

NETL's REGIONAL SUMMARY

OREGON

303

**JOBS
SUPPORTED**

28

**RESEARCH
ACTIVITY
PARTNERS**

\$47M

**TOTAL
ECONOMIC
IMPACT**

The Department of Energy's (DOE) National Energy Technology Laboratory (NETL) in Albany, Oregon, is paving the way for new industries and job opportunities with its groundbreaking innovations and discoveries. The NETL Albany laboratory is internationally recognized for its leadership in designing, developing, and deploying advanced materials for energy applications and extreme service environments. It houses specialized facilities for fabrication and performance testing of advanced high-temperature, corrosion-resistant structural ceramic composites as well as metal alloys. Over the past decade, the NETL Albany laboratory has expanded its geoscience and geomaterials science capabilities to better understand and characterize both engineered and natural systems related to fossil energy. Much of the work at the laboratory today also focuses on expanding its computational capabilities to help address the technical barriers to developing next-generation technologies.



U.S. DEPARTMENT OF
ENERGY



NETL delivers integrated solutions to enable the transformation to a sustainable energy future. NETL implements strategies and technologies to enable a decarbonized future and meet net-zero emission goals, including – carbon management, advanced hydrogen technologies, integrated energy systems, artificial intelligence and machine learning, and sustainable fuels and chemicals.

NETL's REGIONAL SUMMARY – OREGON

State DOE Share
\$ 23,999,865

State Performer Share
\$ 30,231,675



*"Research activity" refers to the total number of performers (prime + sub-recipients) doing work on a given project.

ECONOMY

\$47M

TOTAL ECONOMIC IMPACT
(Direct, Indirect, and Induced)

\$26M

TOTAL ON-SITE EXPENDITURES

JOBS

303

TOTAL JOBS SUPPORTED
(Direct, Indirect and Induced
FTE Equivalent Jobs)

139

ON-SITE FEDERAL
EMPLOYMENT AND SITE
SUPPORT CONTRACTOR
(FTE Equivalent Jobs)

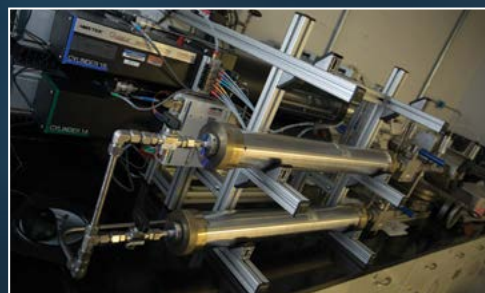
FACILITIES



Advanced Alloys Signature Center (AASC): NETL's AASC will drive the development of next-generation, high-performance materials required to generate affordable, clean electricity and support growth in emerging U.S. industries to strengthen America's position as a world leader in alloy design and production. The AASC will enhance the prototyping of diverse and specialty alloys at masses of up to 500 pounds—a scale currently absent from the domestic alloy research and development ecosystem. This facility will prototype specialty alloys to enable the production of advanced energy, defense, aerospace, national security, automotive, chemical processing, and biomedical devices and technologies.



Geoscience Analysis, Interpretation, and Assessment (GAIA): The GAIA Computational Facility provides a collaborative environment for geological and environmental scientists to conduct computer-based analytical work, offering shared resources and related-time collaboration tools, including software and video connectivity, and access to NETL's supercomputer for visualizing, interpreting, analyzing, and modeling geospatial data sets to ensure the safe and reliable use of natural resources, development of new energy resources, and responsible stewardship of the environment.



High Pressure Immersion and Reactive Transport (HiPERT) Laboratory: NETL has expanded its geoscience and geomaterials science capabilities to better understand and characterize engineered and natural systems. NETL's HiPERT laboratory is capable of performing geological studies at simulated depths of up to 10,000 feet, providing an experimental basis for modeling various subsurface phenomena and processes, such as monitoring the long-term storage stability and integrity of carbon dioxide (CO₂) under simulated conditions found in potential geologic storage sites.

CUTTING-EDGE RESEARCH



High-Performance Materials: NETL research laboratories house state-of-the-art facilities and expertise in advanced alloy technologies. To efficiently save time, money, and materials, NETL researchers leverage their expertise in computational modeling to advance the design and improve the capability to predict the performance of alloys in harsh environments. NETL researchers have led the **eXtremeMAT** project, focusing on developing next-generation technologies that predict how alloys will perform under pressure without conducting physical experiments. Research also focuses on manufacturing and assessing cost-effective materials that can withstand mechanical stress and corrosive and erosive environments for upwards of 100,000 hours of service life. Affordable, durable alloys that can withstand harsh conditions play a critical role in supporting energy sector decarbonization.



