



2007 Annual Development Plan

The West Virginia Division of Energy (WVDOE) is required by 5B-2F-2(f) of the West Virginia Code to submit an annual development plan to the Governor and the Joint Committee on Government and Finance. This submission addresses the activities of the division during the period of July 1, 2007, when the agency was established by passage of Senate Bill 177, through Nov. 30, 2007. SB 177 requires that the development plan “shall relate to the division's implementation of the energy policy and the activities of the division during the previous year.”

The WVDOE consists of two divisions: the Office of Coalfield Community Development (OCCD) and the Energy Efficiency Program (EEP). The WVDOE administers the daily operation of the West Virginia Public Energy Authority (WVPEA). The WVDOE director serves as chairman of the WVPEA.

The major achievement and activity during this period was the development of the West Virginia Energy Opportunities Document (EOD). As required by law, the WVDOE hosted three public hearings to provide for public comment and input. Public comments for each hearing were transcribed.

The activities for the last six months of 2007 are addressed by energy source resource area: fossil fuels, renewable energy and energy efficiency. This report will address each resource area and the activities of each unit of the WVDOE in supporting these objectives.

FOSSIL FUELS

- During the period the WVDOE initiated projects with West Virginia University's National Research Center for Coal and Energy (NRCCE) that will examine key barriers to fossil fuel utilization. A public hearing Oct. 25, 2007, on the Energy Opportunities Document addressed each of these projects.
 - Criteria will be developed for the evaluation of commercial-scale coal-to-liquid (CTL) or polygeneration plants. These criteria will be utilized to develop a database listing specific, suitable sites for the construction of these facilities in West Virginia.
 - Value-added carbon capture and storage (CCS) opportunities and constraints will be examined to determine sequestration opportunities in West Virginia. A focus will be on the use of CO₂ for increased oil and natural gas production.
 - Pipeline constraints on increased natural gas production will be investigated. Production trends, existing infrastructure and anticipated development will be evaluated.
 - Information on surface and groundwater resources needed for energy development and the impact of these needs will be developed.
- The Office of Coalfield Community Development activities for the period included:
 - The review of approximately 300 permits from July 1 to Nov. 8, 2007, consisting of approximately 100 original notifications of requirements to file community impact statements, requests for amendments to previously filed community impact statements and notices of compliance.
 - The approval of 200 exemptions from requirements to file community impact statements. Most of these exemptions were granted to deep, not surface, mines and permits beyond their first granted renewal.
 - Assistance to consultants' and operators' inquiries concerning impact statement requirements.

RENEWABLE ENERGY

- A public hearing on the renewable energy section of the Energy Opportunities Document was Sept. 27, 2007, in Charleston.
- The Appalachian Hardwood Center of West Virginia University produced print and electronic versions of the 2007 West Virginia Wood Byproducts directory with the support of WVDOE. The directory identifies 156 producers of wood residues (sawdust, chips, bark) available for sale.
- The Appalachian Woody Biomass to Ethanol Conference was in Shepherdstown on Sept. 5-6, 2007, sponsored by the West Virginia University Biobased Materials Center and WVDOE. Nearly 90 people participated in the two-day conference with 19 presentations taking place.
- With the input and support of WVDOE, the WVU Biobased Materials Center published a study, "Biomass Resources, Uses, and Opportunities in West Virginia."
- Marshall University's Center for Business and Economic Research (CBER) produced a report entitled "Landfill Gas Proximity Analysis: Potential Direct Users in West Virginia" for WVDOE. This analysis discusses the economic viability of utilization of landfill methane by large industrial and hospital users at 15 West Virginia open landfills.
- The Marshall University CBER completed for WVDOE a collection of data on existing dams in West Virginia and developed a database of all dams with information on current and proposed power generation.
- WVDOE co-sponsored and participated in the West Virginia Department of Agriculture and MATRIC Bioenergy Forums.
- The West Virginia Wind Working Group, in cooperation with WVDOE, hosted its annual symposium on wind energy development in West Virginia. Approximately 50 representatives of wind development companies, public utilities, local and state government participated.
- In cooperation with the West Virginia Department of Environmental Protection, WVODE identified surface mine reclamation sites with commercial wind potential.

RENEWABLE ENERGY (continued)

- A WVU Institute of Technology team has been established to evaluate the potential for concentrated solar power in West Virginia. This project will determine the potential cost and economic benefits of such an energy project.
- The WVDOE sponsored the West Virginia Friends of Biodiesel Conference. More than 70 participants attended to discuss the current and potential use of biodiesel in West Virginia transportation fleets.
- The Clean Air Forum, a newsletter produced in cooperation with the WVDEP to highlight transportation opportunities using renewable fuels, was published and 6,000 copies (electronic and physical) were distributed to government, educational and private sector organizations.

