal agencies.

Award(s): \$350,000, Industrial Assessment Centers and Plant Best Practices

Location: Annapolis

Maryland Energy Administration in Annapolis received \$350,000 for Industrial Assessment and Plant Best Practices. Funds are being used to improve the energy efficiency of Maryland industrial facilities through waste heat recovery, combined heat and power as well as traditional energy efficiency improvements. The state is leveraging aspects of the Federal Save Energy Now program, such as DOE training materials and software tools and combining them with additional state resources through the Maryland Technology Extension Service.

RENEWABLE ENERGY – 16 projects totaling \$4.6 million

Developing the clean renewable resources in order to double our supply of renewable energy and boost domestic renewable manufacturing capacity. For more information, visit <http://www.energy.gov/recovery/renewableenergy.htm>.

Award(s): 11 payments totaling \$2.1 million from DOE / Treasury, 1603 Payments for Renewable Energy Generation

Location: Statewide

*For current number of 1603 awards, see the weekly update at <http://www.treas.gov/recovery/1603.shtml>

- **National City Energy Capital, LLC, Eldersburg - \$468,000**
National City Energy Capital, LLC, in Eldersburg received \$468,000 for a solar electricity project.
- **National City Energy Capital, LLC, Hagerstown - \$420,000**
National City Energy Capital, LLC, in Hagerstown received \$420,000 for solar electricity project.

- **National City Energy Capital, Silver Spring - \$415,000**
National City Energy Capital, LLC, in Silver Spring received \$415,000 for a solar electricity project.
- **National City Energy Capital, LLC, Timonium - \$403,000**
National City Energy Capital, LLC, in Timonium received \$403,000 for a solar electricity project.
- **National City Energy Capital, LLC, Waldorf - \$250,000**
National City Energy Capital, LLC, in Waldorf received \$250,000 for a solar electricity project.
- **Cannon Energy, Inc., Bel Air - \$75,000**
Cannon Energy, Inc., in Bel Air received \$75,000 for a solar electricity project.
- **New World Renewable Energy Leasing, Inc, Elkton - \$24,000**
New World Renewable Energy Leasing, Inc., in Elkton received \$24,000 for a solar electricity project.
- **Rice's, Inc., Salisbury - \$12,000**
Rice's, Inc., in Salisbury received \$12,000 for a solar electricity project.
- **D.A.T.'s Candles, Princess Anne - \$11,000**
D.A.T.'s Candles in Princess Anne received \$11,000 for a solar electricity project.
- **Skyline Innovations, College Park - \$9,000**
Skyline Innovations in College Park received \$9,000 for a solar electricity project.
- **Geneva Farms Golf & Rest., Street - \$7,000**
Geneva Farms in Street received \$7,000 for a solar thermal project.

Award(s): 2 totaling \$814,000 from DOE / Treasury, Clean Energy Manufacturing Tax Credit (48C)

Location: Elkton

- **W.L. Gore & Associates, Inc., Elkton - \$604,000**
W.L. Gore & Associates, Inc., in Elkton received \$604,000 to re-equip two manufacturing facilities in New York and Maryland to produce the Gore Turbine Filter, a technology for gas turbines that delivers higher fuel efficiency and lower greenhouse gas emissions.
- **W.L. Gore & Associates, Inc., Elkton - \$210,000**
W.L. Gore & Associates, Inc., in Elkton received \$210,000 to retool a manufacturing facility with next-generation equipment used to produce a key component of fuel cell systems used to improve fuel efficiency in vehicles and other applications.

Award(s): \$1.2 million, Enhanced Geothermal Systems (EGS) Technology R&D

Location: Greenbelt

Array Information Technology in Greenbelt received \$1.2 million for Enhanced Geothermal Systems (EGS) Technology R&D. The funds are being used to develop a technical system to monitor seismic activity and its causes near EGS sites. It will use information to better understand and predict the issue of induced seismicity.

Award(s): \$150,000, Photovoltaic (PV) Systems Development

Location: Baltimore

Accustrata, Inc., in Baltimore received \$150,000 for Photovoltaic (PV) Systems Development. Funds are being used to develop a real-time optical monitoring system based on fiber optic reflectance measurements. This system is being optimized for use in a thin-film production environment in order to improve the process flow and reduce costs.

