

2012 Annual Development Plan West Virginia Division of Energy

The West Virginia Division of Energy (WVDOE) is required by 5B-2F-2(f) of the *West Virginia Code* to submit an annual report to the Governor and the Joint Committee on Government and Finance. It requires that the report “shall relate to the division’s implementation of the energy policy and the activities of the division during the previous year” on or before the first day of December of each year. This submission addresses activities for the period Jan. 1-Nov. 30, 2012.

The WVDOE consists of two divisions: the Office of Coalfield Community Development (OCCD) and the Energy Efficiency Program (EEP). The WVDOE director serves as chairman of the West Virginia Public Energy Authority (PEA) and administers its operation. The activities for the reporting period are addressed by energy resource as described in the state energy plan, “West Virginia Energy Opportunities”: fossil fuels, renewable energy and energy efficiency. This report will address each energy resource and the activities of WVDOE in supporting them.

American Recovery and Reinvestment Act activities:

The division is administering **\$43 million** in American Recovery and Reinvestment Act funding with activities under four programs: Energy Assurance, the State Energy Program (SEP), the Energy Efficiency and Conservation Block Grant (EECBG) and Recovery Act: Regional Save Energy Now-West Virginia.

- Energy Assurance/ARRA: **\$366,482** WVDOE has updated and submitted to the West Virginia Department of Military Affairs and Public Safety (DMAPS) a proposed revision to West Virginia’s Emergency Operations Plan (EOP) energy emergency section (Annex V). WVDOE, with assistance from WVU, revised the Annex V plan component for the EOP. Additionally, under contract from the WVDOE, WVU completed a data-tracking system to identify fuel supply availability and locations and to track emergency situations. The tool was utilized in the June 2012 derecho storm and October 2012 Hurricane Sandy events. The WVDOE also participated in two training exercises involving local and state government, federal government and private-sector stakeholders. These exercises addressed petroleum and other fuels and their impacts in emergency scenarios.
- State Energy Program/ARRA: **\$31 million** supported energy efficiency retrofits in state-owned buildings. Retrofits involving nine state agencies included lighting, HVAC and window upgrades in 113 buildings totaling more than 6 million square feet. This program also switched Huttonsville Correctional Center from oil to natural gas, saving \$400,000 in annual heating costs. The program also resulted in two solar projects – photovoltaic and thermal – atop the W.Va. Department of Environmental Protection’s headquarters building. **\$1 million** supported green jobs curricula (wind, solar, building performance and energy code training) in selected community and technical colleges. The next several pages provide details on SEP/ARRA projects.

W.Va. State Energy Program/American Recovery and Reinvestment Act		
Community and Technical College System of W.Va.	AWARD AMOUNT	Project Activities
Project 1: Eastern West Virginia Community and Technical College	\$315,696.20	Development of wind technician training/Completed
Project 2: West Virginia University at Parkersburg	\$236,811.07	Development of solar technician training/Completed
Project 3: West Virginia Northern Community College and Pierpont Community and Technical College	\$197,482.12	Development of building energy performance training/Completed
Project 4: Bridgemont Community and Technical College, New River Community and Technical College and WVU-Parkersburg	\$250,010.61	Development of energy code training/Completed
Total	\$1,000,000	
Higher Education Policy Commission of W.Va.	AWARD AMOUNT	Project Activities
Project 1: Bluefield State College	\$850,000	HVAC upgrade, Basic Science Bldg./Completed
Project 2: Concord University	\$1,000,000	HVAC renovations, Fine Arts Center/Completed
Project 3: Community & Technical College (Bridgemont)/WVUIT	\$450,000	HVAC improvements, Davis Hall/Completed
Project 4: Marshall University	\$298,900	Replace chiller, Corbly Hall/Completed
Project 5: Shepherd University	\$700,000	Replace classroom HVAC, Frank Center/Completed
Project 6: WV Northern Community College	\$141,107	Replace rooftop unit, New Martinsville campus/Completed
Project 7: WV State University	\$150,000	HVAC upgrade, Hill Hall faculty office building/Completed
Project 8: WV State University	\$50,000	Replace boilers, Hamblin Hall/Completed
Project 9: WV State University	\$100,000	Replace chillers, Ferrell Hall/Completed
Project 10: WVUIT	\$203,933.83	Replace HVAC controls, College of Business & Economics, Vining Library/Completed
Project 11: WV Northern Community College	\$124,417	Replace boiler, B & O Building/Completed
Project 12: West Virginia University	\$918,912.45	Convert fans to common system, Chemistry Research Lab/Completed
Project 13: WV Northern Community College	\$384,476	Replace roof top units, Weirton Campus/Completed
Project 14: Southern W.Va. Community and Technical College	\$200,000	HVAC renovation, Wyoming Campus/Completed
Project 15: Glenville State College	\$500,000	HVAC upgrade, Glenville campus/Completed
Project 16: WVU at Parkersburg	\$250,000	HVAC redesign, Caperton Center/Completed
Project 17: Potomac State College	\$82,150	Replace boiler, Academic Building/Completed

Project 18: Southern W.Va. Community and Technical College	\$500,000	HVAC renovation, Williamson Campus/Completed
Project 19: WVU Institute of Technology	\$111,122.95	Replace boiler, Tech Center/Completed
Project 20: WVU Institute of Technology	\$150,000	Replace boiler, engineering lab/Completed
Project 21: West Virginia University	\$195,513.60	Install time of day controls, Business & Economics Building/Completed
Project 22: West Virginia University	\$332,301	Install chilled water loop plate and frame, Downtown East Building/Completed
Project 23: Marshall University	\$375,764.17	Replace chiller, Science Hall/Completed
Project 24: Fairmont State University	\$500,000	HVAC upgrade, Hunt Haught Hall/Completed
Project 25: West Liberty University	\$611,928.77	Window replacement, Main Hall/Completed
Project 26: W.Va. School of Osteopathic Medicine	\$175,000	Replace HVAC, Frederik Smith Science Hall and Robert C. Byrd Clinic/Completed
Project 27: West Liberty University	\$138,071.23	HVAC automatic temperature controls, Chapel, Community Building, ASRC, Blatnik Hall, Curtis Hall, Bonar Hall, Arnett Hall, Rogers Hall, Boyd Hall, Krise Hall, Fine Arts Building, Student Union/Completed
Total	\$9,493,598	
School Building Authority of W.Va.	AWARD AMOUNT	Project Activities
Project 1: Fairmont Senior High School	\$2,123,835	HVAC, boiler replacement, Main Building and Freshman Building/Completed
Project 2: Berkeley Springs High School	\$311,368	HVAC and lighting upgrades/Completed
Project 3: Frankfort Middle School and Keyser Primary/Middle School	\$375,495.96	Cooling tower replacement/Completed
Project 4: Spring Mills Primary	\$481,543	Geothermal HVAC system/Completed
Project 5: Cameron High School	\$25,617.04	Solar PV/Completed
Total	\$3,317,859	
W.Va. Army National Guard	AWARD AMOUNT	Project Activity/Activities
Project 1: Blizzard Armory, Parkersburg	\$177,483	Lighting upgrades/Completed
Project 2: Bluefield (Brushfork) Armory	\$168,000	Lighting upgrades/Completed
Project 3: Charleston Armory	\$99,792	HVAC upgrade/Completed
Project 4: Clarksburg Armory	\$136,773.56	Lighting upgrades/Completed
Project 5: Dunbar Armory	\$73,735	Lighting upgrades/Completed
Project 6: Huntington-Barbour Armory	\$113,893	Lighting upgrades/Completed

