

National Energy Technology Laboratory

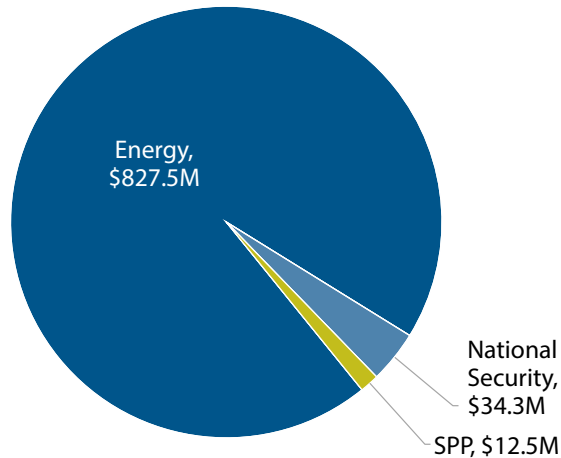
At a Glance



The National Energy Technology Laboratory's (NETL) mission focuses on the discovery, development, and deployment of technology solutions to enhance the nation's energy foundation and protect the environment for future generations. These advanced technologies enable fossil fuels to produce the clean, reliable, and affordable energy needed to support increased domestic manufacturing, improve infrastructure, enhance global competitiveness, revitalize the workforce, and free the U.S. from dependence on foreign oil. As DOE's only Government-Owned,

Government-Operated (GOGO) Laboratory, NETL possesses the competencies, capabilities, and authorities to lead critical strategic imperatives and initiatives that will advance America's energy, economic, and manufacturing priorities. Partners in NETL's research programs number in the thousands and include small and large U.S. businesses, national research organizations, colleges and universities, and other government Laboratories.

FY 2016 Funding by Source



Lab operating costs: **\$874.3M**
DOE costs: **\$861.8M**
SPP costs (non-DOE/non-DHS): **\$12.5M**
SPP as % total Lab operating costs: **4.7%**
Active Research, Development, Demonstration, and Deployment (DOE + Cost Share): **\$9B+**

Facts

Locations: Pittsburgh, Pennsylvania; Morgantown, West Virginia; Albany, Ohio; Houston, Texas; Anchorage, Alaska
Type: Single-program laboratory
Year Founded: 1910
Director: Grace M. Bochenek

Physical Assets

242 acres and **109** buildings
1,154,000+ GSF in buildings
Replacement plant value: **\$565M**
38,000+ GSF in **8** excess facilities
14,000+ GSF in leased facilities

Human Capital

1,497 full-time equivalent employees (FTEs)
56 joint faculty
62 postdoctoral researchers
16 undergraduate students
52 graduate students

Core Capabilities

- Applied Materials Science and Engineering
- Chemical Engineering
- Decision Science and Analysis
- Environmental Subsurface Science
- Systems Engineering and Integration

Mission Unique Facilities

- Simulation-Based Engineering Laboratory
- Energy Conversion Technology Center
- Advanced Alloy Development Facility
- Materials and Minerals Characterization Facility
- Geological Science and Engineering Facility
- Mobile Environmental Monitoring Laboratory
- Energy Data Exchange
- Computational Engineering Laboratory

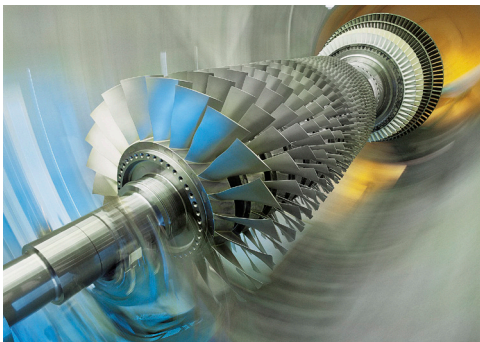


National Energy Technology Laboratory Accomplishments



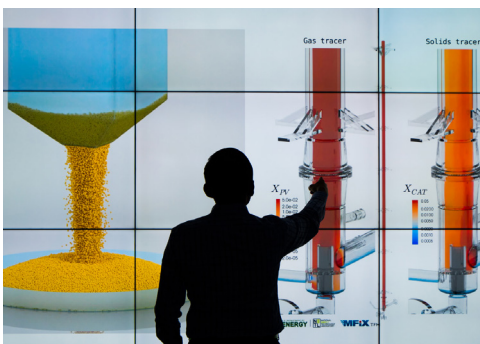
Successes

Technology Development and Deployment



Notable NETL successes over the decades include development and demonstration of technologies enabling the production of synthetic fuels from domestic fossil resources, the mitigation of trans-boundary acid rain, and steep reductions in mercury and other power plant emissions. NETL's technical expertise was leveraged to help mitigate the Deep Water Horizon Oil Spill and the Aliso Canyon Methane Leak. In addition, NETL research has stimulated the development of high-efficiency, next-generation combustion turbines; generated technology solutions for using captured carbon to increase domestic oil production through enhanced oil recovery; and created the applied technology allowing for recovery of the nation's abundant shale oils and gases.

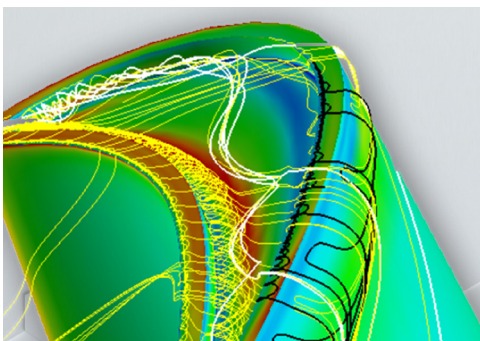
Leveraging Resources for Maximum Impact



NETL's current staff profile includes a broad spectrum of scientists; engineers; undergraduate, graduate and post-graduate interns; research support personnel; and project managers. Today, NETL's research portfolio has a total value exceeding \$9 billion, including \$5 billion in cost-sharing investment, committed by our academic and private sector collaborators. Partners in NETL's research, discovery, development, and deployment programs number in the thousands and include small and large American businesses, national research organizations, colleges and universities, and other government laboratories, including nine of NETL's sister DOE National Laboratories. NETL leverages its competencies, its unique authorities, and its partnership-convening power to accelerate transfer of affordable energy technologies to the public, delivering a continual impact on the nation's bottom line.

Technology to Market Highlight

Building a Better Turbine Blade



NETL and its collaborators developed a new gas turbine airfoil manufacturing technology that enables higher efficiency by minimizing cooling air and potentially increasing firing temperature. NETL and the University of Pittsburgh optimized turbine airfoil architectures made possible with MikroSystems Inc.'s ceramic manufacturing technology. Mikro adapted its technology for gas turbine airfoil cores and then collaborated with Siemens to cast a full row of F-class turbine blades that are currently operating in a customer's machine. Siemens then built a new facility in Charlottesville, VA, to manufacture airfoil components. The first commercial airfoils will be available in 2017.