

## 2011 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, 2011.

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 **\$41.8 million** in American Recovery and Reinvestment Act Funding. 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** is supporting a review and development of a proposed revision to West Virginia’s Emergency Operations Plan (EOP) energy emergency section (Annex V). WVDOE, in cooperation with the West Virginia Department of Military Affairs and Public Safety (DMAPS) and WVU, are developing a revised Annex V plan component for the EOP, have completed a data tracking system to support the proposed planning component and participated in regional and in-state 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** is supporting energy efficiency retrofits in state-owned buildings. Retrofits, involving nine state agencies, include lighting, HVAC and window upgrades in 105 buildings totaling nearly 6 million square feet. This program also will result in switching Huttonsville Correctional Center from oil to natural gas, saving \$400,000 in annual heating costs. The program will also result in a geothermal system for a new elementary school in Berkeley County and a solar project at a new high school in Marshall County. **\$1 million** is supporting 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.

<b>W.Va. State Energy Program/American Recovery and Reinvestment Act</b>		
<b>Community and Technical College System of W.Va.</b>	<b>AWARD AMOUNT</b>	<b>Project Activity/Activities</b>
Project 1: Eastern West Virginia Community and Technical College	\$250,000	Development of wind technician training
Project 2: West Virginia University at Parkersburg	\$250,000	Development of solar technician training
Project 3: West Virginia Northern Community College and Pierpont Community and Technical College	\$250,000	Development of building energy performance training
Project 4: Bridgemont Community and Technical College, New River Community and Technical College and WVU-Parkersburg	\$250,000	Development of energy code training
Total	\$1,000,000	
<b>Higher Education Policy Commission of W.Va.</b>	<b>AWARD AMOUNT</b>	<b>Project Activity/Activities</b>
Project 1: Bluefield State College	\$850,000	HVAC upgrade, Basic Science Bldg.
Project 2: Concord University	\$1,000,000	HVAC renovations, Fine Arts Center
Project 3: Community & Technical College (Bridgemont)/WVUIT	\$450,000	HVAC improvements, Davis Hall
Project 4: Marshall University	\$298,900	Replace chiller, Corbly Hall
Project 5: Shepherd University	\$700,000	Replace classroom HVAC, Frank Center
Project 6: WV Northern Community College	\$141,107	Replace rooftop unit, New Martinsville campus
Project 7: WV State University	\$150,000	HVAC upgrade, Hill Hall faculty office bldg.
Project 8: WV State University	\$50,000	Replace boilers, Hamblin Hall
Project 9: WV State University	\$100,000	Replace chillers, Ferrell Hall
Project 10: WVUIT	\$253,598	Replace HVAC controls, College of Business & Economics, Vining Library
Project 11: WV Northern Community College	\$124,417	Replace boiler, B & O Building
Project 12: WVU	\$790,000	Convert fans to common system, Chemistry Research Lab
Project 13: WV Northern Community College	\$384,476	Replace roof top units, Weirton Campus
Project 14: Southern W.Va. Community and Technical College	\$200,000	HVAC renovation, Wyoming Campus
Project 15: Glenville State College	\$500,000	HVAC upgrade, Glenville campus
Project 16: WVU at Parkersburg	\$250,000	HVAC redesign, Caperton Center
Project 17: Potomac State College	\$200,000	Replace boiler, Academic Building

Project 18: Southern W.Va. Community and Technical College	\$500,000	HVAC renovation, Williamson Campus
Project 19: WVU Institute of Technology	\$90,000	Replace boiler, Tech Center
Project 20: WVU Institute of Technology	\$100,000	Replace boiler, Engineering lab
Project 21: West Virginia University	\$210,000	Install time of day controls, Business & Economics Bldg.
Project 22: West Virginia University	\$350,000	Install chilled water loop plate and frame, Downtown East Bldg.
Project 23: Marshall University	\$376,100	Replace chiller, Science Hall
Project 24: Fairmont State University	\$500,000	HVAC upgrade, Hunt Haught Hall
Project 25: West Liberty University	\$750,000	Window replacement, Main Hall
Project 26: W.Va. School of Osteopathic Medicine	\$175,000	Replace HVAC, Frederik Smith Science Hall and Robert C. Byrd Clinic
Total	\$9,493,598	
School Building Authority of W.Va.	AWARD AMOUNT	Project Activity/Activities
Project 1: Fairmont Senior High School	\$2,123,835	HVAC, boiler replacement, Main Building and Freshman Building
Project 2: Berkeley Springs High School	\$311,368	HVAC and lighting upgrades
Project 3: Frankfort Middle School and Keyser Primary/Middle School	\$375,496	Cooling tower replacement
Project 4: Spring Mills Primary	\$481,543	Geothermal HVAC system
Project 5: Cameron High School	\$25,617	Solar PV, greenhouse
Total	\$3,317,859	
W.Va. Army National Guard	AWARD AMOUNT	Project Activity/Activities
Project 1: Blizzard Armory, Parkersburg	\$177,483	Lighting upgrades
Project 2: Bluefield (Brushfork) Armory	\$168,000	Lighting upgrades
Project 3: Charleston Armory	\$99,792	HVAC upgrade
Project 4: Clarksburg Armory	\$136,774	Lighting upgrades
Project 5: Dunbar Armory	\$73,735	Lighting upgrades
Project 6: Huntington-Barbour Armory	\$113,893	Lighting upgrades
Project 7: Keyser Armory	\$89,890	Lighting upgrades
Project 8: Martinsburg Armory	\$104,790	Lighting upgrades
Project 9: Moundsville Armory	\$99,341	Lighting upgrades
Project 10: Point Pleasant Armory	\$9,832	Lighting upgrades