Project 7: Keyser Armory	\$89,890	Lighting upgrades/Completed
Project 8: Martinsburg Armory	\$104,790	Lighting upgrades/Completed
Project 9: Moundsville Armory	\$99,341	Lighting upgrades/Completed
Project 10: Charleston Armory	\$9,832.44	Lighting upgrades, HVAC/Completed
Project 11: Weston Armory	\$92,995	Lighting upgrades/Completed
Total	\$1,166,525	
W.Va. Department of Administration	AWARD AMOUNT	Project Activities
Project 1: Buildings 22 (Charleston), 23 (Beckley), 25 (Parkersburg) and 36 (Charleston)	\$541,518.55	Interior lighting upgrades/Completed
Project 2: Buildings 5,6,7	\$2,045,487.45	Window replacement/Completed
Total	\$2,587,006	
W.Va. Department of Agriculture	AWARD AMOUNT	Project Activities
Project 1: Gus R. Douglass Agriculture Center at Guthrie	\$181,470	Lighting upgrades, nine buildings/Completed
Project 2: Gus R. Douglass Agriculture Center at Guthrie	\$68,530	HVAC replacement, seven buildings/Completed
Project 3: Inwood Farmers' Market	\$661,790	Food storage equipment upgrade, two buildings/Completed
Project 4: Gus R. Douglass Agriculture Center at Guthrie	\$40,725	HVAC replacement, seven buildings/Completed
Project 5: Gus R. Douglass Agriculture Center at Guthrie	\$11,346	Lighting upgrades, five buildings/Completed
Total	\$963,861	
W.Va. Department of Environmental Protection	AWARD AMOUNT	Project Activities
Project 1: W.Va. Department of Environmental Protection headquarters	\$244,562.85	Installation of 25.38-kw solar photovoltaic system/Completed
Project 2: W.Va. Department of Environmental Protection headquarters	\$46,605.15	Installation of solar thermal system/Completed
Total	\$291,168	
W.Va. Department of Health and Human Resources	AWARD AMOUNT	Project Activities
Project 1: Jackie Withrow Hospital and Hopemont Hospital	\$1,975,000	Boiler and steam distribution system replacement/Completed
Project 2: Mildred Mitchell-Bateman Hospital, William R. Sharpe, Jr. Hospital, Welch Hospital, John Manchin, Sr. Health Care Center, Lakin Hospital, Hopemont Hospital	\$3,025,000	Upgrade and/or replace windows, lighting and lighting controls/Completed
Total	\$5,000,000	

W.Va. Division of Corrections	AWARD AMOUNT	Project Activities
Project 1: Huttonsville Correctional Center	\$2,513,100	Fuel switching from oil to natural gas/Completed
Project 2: Denmar Correctional Center	\$516,726	Energy efficient window replacement/Completed
Project 3: Mt. Olive Correctional Center, Huttonsville Correctional Center and Pruntytown Correctional Center	\$4,165,054	Energy-saving infrastructure upgrade by energy service company/Completed
Total	\$7,194,880	
W.Va. Division of Natural Resources	AWARD AMOUNT	Project Activities
Project 1: Twin Falls Resort State Park and Hawks' Nest	\$1,410,000	HVAC upgrades at two state park lodges/Completed
Total	\$1,410,000	

\$32,746,000 (includes \$321,103 in administrative costs)

- Energy Efficiency and Conservation Block Grant Program: **\$9.5 million** WVDOE is currently administering, under a no-cost extension of its original ARRA contract, energy efficiency upgrades and retrofits involving 145 projects in municipal- and county-owned buildings owned by 103 local governments. WVDOE has contracted West Virginia's 11 Regional Planning and Development Councils to develop and administer these projects. Activities include installation of energy efficient lighting (approximately 25% of the projects); HVAC upgrades (50% of the projects); and insulation, weather sealing and replacement of windows and doors (approximately 25% of the projects). The next several pages provide details on these EECBG projects. Another component of this program is the WVU IAC Technical Assistance Program. The WVU Industrial Assessment Center (IAC) provided two presentations, a webinar and 22 assessments, including two on-site audits, to assist local governments in identifying energy efficiency measures that could be funded with EECBG monies. Additionally WVU IAC, in coordination with the West Virginia Manufacturing Extension Partnership (WVMEP) is currently providing energy and environmental audits to five local governments and selected manufacturing facilities through an EECBG E3 program. WVMEP is also providing E3 services to selected manufacturing and businesses statewide through this funding. A third activity funded through EECBG is the Building Energy Collaborative. The New River Community and Technical College (NRCTC) has completed the facilitation of regional stakeholders' meetings involving all RPDCs to promote awareness of energy codes and energy efficiency. Initiatives also include support for ENERGY STAR homes rating system training to Habitat for Humanity - West Virginia affiliates and examination of the commercial viability and utilization of West Virginia's low temperature geothermal resources for community and industrial purposes.