Award(s): \$279,000, Wind Energy Technology R&D and Testing

Location: Bethesda

Areva Federal Services, LLC, in Bethesda received \$279,000 for Wind Energy Technology R&D and testing. Funds are being used to survey the strategies and decision support tools for managing wind generation and the integration of wind forecasting.

MODERNIZING THE ELECTRIC GRID – 6 projects totaling \$212.6 million

Harnessing clean energy sources and integrating them onto a modernized electric grid, while giving consumers better choices and more control over their energy use. For more information, visit <http://www.energy.gov/recovery/smartgrid.htm>.

Award(s): \$750,000, Smart Grid Workforce Training

Location: Rockville

Princeton Energy Resources International (PERI), LLC, received \$750,000 for Workforce Training Programs. This funding creates an accredited Renewable Energy Certificate Program that supports the development of a skilled workforce in the rural cooperative electric power industry to accelerate the transition to sustainable energy sources.

Award(s): 2 totaling \$917,000, Enhancing State and Local Governments' Energy Assurance

Location: Annapolis, Baltimore

- **Maryland Energy Administration, Annapolis - \$717,000**
Maryland Energy Administration in Annapolis received \$717,000 for Enhancing State and Local Governments' Energy Assurance. This grant goes towards State Energy Assurance Planning.
- **Baltimore City Department of General Services, Baltimore - \$200,000**
Baltimore City Department of General Services in Baltimore received \$200,000 for Enhancing State and Local Governments' Energy Assurance. This grant goes towards the Local Energy Assurance Planning (LEAP) Initiative.

Award(s): \$10 million, Interoperability Standards and Framework (EISA 1305)

Location: Gaithersburg

The National Institute of Standards and Technology (NIST) in Gaithersburg received \$10 million to develop a framework for Smart Grid interoperability and cyber-security standards.

Award(s): \$200 million, Smart Grid Investment Grant Program (EISA 1306)

Location: Baltimore

Baltimore Gas and Electric in Baltimore received \$200 million under the Smart Grid Investment Grant to deploy a smart meter network and advanced customer control system for 1.1 million residential customers.

Award(s): \$894,000 from DOE, State Assistance on Electricity Policies

Location: Baltimore

Maryland Public Service Commission in Baltimore received \$894,000 for State Assistance on Electricity Policies. Funds are being used for assistance on State Public Utility Commissions to address Recovery Act electricity workload.

TRANSPORTATION – 2 projects totaling \$111 million

Investing in a new generation of advanced fuels and vehicles to reduce our dependence on foreign oil and revitalize domestic manufacturing. For more information, visit <http://www.energy.gov/recovery/vehicles.htm>.

Award(s): \$105 million, Advanced Battery Manufacturing

Location: White Marsh

General Motors in White Marsh received \$105 million to manufacture the second generation GM global rear wheel electric drive system.

Award(s): \$5.9 million, Clean Cities Alternative Fuel and Vehicles (AFV) Grant Program

Location: Annapolis

The Maryland Energy Administration in Annapolis received \$5.9 million for the Clean Cities Alternative Fuel and Vehicles Grant Program to deploy 150 heavy-duty hybrid vehicles.

CARBON CAPTURE & STORAGE – 1 project totaling \$170,000

Developing clean coal technologies so we can utilize America's coal resources sustainably. For more information, visit <http://www.energy.gov/recovery/ccs.htm>.

Award(s): \$170,000, Industrial Carbon Capture and Storage Applications

Location: Bethesda

Potomac-Hudson Engineering, Inc., received \$170,000 for environmental consulting services.

SCIENCE AND INNOVATION – 6 projects totaling \$2.9 million

Renewing our commitment to science and innovation to ensure global competitiveness in the future. For more information, visit <http://www.energy.gov/recovery/innovation.htm>.

Award(s): \$1.5 million, Advanced Networking Initiative

Location: Rockville

Acadia Optronics, LLC, received \$1.5 million to develop a high-capacity bandwidth solution.

Award(s): \$259,000, Computational Partnerships (SciDAC-e)

Location: Baltimore

Johns Hopkins University in Baltimore received \$259,000 for Computational Partnerships. Funds are used for a one-time stimulus of research efforts in applied mathematics and computer science to establish the computational foundation and insight needed to advance the Department's mission across a wide range of areas. These include developing novel, renewable and / or ecologically friendly energy sources and developing Smart Grids.