Project 11: Weston Armory	\$92,995	Lighting upgrades
Total	\$1,166,525	
W.Va. Department of Administration	AWARD AMOUNT	Project Activity/Activities
Project 1: Buildings 22 (Charleston), 23 (Beckley), 25 (Parkersburg) and 36 (Charleston)	\$487,006	Interior lighting upgrades
Project 2: Buildings 5,6,7	\$2,000,000	Window replacement
Project 3: Capitol	\$100,000	Exterior lighting upgrades
Total	\$2,587,006	
W.Va. Department of Agriculture	AWARD AMOUNT	Project Activity/Activities
Project 1: Gus R. Douglass Agriculture Center at Guthrie	\$181,470	Lighting upgrades, nine buildings
Project 2: Gus R. Douglass Agriculture Center at Guthrie	\$68,530	HVAC replacement, seven buildings
Project 3: Inwood Farmers' Market	\$661,790	Food storage equipment upgrade, two buildings
Project 4: Gus R. Douglass Agriculture Center at Guthrie	\$40,725	HVAC replacement, seven buildings
Project 5: Gus R. Douglass Agriculture Center at Guthrie	\$11,346	Lighting upgrades, five buildings
Total	\$963,861	
W.Va. Department of Environmental Protection	AWARD AMOUNT	Project Activity/Activities
Project 1: W.Va. Department of Environmental Protection headquarters	\$216,168	Installation of 24.255 kw solar photovoltaic system
Project 2: W.Va. Department of Environmental Protection headquarters	\$75,000	Installation of solar thermal system
Total	\$291,168	
W.Va. Department of Health and Human Resources	AWARD AMOUNT	Project Activity/Activities
Project 1: Jackie Withrow Hospital and Hopemont Hospital	\$1,975,000	Boiler and steam distribution system replacement
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
Total	\$5,000,000	
W.Va. Division of Corrections	AWARD AMOUNT	Project Activity/Activities

Project 1: Huttonsville Correctional Center	\$2,513,100	Fuel switching from oil to natural gas
Project 2: Denmark Correctional Center	\$516,726	Energy efficient window replacement
Project 3: Mt. Olive Correctional Center, Huttonsville Correctional Center and Pruntytown Correctional Center	\$4,090,054	Energy-saving infrastructure upgrade by energy service company
Project 4: Denmark Correctional Center	\$75,000	Energy efficient door replacement
Total	\$7,194,880	
W.Va. Division of Natural Resources	AWARD AMOUNT	Project Activity/Activities
Project 1: Twin Falls Resort State Park and Hawks' Nest	\$1,410,000	HVAC upgrades at two state park lodges
Total	\$1,410,000	