REGION 1	AWARD AMOUNT	Project Activities
City of Keystone	\$ 57,899.00	Replacement of HVAC at Keystone City Hall/Completed
City of Mullens –HVAC	\$ 43,592.00	HVAC upgrade at Mullens City Hall/Completed
City of Mullens – Lighting	\$ 31,000.00	Lighting upgrade at Mullens City Hall/Completed
City of Princeton – Doors	\$ 75,160.00	Window and door replacement at Mullens City Hall/Completed
City of Princeton - HVAC	\$ 31,942.00	HVAC upgrade at Princeton City Hall/Completed
City of Princeton - Insulation	\$ 59,450.00	Insulation and ceiling tile replacement at Princeton City Hall/Completed
City of Welch - HVAC	\$ 22,000.00	HVAC upgrade at Welch City Hall/Completed
City of Welch - Lighting	\$ 13,880.52	Lighting upgrade at Welch City Hall/Completed
McDowell County Commission	\$ 118,562.40	Lighting upgrade at the McDowell County Courthouse/Completed
Monroe Co. 911 - Lighting	\$ 2,381.39	Lighting upgrade at the Monroe County E-911 Center/Completed
Monroe Co. Courthouse - Boiler	\$ 36,500.00	HVAC replacement at the Monroe County Courthouse/Completed
Monroe Co. Courthouse - Doors	\$ 9,988.00	Door replacement at the Monroe County Courthouse/Completed
Monroe Co. Courthouse - Lighting	\$ 14,170.70	Lighting upgrade at the Monroe County Courthouse/Completed
Monroe Co. Attorney's Office - Doors	\$ 3,422.77	Door replacement at the Monroe County Prosecuting Attorney's Office/Completed
Monroe Co. Attorney's Office - HVAC	\$ 11,200.00	HVAC replacement at the Monroe County Prosecuting Attorney's Office/Completed
Monroe Co. Attorney's Office - Lighting	\$ 3,851.14	Lighting upgrade at the Monroe County Prosecuting Attorney's Office/Completed
Summers County Commission	\$ 114,500.00	Boiler replacement at the Summers County Courthouse/Completed
Town of Athens	\$ 16,178.00	Upgrade the HVAC at Athens Town Hall/Completed
Sophia Fire Station - Heater	\$ 8,750.00	Replace garage heaters at the Town of Sophia Fire Station/Completed
Sophia Town Hall - HVAC	\$ 11,752.00	Replace the HVAC at Sophia Town Hall/Completed
Sophia Town Hall - Windows	\$ 2,541.00	Replace six windows at Sophia Town Hall/Completed
Union Town Hall - HVAC	\$ 23,922.00	Replace the HVAC at Union Town Hall/Completed
Union Town Hall - Lighting	\$ 14,780.01	Upgrade the lighting at Union Town Hall/Completed
Union Town Hall - Weatherization	\$ 25,218.00	Installation of insulation at Union Town Hall/Completed
Wyoming County Commission	\$ 42,600.00	Upgrade the fluorescent lighting at the Wyoming County Courthouse/Completed
Total	\$ 795,240.93	
REGION 2	AWARD AMOUNT	Project Activities

City of Milton	\$	34,895.00	HVAC, window and door replacement at Milton City Hall/Completed
Town of Man	\$	97,250.00	Installation of insulation, doors, windows and lighting at Man Town Hall/Completed
Town of Matewan	\$	110,600.00	Installation of insulation at Matewan Town Hall and installation of new garage doors and HVAC at the Remote Fire Station/Completed
City of Logan	\$	38,450.00	HVAC replacement at Logan City Hall/Completed
City of Williamson	\$	157,800.00	HVAC, lighting, window and door replacement at the City of Williamson's Emergency Services Building/Completed
City of Kenova	\$	122,990.00	HVAC replacement in the Kenova Municipal Building and installation of infrared heaters in the garage area/Completed
Lincoln County Commission	\$	200,000.00	Renovate the dual-duct HVAC system in the Lincoln County Courthouse to a variable-air-volume HVAC system/Completed
Wayne County Commission	\$	181,421.00	Replace the HVAC system in the Wayne County Courthouse/Completed
Wayne County Annex	\$	18,500.00	Install a new HVAC system in the Wayne County Courthouse Annex/Completed
City of Milton Project 2	\$	7,950.00	Renovate lighting and install insulation in the roof and wall areas of the Milton City Building/Completed
Town of Man Project 2	\$	97,141.80	Install a solar photovoltaic panel system at the Man Town Hall/Completed
City of Kenova Project 2	\$	74,323.00	Install new windows, insulation and lighting at the Kenova Municipal Building/Completed
City of Logan Project 2	\$	9,718.36	Install insulation in Logan City Hall/In progress
Town of Gilbert (LJHCC)	\$	91,673.55	Upgrade the lighting at the Larry Joe Harless Community Center/Completed
Total	\$	1,242,712.71	
REGION 3		AWARD AMOUNT	Project Activities
Boone County Commission	\$	158,434.07	Upgrade the lighting and HVAC at the Boone County Courthouse/Completed
City of Chesapeake	\$	62,018.54	Replace a door and renovate the HVAC system and lighting at the Chesapeake City Hall/In progress
City of Hurricane	\$	193,688.84	Install a solar photovoltaic panel system at the Hurricane Water Treatment Facility; install oil heaters and solar panels at water treatment and communication facilities/In progress
City of Dunbar	\$	124,210.15	Upgrade the lighting, doors and HVAC at the Dunbar City Hall/In progress
Town of Handley	\$	13,770.00	Renovate the lighting at the Handley Town Hall/Completed
City of Saint Albans	\$	100,000.00	Upgrade lighting in designated parking areas throughout the city/Completed
Clay County Commission	\$	134,218.73	Upgrade the interior and exterior lighting and the HVAC system at the Clay County Courthouse/Completed
Town of Cedar Grove	\$	5,480.00	Replace the HVAC system in the Cedar Grove Town Hall/Completed

Total	\$ 791,820.33	
REGION 4	AWARD AMOUNT	Project Activity/Activities
City of Lewisburg	\$ 36,880.00	Replacement HVAC system at the Greenbrier County Library/Completed
City of Oak Hill	\$ 86,872.00	Replacement HVAC system at the Oak Hill City Hall/Completed
City of Richwood	\$ 47,750.00	Replacement HVAC system at the Richwood City Hall/Completed
City of Ronceverte - City Hall	\$ 7,908.00	HVAC upgrade work and new doors at Ronceverte City Hall/Completed
City of Ronceverte - Police Department	\$ 11,399.00	Replacement HVAC system at the City of Ronceverte Police Department building/Completed
City of Ronceverte - City Hall HVAC	\$ 25,638.00	New window installation at the City of Ronceverte Police Department building/Completed
City of Summersville - City Hall	\$ 53,989.00	Replacement HVAC system at the Summersville City Hall/Completed
City of Summersville - Youth Center - HVAC	\$ 67,750.00	Replace the HVAC system at Summersville Youth and Community Center/Completed
City of Summersville - Youth Center - Lighting	\$ 5,810.00	Replace the lighting at Summersville Youth and Community Center/Completed
Summersville - Youth Center - Doors	\$ 15,000.00	Replace windows and doors at Summersville Youth and Community Center/Completed
Fayette County Commission	\$ 109,514.58	Replacement of the boiler at the Fayette County Courthouse/Completed
Greenbrier County Commission	\$ 59,691.74	Window replacement at the Greenbrier County Courthouse and Courthouse Addition/Completed
Nicholas County Commission	\$ 121,000.00	Replacement of the HVAC chiller equipment and water heater at the Nicholas County Courthouse/Completed
Pocahontas County Commission	\$ 126,000.00	Lighting upgrade at the Pocahontas County Courthouse/Completed
Addison Center Building	\$ 10,950.00	Replacement of the HVAC system and two windows in the Town of Addison-Addison Center Building/Completed
Addison City Hall	\$ 12,794.29	Replace doors and windows in the Town of Addison Municipal Building/Completed
Addison Maintenance Building	\$ 7,800.00	Installation of doors in the Town of Addison Maintenance Building/Completed
Town of Ansted	\$ 72,405.00	Replacement of 16 windows and installation of new HVAC and doors in the Ansted Government Annex/Completed
Camden on the Gauley - HVAC	\$ 13,500.00	Replacement of HVAC at Camden on Gauley City Hall/Completed
Camden on the Gauley - Lighting	\$ 10,600.00	Upgrade of the lighting and installation of additional building insulation at Camden on Gauley City Hall/Completed
Camden on the Gauley - Windows	\$ 13,416.00	Replacement of the exterior and garage doors, windows and installation of an on-demand water heater system at Camden on Gauley City Hall/Completed
Town of Cowen	\$ 20,018.03	Replacement of the doors and windows at Cowen Town Hall/Completed