ENERGY EFFICIENCY

- A public hearing on the energy efficiency section of the Energy Opportunities document was Aug. 23, 2007, in Charleston.
- In cooperation with the West Virginia Department of Education, Building Energy Use Centers (BEUCs) were established at WVU and WVUIT to assist county school systems in reducing energy costs. Five county school systems (Greenbrier, Hardy, Wyoming, Brooke and Monongalia) are participating in the program in Fall 2007. The BEUCs will provide energy benchmarking for all schools and perform energy analyses of selected schools in each county.
- Lighting grants were initiated with the Fayette County Commission (\$13,512.50), Kanawha County Commission (\$20,000) and City of Parkersburg (\$15,253).
- The Industries of the Future-West Virginia (IOF-WV) program utilizes the WVU Industrial Assessment Program in the College of Industrial and Management Systems to provide energy assessments to West Virginia industry. Energy assessments are facility-wide studies of plant energy use and recommendations. The following assessments were performed during the period:
 - **Company:** High Performance Heat Treat
Location: Huntington, WV
Assessment date: 07/06/07
Recommended energy savings (MMBtu) natural gas/wood/oil: 1,800
Recommended energy savings (kWh) electric: 7,378
Recommended energy cost savings (\$): \$18,102
 - **Company:** Allegheny Dimension
Location: Petersburg, WV
Final report pending
 - **Company:** American Woodmark
Location: Moorefield, WV
Final report pending

ENERGY EFFICIENCY (continued)

- The Projects with Industry program uses senior level engineering students to design process improvements as requested by plant management.

The following energy projects are being performed under the Projects with Industry Program at West Virginia University:

- **Company:** Alleward Springs of USA
Location: Prichard, WV
Project activities: Nine students are involved in the following projects: design of a quench tank for torsion bars; design of an automatic tool gage for quality control; improvements in a rubber molding process; design of a deburring station; and the design of a rack system for masking and painting bars.
- **Company:** Armstrong Flooring Co.
Location: Beverly, WV
Project activities: A team of four students is working on the following projects: how to control the humidity in two buildings to prevent product losses and an automated wood stacking process to reduce labor in the plant.
- **Company:** Wheeling Corrugated Steel Co.
Location: Wellsburg, WV
Project activities: Four students are working on the design of a new boiler system for the plant.
- **Company:** Tyler County Museum
Location: Middlebourne, WV
Project activities: Three students are trying to find ways to reduce the heating bills at the museum.
- **Company:** Pratt & Whitney Corp.
Location: Bridgeport, WV
Project activities: Three students are designing a rotating table to hold 20 turbine blades for a sandblasting process in the plant. The goal of this project is to reduce time and labor in the process.

ENERGY EFFICIENCY (continued)

The following energy projects are being performed under the Projects with Industry Program at West Virginia University Institute of Technology:

- **Company:** PPG Industries
Location: Natrium WV
Project activities: A student team is working with PPG staff on energy efficiency upgrades in the distillate columns.

 - **Company:** Special Metals Company
Location: Huntington, WV
Project activities: The primary project is to develop stress corrosion cracking data. Another project addresses waste reduction in the nickel alloy production process.
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- WVDOE provided support to the Industrial Gas Utilization Center (IGUC) at WVU. The IGUC focuses on reducing industrial natural gas use and identifying coal and renewable alternatives to natural gas.
 - A U.S. Department of Energy Best Practices Workshop on Process Heating was provided by the IGUC at the Robert C. Byrd Institute in Huntington, WV. There were 20 attendees from the following companies and organizations: Steel of West Virginia, Flint Group Pigments, Portec Rail Products, WVU NRCCE, WVU Industrial Assessment Center, Blenko Art Glass Co., Appalachian Power, WV Army National Guard, Burke Parsons Bowlby, Potesta & Associates, Inc., USDA Forest Service, West Virginia Division of Energy.
 - Industry of the Future – West Virginia’s “Day at the Legislature” is Jan. 15, 2008.
 - An ENERGY STAR media campaign was initiated. The purchase and use of ENERGY STAR appliances can save a homeowner more than 30 percent on utility bills. Print and billboard media were used. The Communications Division of the W.Va. Department of Commerce designed and implemented the campaign.