Award(s): \$750,000, Energy Sciences Fellowships and Early Career Research Program

Location: College Park

University of Maryland in College Park received \$750,000 for Energy Sciences Fellowships and Early Career Research Program. Funds are used for generation, imaging and control of Ultrafast Electrical Currents and Radiation.

Award(s): 3 totaling \$426,000, Small Business Innovation Research (SBIR) / Small Business Technology Transfer (STTR) Round 1

Location: College Park, Clarksville

- **Accustrata, Inc., College Park - \$150,000**
AccuStrata, Inc., in College Park received \$150,000 for Small Business Innovation Research (SBIR) / Small Business Technology Transfer (STTR). Funds are being used to develop a real-time optical control system to improve the thin film solar panel manufacturing process. This technology reduces the time it takes for solar energy to reach grid parity by increasing the conversion efficiency and reducing solar panel product cost.
- **E3tec Service, LLC, Clarksville - \$140,000**
E3tec Service, LLC, in Clarksville received \$140,000 for Small Business Innovation Research (SBIR) / Small Business Technology Transfer (STTR). Funds are being used for thermal separation processes.
- **E3tec Service, LLC, Clarksville - \$137,000**
E3tec Service, LLC, in Clarksville received \$137,000 for Small Business Innovation Research (SBIR) / Small Business Technology Transfer (STTR). Funds are being used for advanced modular heat exchangers and their innovative integration with the OTEC platform.

ENERGYEMPOWERS.GOV

Recovery Act Success Stories

Energy Empowers is a U.S. Department of Energy clean energy information service. Our team produces stories featuring the people and businesses that are fueling the energy transformation and economic recovery in America. For more stories from your state, go to energyempowers.gov/Maryland

ANNAPOLIS

Residential tax credits boost Maryland geothermal business

As more budget-savvy Americans turn to renewable energy to power their homes and cut expenses, business is booming for small companies such as Earth River Geothermal, Inc.

Mark Schultz, owner of the Annapolis, Md.,-based geothermal heat pump installation company, has worked on 30 geothermal projects in the past two years. Schultz says “the word is getting out” about geothermal systems, which use the stable temperature located just beneath the Earth’s surface to heat and cool homes.

A 30 percent renewable energy tax credit – extended by the American Recovery and Reinvestment Act – has slashed the average price of installing residential systems from \$25,000 to \$17,500. Grants from the Maryland Energy Administration and County property tax credits typically lower the price an additional \$4,500, making geothermal an attractive energy option. “Financial incentives really help,” Schultz says.

Unlike traditional HVAC systems that heat or cool outside air, geothermal systems regulate a home’s temperature using the Earth. The systems consist of underground pipes filled with a special fluid. During heating mode in winter, the fluid circulates through underground piping where heat energy is transferred from the ground (the heat source) to the fluid and then to the geothermal heat pump located in the home. To provide air conditioning, the process reverses. Heat is removed from the home and transferred to the loop fluid. As the warm fluid travels through the pipe in the earth, it is cooled. In the cooling mode, the earth serves as a “heat sink,” a place to deposit the heat removed from the home.

Because of this process, geothermal systems are energy efficient and can save homeowners 30 to 60 percent on heating and cooling costs, according to Energy Savers. The systems provide efficient hot water and are quiet since outdoor fans aren’t required to run them. Other benefits include low maintenance costs, increased home resale value and safety. “Unlike natural gas or coal, there’s no fire hazard,” says Schultz.

Schultz says he realized the value of geothermal energy a few years ago when he worked as a hydrogeologic consultant. He read about the positives of the renewable energy source in an industry publication and decided to install his own geothermal system. “Once you start to understand them, it makes complete sense and it’s a superior way to heat and cool homes,” Schultz says. “How can you beat low operating cost and increased comfort?”

After his consulting work began to slow down, he followed his passion for renewables and formed Earth River Geothermal. Owning a

geothermal business is a challenge, Schultz says, but “it’s a lot of fun.”

Schultz says when small geothermal companies succeed, so do other businesses such as parts suppliers, HVAC contractors, and well drillers. “The trickle down is huge,” says Schultz. “Money is being spent locally on equipment that is manufactured in the U.S.,” he adds.