Durbin Town Hall	\$ 24,995.00	Insulation of the exterior walls and install replacement windows and doors at the Durbin Town Hall/Completed
Durbin Town Hall Addition	\$ 10,605.00	Installation of a new garage door and insulation at Durbin Town Hall/Completed
Town of Rainelle	\$ 39,860.00	Installation of insulated siding, doors and replacement windows at Rainelle City Hall/Completed
Webster County Commission	\$ 25,000.00	Installation of an HVAC unit in the Webster County Courthouse/Completed
Total	\$1,037,145.64	
REGION 5	AWARD AMOUNT	Project Activities
Calhoun County Commission	\$ 112,571.40	Replace the current air conditioning system and install remote control thermostats at the Calhoun County Courthouse/Completed
Town of Harrisville	\$ 38,500.00	Replace HVAC and lighting at the Harrisville Town Hall/Completed
Jackson County Commission	\$ 101,036.14	Replace existing chiller unit and current lighting fixtures at the Jackson County Courthouse/Completed
City of Paden City	\$ 39,785.00	Replace HVAC at the Paden City City Hall/Completed
City of Vienna - Windows	\$ 19,100.00	Replace windows at the Vienna City Hall/Completed
Paden City Health & Recreation	\$ 27,520.00	Replace the present HVAC system in the Health and Recreation Building/Completed
Pennsboro City Building	\$ 31,720.48	Replace HVAC at the Pennsboro City Building/Completed
Pleasants County Commission	\$ 56,378.00	Replacement of the HVAC system at the Pleasants County Courthouse/Completed
Roane County Commission	\$ 139,858.29	Replacement of the windows, doors and HVAC system at the Roane County Courthouse/Completed
Sistersville City Building	\$ 31,745.00	Upgrade the lighting and replace the HVAC system at the Sistersville City Building/Completed
City of Vienna	\$ 20,885.00	Replacement of the HVAC system at the Vienna City Building/Completed
Wirt County Commission	\$ 34,848.83	Replace the HVAC at the Wirt County Courthouse/Completed
Pleasants County Ballfield	\$ 84,250.00	Upgrade the lighting at the Pleasants County Park/Completed
Elizabeth	\$ 9,064.64	Replace windows and doors at the Elizabeth Town Hall/Completed
Jackson County Commission 2	\$ 8,632.99	Replace the HVAC system at the Jackson County Animal Shelter/Completed
Ritchie County Commission	\$ 27,000.00	Install insulation and upgrade the lighting at the Ritchie County Courthouse/Completed
Pleasants County Commission	\$ 8,899.64	Upgrade the interior and exterior lighting at the Pleasants County Courthouse/Completed
Roane County Commission 2	\$ 8,899.65	Upgrade lighting in a Circuit Court courtroom at the Roane County Courthouse/Completed
Wirt County Commission 2	\$ 8,899.65	Upgrade the HVAC at the WVU Extension and Wirt County EMS offices/Completed
Total	\$ 809,594.71	

REGION 6	AWARD AMOUNT	Project Activities
City of Mannington	\$ 52,548.91	Upgrade lighting, HVAC, insulation and doors at the Mannington City Hall, City Hall Annex and City Garage/Completed
City of Salem	\$ 156,641.64	Upgrade the insulation, doors, lighting and HVAC at the Salem City Building/Completed
City of Shinnston	\$ 71,056.62	Upgrade the insulation, windows, doors and HVAC at the Shinnston Municipal Building/Completed
Preston County Commission	\$ 200,000.00	Replace the boiler in the Courthouse Annex and HVAC and domestic hot water units in the jail building/Completed
Town of Star City	\$ 154,858.36	Installation of insulation, new HVAC system and controls, lighting and doors at the Star City Municipal Building/Completed
Taylor County Commission	\$ 51,510.00	Upgrade the lighting and HVAC system in the Taylor County Courthouse and Annex/Completed
Town of Barrackville	\$ 32,755.87	Installation of insulation and upgrade of the HVAC and lighting at the Barrackville Municipal Building and Community Center/Completed
Town of Farmington	\$ 153,045.00	Installation of insulation and replacement of doors, HVAC and lighting at the Farmington Town Hall and HVAC, lighting, hot water heater and insulation upgrades at the Farmington Community Center/In progress
Town of Lumberport	\$ 77,960.00	Installation of new windows and insulation at the Lumberport Community Center and window replacement at the Municipal Building/Completed
Total	\$ 950,376.40	
REGION 7	AWARD AMOUNT	Project Activities
Barbour County Commission	\$ 166,500.00	Replace the HVAC at the Barbour County Courthouse/Completed
City of Buckhannon	\$ 170,976.25	Install a ground-source heat pump and a new HVAC unit at the Buckhannon City Hall/Completed
City of Elkins	\$ 71,250.00	Replace windows at the Elkins City Hall/Completed
City of Parsons	\$ 168,169.00	Upgrade the HVAC system and lighting at the Parsons City Hall/Completed
City of Philippi	\$ 141,000.00	Upgrade the HVAC system at the Philippi City Hall/Completed
City of Thomas	\$ 28,500.00	Upgrade the HVAC at the Thomas City Hall/Completed
Lewis County Commission	\$ 30,400.00	Add insulation to the attic area of the Lewis County Courthouse/Completed
Town of Jane Lew	\$ 27,664.60	Install HVAC and a door in the Jane Lew Town Hall/Completed
Tucker County Commission	\$ 132,525.00	Installation of a new boiler and control systems in the Tucker County Courthouse/Completed
Total	\$ 936,984.85	
REGION 8	AWARD AMOUNT	Project Activities
Town of Franklin	\$ 29,500.00	Install a ground-source heat pump at the Franklin Town Office/Completed