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

- Energy Efficiency and Conservation Block Grant Program: **\$9.5 million** is currently providing energy efficiency upgrades and retrofits to 141 projects in municipal and county-owned buildings owned by 101 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 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. WVU is currently providing energy and environmental audits to five local governments and selected manufacturing facilities through an EECBG E3 program. A third activity funded through EECBG is the Building Energy Collaborative. The New River Community and Technical College (NRCTC) has facilitated five regional stakeholders' meetings 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 Activity/Activities
City of Keystone	\$ 57,899.00	Replacement of HVAC at Keystone City Hall
City of Mullens -HVAC	\$ 43,592.00	HVAC upgrade at Mullens City Hall
City of Mullens - Lighting	\$ 31,000.00	Lighting upgrade at Mullens City Hall
City of Princeton - Doors	\$ 75,160.00	Window and door replacement at Mullens City Hall
City of Princeton - HVAC	\$ 31,942.00	HVAC upgrade at Princeton City Hall
City of Princeton - Insulation	\$ 59,450.00	Insulation and ceiling tile replacement at Princeton City Hall
City of Welch - HVAC	\$ 14,220.00	HVAC upgrade at Welch City Hall
City of Welch - Lighting	\$ 13,320.00	Lighting upgrade at Welch City Hall
McDowell County Commission	\$ 128,500.00	Lighting upgrade at the McDowell County Courthouse
Monroe Co. 911 - Lighting	\$ 2,381.39	Lighting upgrade at the Monroe County E-911 Center
Monroe Co. Courthouse - Boiler	\$ 36,500.00	HVAC replacement at the Monroe County Courthouse
Monroe Co. Courthouse - Doors	\$ 9,988.00	Door replacement at the Monroe County Courthouse
Monroe Co. Courthouse - Lighting	\$ 14,170.70	Lighting upgrade at the Monroe County Courthouse
Monroe Co. Attorney's Office - Doors	\$ 3,422.77	Door replacement at the Monroe County Prosecuting Attorney's Office
Monroe Co. Attorney's Office - HVAC	\$ 11,200.00	HVAC replacement at the Monroe County Prosecuting Attorney's Office
Monroe Co. Attorney's Office - Lighting	\$ 3,851.14	Lighting upgrade at the Monroe County Prosecuting Attorney's Office
Summers County Commission	\$ 96,800.00	Boiler replacement at the Summers County Courthouse
Town of Athens	\$ 16,500.00	Upgrade the HVAC at Athens Town Hall
Sophia Firestation - Heater	\$ 8,000.00	Replace garage heaters at the Town of Sophia Fire Station
Sophia Town Hall - HVAC	\$ 25,000.00	Replace the HVAC at Sophia Town Hall
Sophia Town Hall - Windows	\$ 2,400.00	Replace six windows at Sophia Town Hall
Union Town Hall - HVAC	\$ 23,922.00	Replace the HVAC at Union Town Hall
Union Town Hall - Lighting	\$ 14,780.01	Upgrade the lighting at Union Town Hall
Union Town Hall - Weatherization	\$ 25,218.00	Installation of insulation at Union Town Hall
Wyoming County Commission	\$ 42,600.00	Upgrade the fluorescent lighting at the Wyoming County Courthouse
Total	\$ 791,817.01	
REGION 2	AWARD AMOUNT	Project Activity/Activities
City of Milton	\$ 34,895.00	HVAC, window and door replacement at Milton City Hall
Town of Man	\$ 97,250.00	Installation of insulation, doors, windows and lighting at Man Town Hall

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.
City of Logan	\$ 38,450.00	HVAC replacement at Logan City Hall
City of Williamson	\$ 157,800.00	HVAC, lighting, window and door replacement at the City of Williamson's Emergency Services Building.
City of Kenova	\$ 122,990.00	HVAC replacement in the Kenova Municipal Building and installation of infrared heaters in the garage area
Lincoln County Commission	\$ 200,000.00	Renovate the dual-duct HVAC system in the Lincoln County Courthouse to a variable-air-volume HVAC system
Wayne County Commission	\$ 181,421.00	Replace the HVAC system in the Wayne County Courthouse
Wayne County Annex	\$ 18,500.00	Install a new HVAC system in the Wayne County Courthouse Annex
City of Milton Project 2	\$ 7,923.97	Renovate lighting and install insulation in the roof and wall areas of the Milton City Building
Town of Man Project 2	\$ 97,141.80	Install a solar photovoltaic panel system at the Man Town Hall.
City of Kenova Project 2	\$ 76,966.00	Install new windows, insulation and lighting at the Kenova Municipal Building
City of Logan Project 2	\$ 9,718.36	Install insulation in Logan City Hall
Town of Gilbert (LJHCC)	\$ 85,000.00	Upgrade the lighting at the Larry Joe Harless Community Center
Total	\$ 1,238,656.13	
<b>REGION 3</b>	<b>AWARD AMOUNT</b>	<b>Project Activity/Activities</b>
Boone County Commission	\$ 157,000.00	Upgrade the lighting and HVAC at the Boone County Courthouse
City of Chesapeake	\$ 66,524.00	Replace a door and renovate the HVAC system and lighting at the Chesapeake City Hall.
City of Hurricane	\$ 139,710.00	Install a solar photovoltaic panel system at the Hurricane Water Treatment Facility.
City of Dunbar	\$ 116,870.70	Upgrade the lighting and HVAC at the Dunbar City Hall
Town of Handley	\$ 9,135.00	Renovate the lighting at the Handley Town Hall
City of Saint Albans	\$ 100,000.00	Upgrade lighting in designated parking areas throughout the City
Clay County Commission	\$ 138,964.00	Upgrade the interior and exterior lighting and the HVAC system at the Clay County Courthouse
Town of Cedar Grove	\$ 7,270.00	Replace the HVAC system in the Cedar Grove Town Hall
Total	\$ 735,473.70	
<b>REGION 4</b>	<b>AWARD AMOUNT</b>	<b>Project Activity/Activities</b>
City of Lewisburg	\$ 36,880.00	Replacement HVAC system at the Greenbrier County Library
City of Oak Hill	\$ 86,872.00	Replacement HVAC system at the Oak Hill City Hall
City of Richwood	\$ 47,750.00	Replacement HVAC system at the Richwood City Hall
City of Ronceverte - City	\$ 7,908.00	HVAC upgrade work and new doors at Ronceverte City