Geothermal is shaping America’s clean energy economy, Schultz says. “All the money being spent on geothermal systems is in lieu of importing oil.”

DERWOOD

Geothermal system saves dollars, makes sense for Maryland family

Chris Gearon’s 24-year old oil furnace was tired. What happened if the furnace died during the winter? The air conditioning system was also aging and inefficient. Chris saw buying a new heating system as a major investment, and it wasn’t a decision he wanted to make on the fly.

Rather than wait for the ailing systems to break, Chris began researching heating and cooling options for his 4,400-square foot home in Derwood, Md. The family knew they wanted to explore alternative energy, and in the end, they chose to invest in a geothermal system to heat and cool the house.

“It really came down to the dollars and cents. Geothermal just made the most sense,” Chris says.

Geothermal systems tap into the temperature of the Earth a few feet below the surface, which in Derwood is about 55 degrees. The system transfers heat from the Earth to warm the house. To cool the house, the process reverses.

Chris contracted out the project, and by October, he chose a team. After some challenging moments throughout October and November– rerouting pipes, a 36-foot-tall drilling rig in his yard and landscaping concerns – the project was completed and in-use



A 36-foot-tall drill was needed to install the geothermal system at the Gearon’s house in Derwood, Md.

Energy tax credits

Residents who install solar energy, wind, geothermal, fuel cell or microturbine systems can receive a 30% tax credit with no cap for systems placed in service before December 31, 2016. For more on the tax breaks, visit the DOE’s website.

by Thanksgiving.

Since then, the system has heated the Gearon house through the holidays and a winter of record-breaking snowfall in the region.

“The system did well during the snow,” Chris says. The heat is much less dry than their old oil furnace, he adds.

Although their power bill was higher this winter – the geothermal

“It really came down to the dollars and cents.

Geothermal just made the most sense.” - Chris Gearon

pump runs on electricity – Chris really expects to see the savings start kicking in this summer, where he estimates he’ll use 25 to 50 percent less electricity to cool his house.

One major selling point for Chris was the tax credits. His installation started after the Recovery Act had been passed, and, as a result, he received a 30 percent tax credit on the project, totaling \$7,180.

Not only did Chris use Recovery Act tax credits, he also explored state and county funding. It turns out that Maryland would grant him a \$2,000 tax credit for the system, and Montgomery County would grant a \$5,000 property tax credit.

“With the Recovery Act funds, it made the upfront expense much more bearable,” says Chris.

The net cost for the installation was about the same as replacing the old oil furnace and AC system with a new one. He estimates that the geothermal system will be paid off entirely in three years.

“At the end of the day, it cost us about the same as if we just replaced our furnace and AC with another furnace and AC, but the big difference is that we’re not spending \$3,000 on oil bills anymore,” says Chris. “For us it kind of seemed like a no-brainer.”

Maryland small business helping lower solar costs

One potential problem with going solar across America is that the up-front costs of installing solar panels are often too high for the average consumer. Though panels can produce mounds of energy savings over a long period of time, the expense of installation is still a bit high for some. However, stimulus funding awarded to a small, Maryland-based business with six employees — AccuStrata Inc. — by the U.S. Department of Energy under the Recovery Act is helping the company develop technology to eliminate such barriers.

AccuStrata was awarded its third Small Business Innovation Research grant of \$150,000 in December. These grants will help the company increase the efficiency of solar panels and save manufacturers millions of dollars by reducing the number of lower-quality panels produced in a batch — cost savings that can then be passed on to consumers.

“Currently, manufacturers have no way of knowing how the [solar] films are growing inside their deposition chambers, at least until the entire film is deposited,” George Atanasoff, president of AccuStrata, says. “We are giving the manufacturer the ability to know, in real time, what the quality of the film is as it is deposited and how this will affect the final panel quality.”

The company’s prototype system uses fiber-optic sensors that monitor the reflectance and other qualities of the films that will end up on solar panels. AccuStrata believes its system will increase panel efficiency by as much as 15 percent, meaning, if only 25 percent of

the thin-film solar manufacturing market adopts the technology, it could save key industry players \$1 billion by 2013.