Data-Driven Tool Used for Science-Based Decision Making: NETL's **Energy Data eXchange (EDX)** is a library and data laboratory built to find, connect, curate, use, and re-use data to advance energy and environmental R&D. It houses multi-scale, multi-disciplinary R&D that blends data science, advanced computing, and science-based methods to innovate solutions for energy, environmental, and social data transformation applications. Today, the platform enables discovery and access to various energy data and information pertinent to carbon storage, hydrocarbon, energy infrastructure, and other energy systems.



Magnetohydrodynamic (MHD) Power Generation: NETL investigates the opportunities and benefits of developing MHD power generation, such as improved efficiency for fossil fuel power plants and reducing the costs of implementing carbon capture. NETL continues to advance ultra-high-temperature MHD generator technologies that incorporate new, innovative ceramics designed to operate above the boiling point of potassium metal. MHD generation operates by taking direct kinetic energy from fast-moving ionized gases and converting it into electricity without moving parts. NETL's MHD laboratory continues to break new ground by reducing time, cost, and technical risk while enabling efficient operation to drive future energy systems.

COMMUNITY INVOLVEMENT

BPA Science Bowl: Often known as the Super Bowl of science, Regional Science Bowls provide the perfect opportunity for middle and high school students interested in STEM to compete for the chance to represent their school at the National Science Bowl in Washington, D.C.

National Laboratories and Government Agencies Virtual Fair: This event facilitated connections between Oregon State University (OSU) Colleges of Science and Engineering students, OSU faculty/staff, and business/industry and government representatives for research synergy and job recruitment purposes.

NETL STEM Education and Outreach Program: NETL is committed to science, technology, engineering, and math (STEM) education and supports all levels of learning. NETL's workforce provides students with hands-on learning experiences, career path discussions, and presentations to heighten their awareness and interest in STEM.

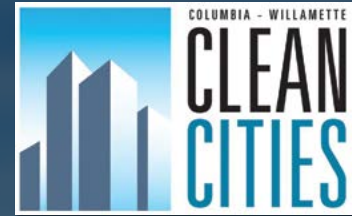


NETL researchers talking to high school students about future career paths at the 2020 Benton County High School Career Convention.

ACADEMIC AND INDUSTRY-LEADING PARTNERS ACROSS THE STATE



DAIMLER



Interagency Working Group on Coal & Power Plant Communities & Economic Revitalization: In 2021, during his first week in office, President Biden signed an Executive Order creating an Interagency Working Group (IWG) on Power Plant Communities and Economic Revitalization. NETL provides program leadership and project management to execute the mission of the IWG as it works with partner agencies, stakeholders, and community leaders.



Interagency Working Group on
Coal & Power Plant Communities
& Economic Revitalization

The IWG supports energy workers and their communities by breaking down the barriers they often face to accessing critical federal funds and related support intended to help revitalize their economies in the long term. To best support economic revitalization in America's Energy Communities immediately and over the long term, the IWG is guided by these principles to prioritize the most meaningful actions.

- Create Good-Paying Clean Energy Jobs
- Provide Federal Investments to Catalyze Economic Revitalization
- Support Energy Workers by Securing Benefits and Providing Opportunity
- Prioritize Pollution Mitigation and Remediation
- Adopt a Government-Wide Approach
- Formalize Stakeholder Engagement Efforts

REGIONAL WORKFORCE INITIATIVE (RWFI)

The mission of **NETL's Regional Workforce Initiative (RWFI)** is to create a platform for regional stakeholders to engage the laboratory and other federal agencies in collaborative workforce development efforts. These efforts complement energy and advanced manufacturing innovation and research by addressing the necessary workforce assessments and training.

- Approximately 400 institutions and organizations have connected across NETL webinars, meetings, and the monthly E-Note
- Over 1,450 registrants in the past year to RWFI webinars
- NETL partnered with the ARC to establish a job-training program that will help create a high-tech workforce with advanced welding skills (RFP totaling \$1M)
- Developed a workforce workplan based on NETL technologies that are 3-5 years from commercialization to prepare academia for the skills that will be needed to support these potential jobs

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