Hall		Hall
City of Ronceverte - Police Department	\$ 11,399.00	Replacement HVAC system at the City of Ronceverte Police Department building
City of Ronceverte - City Hall HVAC	\$ 18,641.00	New window installation at the City of Ronceverte Police Department building.
City of Summersville - City Hall	\$ 53,989.00	Replacement HVAC system at the Summersville City Hall
City of Summersville - Youth Center - HVAC	\$ 67,750.00	Replace the HVAC system at Summersville Youth and Community Center
City of Summersville - Youth Center - Lighting	\$ 5,810.00	Replace the lighting at Summersville Youth and Community Center
Summersville - Youth Center - Doors	\$ 15,000.00	Replace windows and doors at Summersville Youth and Community Center
Fayette County Commission	\$ 105,192.00	Replacement of the boiler at the Fayette County Courthouse
Greenbrier County Commission	\$ 40,000.00	Window replacement at the Greenbrier County Courthouse and Courthouse Addition
Nicholas County Commission	\$ 121,606.00	Replacement of the HVAC chiller equipment and water heater at the Nicholas County Courthouse
Pocahontas County Commission	\$ 160,000.00	Lighting upgrade at the Pocahontas County Courthouse
Addison Center Building	\$ 10,950.00	Replacement of the HVAC system and two windows in the Town of Addison-Addison Center Building
Addison City Hall	\$ 12,794.29	Replace doors and windows in the Town of Addison Municipal Building
Addison Maintenance Building	\$ 7,800.00	Installation of doors in the Town of Addison Maintenance Building
Town of Ansted	\$ 32,000.00	Replacement of 16 windows in the Ansted Government Annex
Camden on the Gauley - HVAC	\$ 13,500.00	Replacement of HVAC at Camden on Gauley City Hall
Camden on the Gauley - Lighting	\$ 10,600.00	Upgrade of the lighting and installation of additional building insulation at Camden on Gauley City Hall
Camden on the Gauley - Windows	\$ 18,095.00	Replacement of the exterior and garage doors, windows and installation of an on-demand water heater system at Camden on Gauley City Hall
Town of Cowen	\$ 20,018.03	Replacement of the doors and windows at Cowen Town Hall
Durbin Town Hall	\$ 24,995.00	Insulation of the exterior walls and install replacement windows and doors at the Durbin Town Hall
Durbin Town Hall Addition	\$ 10,605.00	Installation of a new garage door and insulation at Durbin Town Hall
Town of Rainelle	\$ 42,198.00	Installation of insulated siding, doors and replacement windows at Rainelle City Hall
Webster County Commission	\$ 25,000.00	Installation of an HVAC unit in the Webster County Courthouse
Total	\$1,007,352.32	