Maryland abuzz with retrofit converts

Tim Kenny got a college degree in fisheries biology, but his real passion lies in something he’s spent the last 20 years doing — helping American families in Maryland, Pennsylvania and Washington, D.C. He makes his living in the clean energy economy by finding ways people can save money on their energy bills and make their homes cleaner, safer and more comfortable.

About four years ago, he started Housewarmers, a business that performs energy audits and weatherization work on the homes of everyday clientele. Tim also helps community action agencies complete weatherization work as a contractor through a separate nonprofit business, C&O Conservation, for low-income programs recently boosted by the Recovery Act.

Energy efficiency tax credits and the country’s renewed focus on saving energy have added to the interest and spike in demand that Tim’s business has witnessed. He recently made 40 new in-house and contractor hires.

People who are getting into weatherization work across the country right now are experiencing a tremendous opportunity because the work requires an employee to be a “jack of all trades,” Tim says, proficient in everything from replacing windows to testing heating systems.

One client who has witnessed Housewarmers’ work first-hand is Dan Levy, a former building construction instructor at the University of Maryland. The teacher-turned-contractor is now living in the seventh home that he’s bought and remodeled. His current home was built in Baltimore in 1958 and was in dire need of weatherization.

Dan’s home was originally constructed with a radiant foil barrier but no other insulation — leading to big energy losses. There was no insulation in the walls or cathedral ceilings — numerous air leaks and those pretty, but inefficient ceilings, made his living and dining rooms “unusable” because of the temperature extremes.

“In the winter, the ceiling was like a refrigerator — it was just unbelievable how poorly this home performed,” he says.

After sealing up most of the leaks himself, Dan decided to call in Housewarmers to help with the insulation. His energy bills are now significantly lower than his neighbors’. And in addition to the cost savings, his home is more comfortable year-round. Now, as part of his own work, Dan shows his own clients how they can better utilize existing spaces, and from the lessons learned from Housewarmers he can make recommendations on how clients can make their homes more energy-efficient while he’s at it.

BALTIMORE

Baltimore boy’s asthma improved through retrofit

Lekquan Young rushed her 8-month-old son to the hospital when she noticed his chest looked sunken as he breathed. The doctor told her that her baby son had asthma. Today, her son is 8 years old and has suffered frequent asthma attacks at home.

“There was mold within the home and the air quality wasn’t good,” says Lekquan, a single mom living in Baltimore, Md. The roof over the kitchen leaked and it wasn’t insulated, she adds. “Air was coming into the house.”

But after a coalition called the Baltimore Green and Healthy Homes

Initiative gave Lekquan's house an air-quality and weatherization assessment and then a thorough home improvement, her son already feels better. The program, made possible with Recovery Act dollars, provides comprehensive health, safety, and energy efficiency upgrades to low-income families around the city.

The workers who came to her house replaced the broken hot water tank and installed a new furnace. They sealed up air leaks around the house, popped in a better ventilation system, and insulated the basement and attic. On top of all that, the team removed the old carpeting and showed Lekquan how to prevent mold – both of which had worsened her son DaWayne's asthma, she says.

The weatherization project, which took a few days to complete, even caught the attention of her neighbors. "They are very excited," she says. "Their kids may have the chance as well at having better homes like mine, so it's truly a blessing."

Lekquan heard about the weatherization program through her son's grandmother who knew other asthma sufferers that had been helped by it. The Green and Healthy Homes Initiative – part of by

the Coalition to End Childhood Lead Poisoning – improves air quality, mitigates pests and lead contamination, reduces fire and water risks and helps bring smaller utility bills home to families, which is especially important right now.

Over the past few years, high energy bills have made it hard for Lekquan, a single mom, to keep a balanced budget. Now she expects to save up to 40 percent on her energy costs. And the home is a lot more presentable for guests now, too.

"Thanksgiving, Christmas, my son is planning sleepovers with his friends. He's so excited about all that has been done in the home," she says. The third-grader has a lot to be proud of and so does Lekquan.

"We were just floored. I couldn't stop crying," she says. "I thought they were going to do small things, but it feels like I have a new house, like a mini 'extreme makeover.'"

The Coalition to End Childhood Lead Poisoning partnered with the Maryland Department of Housing and Community Development, the Baltimore Community Foundation, the Baltimore City Weatherization Program, and others, to create the Green and Healthy Homes Initiative.