Hampshire County Commission	\$ 200,000.00	HVAC, windows and lighting upgrades at the Hampshire County Sheriff's Building/Completed
Hardy County Commission	\$ 64,436.00	Lighting upgrades at the Hardy County Courthouse/Completed
City of Keyser	\$ 60,948.00	HVAC replacement at the Keyser City Hall/Completed
Mineral County Court House	\$ 70,405.00	Upgrade the HVAC, install interior storm windows and replace windows and doors in the Mineral County Court House/Completed
Pendleton County Court House	\$ 200,000.00	Replace the HVAC in the Pendleton County Court House/Completed
City of Romney	\$ 50,000.00	Install insulation and upgrade the HVAC at the Romney City Hall/Completed
Town of Wardensville	\$ 6,240.00	Replace windows at the Wardensville Town Hall/Completed
Town of Elk Garden	\$ 6,140.00	Replace HVAC and hot water heater at the Elk Garden Town Hall/In progress
Total	\$ 685,669.00	
REGION 9	AWARD AMOUNT	Project Activities
Morgan County Commission	\$ 196,840.61	Install a solar photovoltaic panel system at the Morgan County Courthouse/Completed
Town of Bath	\$ 32,309.35	Replace the HVAC and install insulation at the former Berkeley Springs B&O Railroad Passenger Station. Replace lighting, windows and HVAC at the Town of Bath Town Hall Office/Completed
Total	\$ 229,149.96	
REGION 10	AWARD AMOUNT	Project Activities
Village of Bethlehem	\$ 3,294.20	Lighting upgrades at park facilities/In progress
City of Cameron	\$ 73,166.26	Upgrade HVAC and air conditioning units at the Cameron City Building/Completed
City of Glen Dale	\$ 6,050.00	Install insulation in the Glen Dale City Hall/Completed
Marshall County Commission	\$ 170,000.00	Replace boilers in the Marshall County Courthouse and Courthouse Annex/Completed
City of McMechen	\$ 12,669.13	Replace the HVAC system at the McMechen City Building/Completed
City of Moundsville - Windows	\$ 21,665.31	Replace windows and doors at the Moundsville City Building/Completed
City of Moundsville - HVAC and lighting	\$ 32,420.17	Upgrade the HVAC and lighting at the Moundsville City Building/Completed
City of New Martinsville	\$ 13,700.00	Replace the HVAC at Old City Hall/Completed
Town of Pine Grove	\$ 30,565.31	Install new doors and windows at the Pine Grove Byrd Center/Completed
Town of Triadelphia	\$ 85,244.27	Upgrade the HVAC, insulation and lighting at the Triadelphia Town Hall/Completed
Wetzel County Commission	\$ 72,629.72	Install new windows at the Wetzel County Courthouse/Completed
Village of Clearview	\$ 6,500.00	Replace HVAC at the Clearview Community Building/Completed
Town of West Liberty	\$ 11,798.22	Upgrade the lighting and replace 10 windows at the Town

		Hall/Completed
Total	\$ 539,702.59	
REGION 11	AWARD AMOUNT	Project Activities
Village of Beech Bottom	\$ 30,635.83	Install a solar photovoltaic panel system at the Beech Bottom Municipal Building/Completed
Town of Bethany	\$ 31,550.00	Install energy efficiency measures in the new Community Center area at Bethany Town Hall/Completed
Brooke County Commission	\$ 29,500.00	Install a new HVAC system, lighting upgrades and energy controls at the Brooke County Courthouse/Completed
City of Chester	\$ 32,162.17	Replace the HVAC at the Chester Municipal Building/Completed
City of New Cumberland	\$ 32,162.17	Upgrade lighting at the New Cumberland Municipal Building/Completed
City of Follansbee	\$ 32,162.17	Upgrade lighting at the Follansbee City Building/In progress
Hancock County Commission	\$ 32,162.17	Upgrade lighting at six Hancock County Commission facilities/Completed
City of Wellsburg	\$ 40,237.57	Install windows at the Wellsburg City Building/Completed
Village of Windsor Heights	\$ 32,162.17	Install new exterior siding and insulation at the Windsor Heights Community Center/In progress
Total	\$ 292,734.35	

- American Reinvestment and Recovery Act: Regional Save Energy Now-West Virginia: A **\$500,000** ARRA award has enabled a multi-state approach to the WV Save Energy Now program to include collaboration with Pennsylvania and Tennessee. Activities have included energy assessments and industrial grade audits for industries as well as the development of an energy management certification pilot program and a clearinghouse for industrial energy efficiency applications.