REGION 5	AWARD AMOUNT	Project Activity/Activities
Calhoun County Commission	\$ 112,260.00	Replace the current air conditioning system and install remote control thermostats at the Calhoun County Courthouse
Town of Harrisville	\$ 38,500.00	Replace HVAC and lighting at the Harrisville Town Hall
Jackson County Commission	\$ 100,427.00	Replace existing chiller unit and current lighting fixtures at the Jackson County Courthouse
City of Paden City	\$ 39,785.00	Replace HVAC at the Paden City City Hall
City of Vienna - Windows	\$ 19,100.00	Replace windows at the Vienna City Hall
Paden City Health & Recreation	\$ 27,520.00	Replace the present HVAC system in the Health and Recreation Building
Pennsboro City Building	\$ 31,390.00	Replace HVAC at the Pennsboro City Building
Pleasants County Commission	\$ 56,378.00	Replacement of the HVAC system at the Pleasants County Courthouse
Roane County Commission	\$ 139,866.00	Replacement of the windows, doors and HVAC system at the Roane County Courthouse
Sistersville City Building	\$ 31,745.00	Upgrade the lighting and replace the HVAC system at the Sistersville City Building
City of Vienna	\$ 20,885.00	Replacement of the HVAC system at the Vienna City Building
Wirt County Commission	\$ 34,421.00	Replace the HVAC at the Wirt County Courthouse
Pleasants County Ballfield	\$ 84,250.00	Upgrade the lighting at the Pleasants County Park
Elizabeth	\$ 7,050.00	Replace windows and doors at the Elizabeth Town Hall
Jackson County Commission 2	\$ 8,899.65	Replace the HVAC system at the Jackson County Animal Shelter
Ritchie County Commission	\$ 27,000.00	Install insulation and upgrade the lighting at the Ritchie County Courthouse
Pleasants County Commission	\$ 8,899.64	Upgrade the interior and exterior lighting at the Pleasants County Courthouse
Roane County Commission 2	\$ 8,899.65	Upgrade lighting in a Circuit Court courtroom at the Roane County Courthouse
Wirt County Commission 2	\$ 8,899.65	Upgrade the HVAC at the WVU Extension and Wirt County EMS offices
Total	\$ 806,175.59	
REGION 6	AWARD AMOUNT	Project Activity/Activities
City of Mannington	\$ 45,500.28	Upgrade lighting, HVAC, insulation and doors at the Mannington City Hall, City Hall Annex and City Garage.
City of Salem	\$ 200,000.00	Upgrade the insulation, doors, lighting and HVAC at the Salem City Building
City of Shinnston	\$ 66,902.86	Upgrade the insulation, windows, doors and HVAC at the Shinnston Municipal Building
Preston County Commission	\$ 200,000.00	Replace the boiler in the Courthouse Annex and HVAC and domestic hot water units in the Jail Building
Town of Star City	\$ 200,000.00	Installation of insulation, new HVAC system and controls, lighting and doors at the Star City Municipal Building

Taylor County Commission	\$ 51,510.00	Upgrade the lighting and HVAC system in the Taylor County Courthouse and Annex
Town of Barrackville	\$ 31,290.00	Installation of insulation and upgrade of the HVAC and lighting at the Barrackville Municipal Building and Community Center
Town of Farmington	\$ 64,545.00	Installation of insulation and replacement of doors, HVAC and lighting at the Farmington Town Hall
Town of Lumberport	\$ 77,960.00	Installation of new windows and insulation at the Lumberport Community Center and window replacement at the Municipal Building
Total	\$ 937,708.14	
<b>REGION 7</b>	<b>AWARD AMOUNT</b>	<b>Project Activity/Activities</b>
Barbour County Commission	\$ 166,500.00	Replace the HVAC at the Barbour County Courthouse
City of Buckhannon	\$ 170,976.25	Install a ground-source heat pump and a new HVAC unit at the Buckhannon City Hall
City of Elkins	\$ 71,250.00	Replace windows at the Elkins City Hall
City of Parsons	\$ 168,169.00	Upgrade the HVAC system and lighting at the Parsons City Hall
City of Philippi	\$ 141,000.00	Upgrade the HVAC system at the Philippi City Hall
City of Thomas	\$ 28,500.00	Upgrade the HVAC at the Thomas City Hall
Lewis County Commission	\$ 30,400.00	Add insulation to the attic area of the Lewis County Courthouse.
Town of Jane Lew	\$ 23,770.50	Install HVAC and a door in the Jane Lew Town Hall
Tucker County Commission	\$ 132,525.00	Installation of a new boiler and control systems in the Tucker County Courthouse.
Total	\$ 933,090.75	
<b>REGION 8</b>	<b>AWARD AMOUNT</b>	<b>Project Activity/Activities</b>
Town of Franklin	\$ 29,500.00	Install a ground-source heat pump at the Franklin Town Office.
Hampshire County Commission	\$ 200,000.00	HVAC, windows and lighting upgrades at the Hampshire County Sheriff's Building.
Hardy County Commission	\$ 64,575.00	Lighting upgrades at the Hardy County Courthouse
City of Keyser	\$ 61,268.00	HVAC replacement at the Keyser City Hall
Mineral County Court House	\$ 70,405.00	Upgrade the HVAC, install interior storm windows and replace windows and doors in the Mineral County Courthouse
Pendleton County Court House	\$ 200,000.00	Replace the HVAC in the Pendleton County Courthouse
City of Romney	\$ 50,000.00	Install insulation and upgrade the HVAC at the Romney City Hall
Town of Wardensville	\$ 6,240.00	Replace windows at the Wardensville Town Hall
Total	\$ 681,988.00	
<b>REGION 9</b>	<b>AWARD AMOUNT</b>	<b>Project Activity/Activities</b>

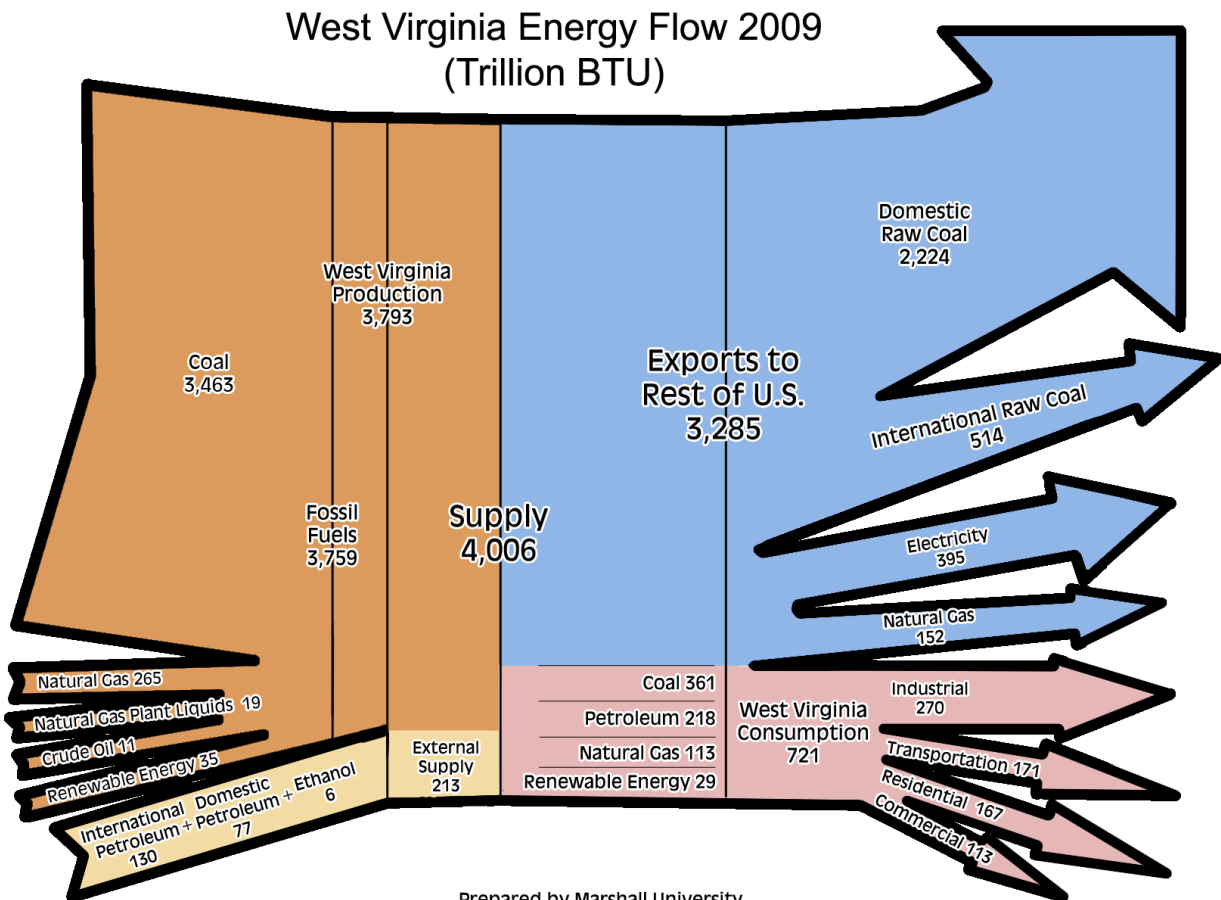
Morgan County Commission	\$ 196,660.00	Install a solar photovoltaic panel system at the Morgan County Courthouse
Town of Bath	\$ 32,450.00	Replace the HVAC and install insulation at the former Berkeley Springs B&O Railroad Passenger Station. Replace lighting, windows and HVAC at the Town of Bath Town Hall Office
Total	\$ 229,110.00	
<b>REGION 10</b>	<b>AWARD AMOUNT</b>	<b>Project Activity/Activities</b>
Village of Bethlehem	\$ 3,300.00	Lighting upgrades at park facilities
City of Cameron	\$ 73,000.00	Upgrade HVAC and air conditioning units at the Cameron City Building
City of Glen Dale	\$ 6,400.00	Install insulation in the Glen Dale City Hall
Marshall County Commission	\$ 170,000.00	Replace boilers in the Marshall County Courthouse and Courthouse Annex
City of McMechen	\$ 12,500.00	Replace the HVAC system at the McMechen City Building
City of Moundsville - Windows	\$ 21,775.00	Replace windows and doors at the Moundsville City Building
City of Moundsville - HVAC and lighting	\$ 32,510.00	Upgrade the HVAC and lighting at the Moundsville City Building
City of New Martinsville	\$ 15,150.00	Replace the HVAC at Old City Hall
Town of Pine Grove	\$ 30,000.00	Install new doors and windows at the Pine Grove Byrd Center.
Town of Triadelphia	\$ 63,080.00	Upgrade the HVAC and lighting at the Triadelphia Town Hall
Wetzel County Commission	\$ 91,200.00	Install new windows, at the Wetzel County Courthouse
Village of Clearview	\$ 6,500.00	Replace HVAC at the Clearview Community Building
Total	\$ 525,415.00	
<b>REGION 11</b>	<b>AWARD AMOUNT</b>	<b>Project Activity/Activities</b>
Village of Beech Bottom	\$ 32,162.17	Install a solar photovoltaic panel system at the Beech Bottom Municipal Building
Town of Bethany	\$ 32,162.17	Install energy efficiency measures in the new Community Center area at Bethany Town Hall
Brooke County Commission	\$ 32,162.17	Install a new HVAC system, lighting upgrades and energy controls at the Brooke County Courthouse.
City of Chester	\$ 32,162.17	Replace the HVAC at the Chester Municipal Building
City of New Cumberland	\$ 32,162.17	Upgrade lighting at the New Cumberland Municipal Building
City of Follansbee	\$ 32,162.17	Upgrade lighting at the Follansbee City Building
Hancock County Commission	\$ 32,162.17	Upgrade lighting at six Hancock County Commission facilities
City of Wellsburg	\$ 32,162.17	Install windows at the Wellsburg City Building
Village of Windsor Heights	\$ 32,162.17	Install new exterior siding and insulation at the Windsor Heights Community Center
Total	\$ 289,459.53	