Fossil fuels

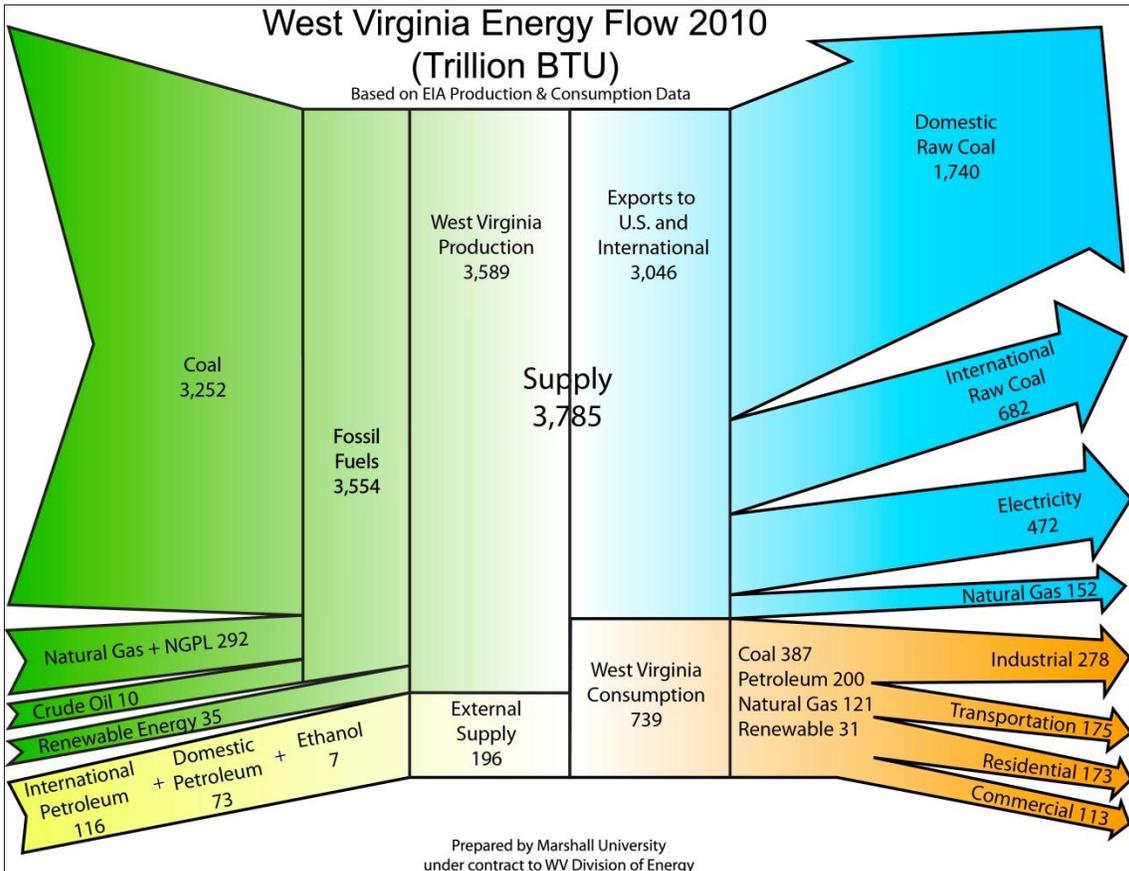
- Since its inception, WVDOE has coordinated annual Governor’s Energy Summits. The summits are sponsored by the West Virginia Governor’s Office and the West Virginia Department of Commerce and gather energy experts on a wide range of topics. In 2012, the sixth annual event, “West Virginia: Partnerships for Energy Development,” will feature presentations including “The Importance of Energy to Manufacturing,” “State Energy Plan Recommendations,” “Fiscal Impact of Energy Industries on the West Virginia Economy,” “Energy and Natural Resource Litigation,” “Economic Impact of New EPA Emissions Standards,” “Marcellus Development in West Virginia,” “West Virginia Natural Gas Vehicles Task Force,” “Energy Speaks Education,” “A Utility Perspective on Coal Utilization and West Virginia’s Electric Infrastructure,” “Longview – An Advanced Supercritical Power Plant,” “West Virginia Environmental Perspective,” “Solar Energy Installations in West Virginia,” “TransGas,” and “CO₂ for Enhanced Oil Recovery.”
- During 2012, WVDOE worked with West Virginia University and Marshall University to develop recommendations for the 2013-2017 West Virginia State Energy Plan. This plan will develop analyses and policy recommendations to guide the state in reliably meeting its future energy needs in a cost-effective and sustainable manner while fostering an innovative clean energy economy. The plan is updated every five years. A series of meetings was held to invite public comment on the state energy plan in Huntington, Morgantown and Martinsburg. The

meetings included discussion of increased energy efficiency, traditional fossil energy forms and renewable energy. Draft recommendations and public comments may be found at www.energywv.org/energyplan.

- Fueling an increased interest in natural gas and propane as transportation fuels are the Governor's Natural Gas Vehicle Task Force as well as the state's commitment to a multi-state Natural Gas Vehicle Memorandum of Understanding that leverages greater purchasing power for CNG vehicles. The task force was established in June 2012 with a mission to assess the feasibility of transitioning the state's vehicle fleet to natural gas as a fuel source and developing an infrastructure to support natural gas vehicles. At the first meeting of the task force in July 2012, propane was added to compressed natural gas as a fuel of focus. The two main deliverables of the task force this year were to announce the addition of natural-gas fueled vehicles on the 2013 model year statewide motor vehicle contract and the inclusion of propane as an acceptable alternative fuel for the state's school bus fleet.
- WVDOE co-sponsored the first annual TransTech Energy Business Development Conference hosted by the West Virginia University National Research Center for Coal and Energy (NRCCE). The conference was created to stimulate energy industry growth within West Virginia by connecting emerging energy start-up companies with potential investors. Fifteen companies presented their ideas. NRCCE hopes the conference will become a reoccurring annual event.
- In 2011, a site ground-breaking event was held for the \$3 billion TransGas Development Systems LLC (TGDS) coal-to-liquids plant in West Virginia. Air emissions permits have been finalized and facility construction is expected to begin in 2013. The company has contracted with gasification technology provider, Uhde, and secured a methanol-to-gasoline technology license from Exxon Mobil. Projected to be operational by 2017, the plant will be built in Mingo County's new energy park at Wharnccliffe. The construction phase is expected to generate 3,000 jobs. When fully staffed, the facility will employ as many as 200 workers. TGDS estimates the facility will use up to 3 million tons of locally mined coal a year to produce approximately 18,000 barrels of synthetic gasoline and 300 barrels of liquefied petroleum gas (propane) per day.
- The Center for Business and Economic Research (CBER) at Marshall University is engaged in several components of legislatively directed activities related to preparation of an energy use database and is continually updating the information. Over the past year, CBER has been working to develop a database that organizes energy statistics collected by the Energy Information Administration and make it available to the WVDOE in a more user-friendly format. CBER also created energy flow charts for the state of West Virginia for the years 2005, 2006, 2007, 2008, 2009 and 2010 detailing energy production by resource, exports by resource and consumption by sector. **[See chart, West Virginia Energy flow 2010 (Trillion BTU)]** Time series data on the components of the charts are also collected and posted within CBER's website. Additionally, CBER researchers prepared the "Energy Blueprint," which calls for the environmentally responsible development of all forms of feasible energy technologies, from clean coal to coal liquefaction, natural gas, biomass, hydrogen, hydro, wind and solar power. The Blueprint may be found at www.energywv.org.

West Virginia Energy Flow 2010 (Trillion BTU)

Based on EIA Production & Consumption Data



Prepared by Marshall University
under contract to WV Division of Energy

The Office of Coalfield Community Development's (OCCD) activities for the period are as follows:

- The OCCD reviewed 100 permits, consisting of 22 original notifications of requirement to file community impact statements (CIS). The office approved 63 new and updated CIS plans during the period. This number includes amended CIS submissions for changes made to the original. The OCCD approved 15 exemptions from requirements to file CIS plans. Most of these exemptions were granted to non-surface mine operations and permits that were beyond their first renewal period.
- All Land Use Master Plans have been developed for the 31 coalfield counties; however, only 27 of the 31 coalfield counties have adopted their personalized county plan.
- A Memorandum of Understanding (MOU) between the OCCD and the West Virginia National Guard permits this office to continue the evaluation of surface-mined sites. This MOU advanced the use of surfaced-mined properties as a component of "Fort West Virginia." Several mined sites throughout West Virginia have been and will be utilized for training grounds for national security purposes. These sites include Mine Resistant Ambush Protected (MRAP) vehicle training on the Fola surface-mined site in Clay County and the Tyler Morgan mined site located on the Kanawha/Fayette county line. Drop zone training is conducted on surface-mined sites located in Logan and potentially Webster counties.
- The OCCD has met several land owners/mining operations and has reviewed and made recommendations regarding potential development opportunities on surface-mined lands.
- The OCCD met with local Economic Development Authorities in all 31 coalfield counties. A review of projects included housing, business and local government use of surface-mined properties.
- The OCCD worked in conjunction with Marshall University to implement the Division of Energy's grant from the Appalachian Regional Commission to promote renewable energy development on surface-mined lands.
- The OCCD meets weekly with the W.Va. Development Office for briefings on economic development efforts in coalfield counties.
- The OCCD worked with the Rahall Transportation Institute (RTI) to assist in the collection of data to model potential economic benefits along the proposed King Coal Highway system.
- The OCCD is working with RTI to develop a new GIS System as an economic development tool for the 31 coalfield counties. This new application should be ready to launch in the summer of 2013.
- The OCCD is working with RTI to develop comprehensive plans in: Greenbrier, Lincoln, McDowell, Mingo, Raleigh, Upshur, Wayne, Webster and Wyoming counties to meet the legislative requirements of the Land Use Master Plan.

2012 action report summary:

- Work with county development authorities that have current mining operations with large infrastructure and building investments within the county to ensure those resources remain in place after mine closure.
- Work with 31 coalfield counties to develop or update their Land Use Master Plans by providing pertinent information.
- Work with the Corridor G Regional Development Authority as well as other county development authorities in Lincoln, Boone, Logan and Mingo counties to recruit, expand or develop economic development projects that will create various opportunities in that region of the state.
- Coordinate and schedule site tours in southern coalfield counties as requested by the Army Corps of Engineers. The sites will be evaluated for potential long-term housing locations in response to continuing flood issues.
- Work to assist WVU Brownfields Assistance Center in an EPA-funded study to identify sustainable energy parks on reclaimed mine sites.
- Work with Marshall University Brownfields Assistance Center to develop marketing plans for reclaimed mines site in various distressed coalfield counties.
- Work with Marshall University Research Corporation to develop an Economic Impact Study of jobs on surface mined lands.
- Market renewable energy opportunities on reclaimed mined sites as components of the PJM grid's state portfolios.
- Work with the Hatfield McCoy Trails system to identify property located on reclaimed mine sites for future development opportunities as well as other tourist-based industries.
- Coordinate site visits of interested developers on bond-released sites where potential projects can occur, such as Bull Push, Indian Ridge Industrial Park, Mingo Industrial Park and sites identified along Corridor G, the Kanawha River, and the Monongahela River.

Renewable energy

- As of November 2012, 42 county school systems use biodiesel blends in their school buses, which accounted for 4.7 million gallons used in nearly 3,000 buses.
- WVDOE received \$400,000 from the Appalachian Regional Commission for the development of renewable energy projects on surface-mined lands. The program is managed through WVDOE's relationship with Marshall University's Center for Environmental, Geotechnical and Applied Sciences (CEGAS). Initiative 1 projects are listed below. Initiative 2 includes ongoing Sonic Detection and Ranging (SODAR) wind data collection and analysis.
 - National Mine Land Reclamation Center in partnership with White Technologies, LLC, to plant *Arundo donax*, or giant reed, for evaluation as a potential input for West Virginia's chemical industry. Three central and southern WV abandoned and active mine sites were selected for the project: Alton (a bond-forfeiture site under the control of WVDEP, an area with existing biofuel plots) in Alton, W.Va.; Coal-Mac (a large surface mine complex operated by Arch Coal) in Holden, W.Va., and Argus Energy (another large surface operation with various permits in different stages) in Wyoming County, W.Va.
 - Soil preparation and planting of hardwood trees will establish tree cover on two former surface mine sites in Randolph County to improve soil and water

- conditions, increase terrestrial carbon capture and produce wood for future commercial use.
- Planting of tree seedlings on a 52-acre tract of land in Webster County, W.Va., will establish tree cover on former surface mine land to improve soil and water conditions, increase terrestrial carbon capture and produce wood for future biomass use.
 - Evaluation of woody biomass plantings on Arch Coal/ICG Company lands in Preston County will establish tree cover on surface mine lands in WV to stabilize and improve soil and water conditions, increase carbon pooling and produce woody biomass crops.
 - At McDowell County's Mount View High School, installation of a 5.28-kilowatt solar panel system will provide the primary source of electricity to its computer lab stations and will become a teaching tool for students, teachers, parents, school board members and the local community. Monitoring of the solar panel system will be incorporated into science classes and will work in conjunction with their ground-level ozone study, an ongoing project funded by the University of Colorado, where field data is recorded and transferred via Internet to the University of Colorado for further evaluation and uploaded to Google Earth for public viewing. Data from the ozone study will be time-correlated with solar power generation data to compare solar power output and associated ozone levels.
 - Monongalia County Schools: Installation of a 240-watt solar panel system that will generate 6 kilowatts to provide variable amounts of electricity to the school for use as a teaching tool for students, teachers, parents of students, school board members and the local community. Monitoring of the solar panel system will be incorporated into science classes. All generated power will feed directly into the facility's existing power system. University High School science department personnel will be able to monitor power generation details to determine the instantaneous and long-term solar power output by the system and individual panels as well as carbon offset of the system and related aspects.
 - Additionally, Marshall University's CEGAS is developing marketing packages for surface mine land properties.
- In March 2012, West Virginia enacted legislation (H.B. 2740) that restricts housing associations from prohibiting solar energy systems on homes. Any governing document executed or recorded after June 8, 2012, that effectively prohibits or restricts the installation or use of a solar energy system is void and unenforceable. A solar energy system is defined as "a system affixed to a building or buildings that uses solar devices, which are thermally isolated from living space or any other area where the energy is used, to provide for the collection, storage, or distribution of solar energy." This prohibition does not apply to provisions that impose "reasonable restrictions" on solar energy systems, including restrictions for historical preservation, architectural significance, religious or cultural importance to a given community. In addition, the law specifies that state and local authorities may regulate solar energy systems by establishing land use,