- 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. First-year activities include five energy assessments and industrial grade audits for industries as well as the development of an energy management certification pilot program.

## Fossil fuels

- Since its inception, WVDOE has coordinated annual Governor's Energy Summits. The summits, sponsored by the West Virginia Governor's Office, the West Virginia Department of Commerce and the Southern States Energy Board, have gathered energy experts at Stonewall Resort in Roanoke, W.Va. In 2011, the fifth annual event, "Energy Powering Economic Development," will feature presentations including "The Importance of Domestic Energy Production to U.S. Manufacturers," "Hydraulic Fracturing: Fact or Fiction," "Investment in West Virginia's Marcellus Infrastructure," "Governor's Marcellus Task Force," TransGas Development - Update on Mingo County Coal-to-Liquids Plant, "Use of Surface Mined Property by the West Virginia National Guard," "West Virginia Environmental Perspective," "Nuclear Industry Jobs in West Virginia," "West Virginia Biomass for Plastics," "Pinnacle Wind Project," "West Virginia's Metallurgical Producers and Markets," "EPA and West Virginia Coal Permits," "Appalachian Power's Energy Efficiency Program," and "Regulatory Challenges to Electric Generation in West Virginia."
- West Virginia, with substantial quality coal reserves, abundant water, an established energy infrastructure and trained work force, is in a position to capitalize economically on advanced coal technology such as carbon capture and storage (CCS). WVDOE and the West Virginia University National Research Center for Coal and Energy (NRCCE) have concluded a multi-agency task force to address fossil energy priorities identified in the state energy plan, "West Virginia Energy Opportunities," with a focus on carbon sequestration. Current year activities included the coordination of a daylong carbon sequestration workshop provided by the U.S. Carbon Sequestration Council.
- In 2011, construction began on a \$3 billion TransGas Development Systems LLC (TGDS) coal-to-liquids plant in West Virginia. 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 2013, the plant will be built in Mingo County's new energy park near Gilbert. 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 more than 6.5 million barrels of gasoline.

- 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. CBER created energy flow charts for the state of West Virginia for the years 2005, 2006, 2007, 2008 and 2009 detailing energy production by resource, exports by resource and consumption by sector. [See chart, **West Virginia Energy flow 2009 (Trillion BTU)**] Time series data on the components of the charts are also collected and posted within CBER's website.



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 123 permits, consisting of 35 original notifications of requirement to file community impact statements (CIS). The office approved 76 new and updated CIS plans during the period. This number includes amended CIS submissions for changes made to the original. The OCCD approved 47 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.
- In 2011, eleven counties either updated their existing Land Use Master Plans (LUMP) or developed new plans with the help of the Brownfield Assistance Centers. To date, 22 counties have adopted their LUMPs; 4 LUMPs are awaiting county commission adoptions; 4 LUMPs have developed their plan but have had little county action; and the remaining county is in the development phase.
- A Memorandum of Understanding (MOU) was executed between the OCCD and the West Virginia National Guard to evaluate 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 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 to assist in the collection of data to model potential economic benefits along the proposed King Coal Highway system.

**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 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.
- 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**

- In 2010, the West Virginia Public Service Commission modified the state's net metering rules and adopted standard interconnection procedures. In May 2011, the PSC clarified the definition of "run-of-river hydropower" to match the definition in the W.Va. Alternative and Renewable Energy Portfolio Standard. Also in 2011, General Order 258.1 corrected an omission related to the Level 2 Interconnection Agreement by incorporating provisions relating to assignment, liability, indemnity, Force Majeure, consequential damages and default. These rules were effective July 18, 2011.
- As of October 2011, 40 West Virginia county school systems power their school buses with biodiesel.
- 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 the WVDOE's relationship with Marshall University's Center for Environmental, Geotechnical and Applied Sciences (CEGAS). Initiative 1 projects include:
  - 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. – soil samples collected at each of the



sites to determine baseline conditions and will be measured again next season to determine the Arundo's impact on the soil; Coal-Mac (a large surface mine complex operated by Arch Coal) in Holden, W.Va. - 9 acres plot setup and soil sampling of Arundo, soil samples of switchgrass plantings will be taken at a later date; and Argus Energy (another large surface operation with various permits in different stages) in Wyoming County, W.Va. - Five soil samples of each of the three one-acre plots were tested for soil pH, lime requirement (specific for grasses), bulk density, organic carbon, nitrogen, phosphorous, and potassium.

- Soil preparation and planting of hardwood trees to 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., to 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.
- A United Coal Company surface mine site was actively mined and reclaimed into a grass/fescue dominated ecosystem. As part of the project, the Monongalia County site will be mechanically ripped and a mixture of Appalachian hardwood species will be planted to provide a mixed hardwood forest to increase carbon sequestration potential and potential bio-energy resources. The project is scheduled to begin during planting season in spring 2012.
- Marshall University's CEGAS is developing marketing packages on surface mine land properties. Initial project activities included identification of four sites for redevelopment studies located in Boone, Kanawha, Clay and Webster counties. A draft marketing package for the Hobet surface mine complex in Boone County is nearing completion. After this package is approved, additional mine land property packages will be finalized using the same format and content layout.
- 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 that 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 then 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.

Initiative 2 includes ongoing Sonic Detection and Ranging (SODAR) wind data collection and analysis.

- The West Virginia Wind Working Group, in cooperation with WVDOE, hosted its annual symposium 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 “Pinnacle Wind Farm – Project Update,” “An Update on Wind Energy Research at Marshall University,” “The Future of Renewable Energy and Other Energy Sources,” “RePower Systems,” “Introduction of Penn Virginia Resource Partners” and “Update of SoDAR Assessment Activities on Surface-Mined Land.”
- A West Virginia Wood Working Group held a meeting to explore issues such as wood-fired power plants and wood pellet production facilities.

## Energy efficiency

- WVDOE launched E3-WV, a new technical assistance program designed to help small businesses and manufacturers improve their economic, energy and environmental performance. The program will help the state’s 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) – will work together in carrying out the project.
- 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 Goodrich Inc., Union, WV; FCX Company, Morgantown, WV; Pro Performance-Mylan Park, Morgantown, WV; HKEC Castings Company, Weston, WV; and New Vision LLC, Philippi, WV.
- The WVDOE-supported Center for Building Energy Use (CBEU) at WVU has provided energy benchmarking, audits and technical assistance in 2011 to three county school systems. These include Pendleton County Schools, Randolph County Schools and Ohio County Schools. In 2011, the Center for Building Energy Use (CBEU) program assisted Pendleton County Schools certifying one of its schools for the prestigious ENERGY STAR® Building award and is assisting Ohio County in determining whether two of its schools qualify for the award. Benchmarking activities were performed for Ohio and Randolph county schools. The CBEU has performed this service since 2007. One of its first client school systems, Wyoming County Schools, was highlighted by U.S. EPA and the National Association of State Energy Officials for its utilization of ENERGY STAR program tools to achieve a more sustainable, energy efficient environment. The CBEU also assisted the Ohio and Randolph county school systems by performing benchmarking of their facilities.
- In 2011, Appalachian Power and AEP offered 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 and inspected afterward. Once work is a 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 2011, Appalachian Power, Wheeling Power Company and AEP offered 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 and inspected afterwards. Once work is a 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 with your permission. 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.