- health and safety standards, and that housing associations may restrict or limit the installation of solar energy systems installed in common areas and common structures.
- The West Virginia Wind Working Group, in cooperation with WVDOE and Marshall University, hosted its annual forum on wind energy development in West Virginia. More than 50 representatives of the wind energy industry, government, utilities and the environmental community attended the session, which featured presentations including “The AES Energy Storage and Laurel Mountain Wind Facility” “Wind Integration Initiatives at the PJM Interconnection,” “Renewable Energy and Appalachian Power Company: 2012 Update,” “Regional State Policy Issues Critical to the Wind Industry and Where PJM Stands in Its Process to Comply with FERC Order 1000 on Transmission Planning for Public Policy Requirements and Cost Allocation,” “The Virginia Center for Wind Energy at JMU: A Unique Resource for the University and for the Commonwealth,” “Virginia’s Renewable Energy Permit-by-Rule Program,” “Wind Energy Resource Assessment and Power Production Estimates as an Undergraduate Project,” and “Wind Resource Assessment Projects at Marshall University Using a SODAR.” A tour of the AES Energy Storage and Laurel Mountain Wind Facilities was also provided.
 - WVDOE along with the West Virginia Geological and Economic Survey sponsored the Enhanced Geothermal Energy Development Conference on May 22, 2012. This conference provided an overview of the state of enhanced geothermal systems research and development relevant to West Virginia.
 - The Appalachian Hardwood Center, Bio-based Materials Center and National Research Center for Coal and Energy at West Virginia University and the West Virginia Division of Energy hosted a conference on biomass and coal opportunities on September 19, 2012, at the Erickson Alumni Center in Morgantown, WV. Topics at the one-day event included biomass and coal development opportunities, bioenergy research and development, torrefied biomass and coal blends, energy policy and environmental impacts, and the technical and financial feasibility of coal and biomass as feedstocks for liquid transportation fuels.

Energy efficiency

- In March 2012, West Virginia enacted the Green Buildings Act, which applies to all new construction of public buildings, buildings receiving state grant funds and buildings receiving state appropriations. Buildings that had not entered the schematic design phase prior to July 1, 2012, must be designed and construction to comply with the International Energy Conservation Code and the ASHRAE Standard 90.1-2007. If a building is also receiving federal funds, the IECC and ASHRAE standards only apply if they are consistent with federal standards.
- WVDOE provides E3-WV, a technical assistance program that assists small businesses and manufacturers in improving their economic, energy and environmental performance. The program helps businesses adapt and thrive in a new business era focused on energy efficiency and sustainability. Three organizations headquartered at West Virginia University – Industries of the Future-West Virginia (IOF-WV), the DOE-funded Industrial Assessment Center (IAC) and the West Virginia Manufacturing Extension Partnership (WVMEP) – work together in carrying out the project. Businesses that have received E3 assistance in 2012 include Hughes Supply Corporation, Beckley; Mining Controls Inc., Beckley; GE Energy, Charleston; PTT, Point Pleasant; Co-Ex Plastics, Milton; WV Cold Drawn, Point

Pleasant; Maggie's Salsa, St. Albans; Tramco, Williamson; Architectural Wood, Ronceverte; Flying W Plastics, Glenville; Veolia Water, Williamson.

- Supported by WVDOE, student teams with the WVU Projects With Industry program and the Industrial Gas Utilization and Industrial Assessment programs continue to provide process energy analyses to West Virginia industry and manufacturers. Businesses include HKEC Castings, Weston; Clearon Corp, South Charleston; Novelis Aluminum Company, Fairmont; Swanson Plating, Fairmont; Mullican Flooring, Ronceverte; GrafTech Company, Clarksburg; Superior Laundries, Fairmont; GE Energy, Charleston; Dyna Mix, Grafton; Lockheed Martin, Clarksburg; and J.C. Lumber, Elkins. The National Engineering Academy recognized the Projects with Industry Program as one of 29 exemplary programs in the country for infusing realistic engineering into an academic program.
- The WVDOE-supported Center for Building Energy Use (CBEU) at WVU provides energy benchmarking, audits and technical assistance. In 2012, the program assisted Ohio County Schools in identifying and assisting in qualifying up to seven schools for the prestigious ENERGY STAR® building award.
- FirstEnergy's West Virginia's utilities (Mon Power and Potomac Edison) offered the Business Lighting Incentive Program in accordance with a Dec. 30, 2011, order issued by the W.Va. Public Service Commission (PSC). This program is designed to help meet the state's goals to reduce electricity usage and peak demand while encouraging commercial, industrial and government customers to save energy and money. FirstEnergy's commercial, industrial and governmental customers are eligible to participate in the program, which provides a performance-based rebate for energy efficient lighting equipment and controls that save energy (kWh). Existing buildings and new construction projects are eligible. The lighting performance incentive is \$0.05/kWh saved in the first year after an upgrade. All equipment installed must be code compliant and installed in accordance with FirstEnergy standards. A variety of lighting products and controls technologies is eligible for the program as measurable savings are the only metric used to determine rebate levels. WVDOE supports this initiative by providing assistance to FirstEnergy in making West Virginians aware of this rate-base funded efficiency program.
- In 2012, Appalachian Power and AEP continued to offer commercial and industrial electric customers in West Virginia rebates on energy efficient lighting and HVAC equipment. Measures can be installed by a licensed contractor participating in the network or self-installed and inspected afterward. Once work is completed by the contractor and the paperwork has been submitted, a rebate check will be sent in under 45 days. Eligible items include T8 upgrades, HPT8 upgrades, T5 upgrades, LED upgrades, CFL upgrades, occupancy sensors, pulse-start metal halide, VFD installation, air conditioner upgrades, heat pump upgrades, water cooled chiller upgrades, packaged terminal air conditioner upgrades and programmable thermostats. WVDOE supports this initiative by providing assistance to Appalachian Power in making West Virginians aware of this rate-base funded efficiency program.
- Also in 2012, Appalachian Power, Wheeling Power Company and AEP continued to offer residential electric customers in West Virginia rebates on energy efficient weatherization and HVAC equipment. Measures can be installed by a licensed contractor participating in the network or self-installed and inspected afterward. Once work is completed by the contractor and the paperwork has been submitted, a rebate check will be sent in under 45 days. The Low Income Home Energy Audit/Retrofit Program provides a free in-home energy audit. A GoodCents technician energy specialist will be sent to examine the home, generate a custom audit report and install simple low-cost energy efficiency improvements. Some measures that may be included in addition to the home energy improvements report are compact fluorescent light bulbs, up to six faucet aerators for kitchen and bathroom, up to three low-flow showerheads, LED nightlights, two water heater temperature adjustments,

water heater pipe insulation, refrigerator thermometer, refrigerator coil cleaning brush and basic air sealing.

- In conjunction with the facility upgrades funded by the American Recovery and Reinvestment Act (ARRA) and the Energy Efficiency and Conservation Block Grant (EECBG), ENERGY STAR® Portfolio Manager services were offered to the grant recipients. These services included creating a building profile in the Portfolio Manager database and inputting energy usage to better understand where a facility stands nationally and how that facility's energy usage has changed since the installation of energy efficient upgrades. This was an available service provided by the WVDOE. It required the participant to collect energy usage data (electricity and natural gas consumption generally) for the previous 24 months as well as identify facility operating hours, number of computers on the premises and how many workers were on a shift. Twelve facilities participated in the program and the results were very informative.