



U.S. DEPARTMENT of ENERGY

Hydrocarbons and
Geothermal Energy Office

OFFICE OF OIL AND GAS

The Office of Oil and Gas is located within the U.S. Department of Energy's (DOE) Hydrocarbons and Geothermal Energy Office (HGEO). The Office advances research, development, and demonstration (RD&D) to strengthen U.S. oil and natural gas production, infrastructure, and energy security.

Working with the National Energy Technology Laboratory (NETL), other DOE National Laboratories, industry, universities, and partners, the Office develops technologies across the upstream, midstream, and downstream sectors to increase resource recovery, lower costs, improve infrastructure reliability, and produce power and products from America's abundant domestic resources.

Research & Development Priorities

The Office of Oil and Gas focuses on five objectives:

- 1. Increase recovery from unconventional reservoirs** through improved subsurface characterization, field testing, enhanced recovery, and advanced production technologies.
- 2. Lower production costs through technologies** that improve operational efficiency and decision-making.
- 3. Transform produced water into an economic resource** by advancing treatment, reuse, resource recovery, and fit-for-purpose management technologies.

- 4. Improve the efficiency and reliability of midstream infrastructure** through advanced materials, sensors, monitoring, computing, and predictive analysis.
- 5. Develop advanced energy systems for low-cost, reliable power and products**, including advanced gas turbines, high-performance materials, and refining technologies.

Innovation Across the Value Chain

The **Production Division** develops technologies to advance oil and natural gas resources, emerging resources, and management of produced water.

Enhanced Oil & Gas Recovery •
Field Laboratories • Produced Water
• Offshore Spill Prevention • Methane
Hydrates • Super Intelligence (SI) &
Machine Learning • Carbon Dioxide-
Enhanced Oil Recovery

The **Transportation & Storage Division** develops technologies and best practices for an efficient, reliable, and secure natural gas supply chain.

Enhanced Resource Utilization • Resilient
Infrastructure Technologies • System-
Wide Performance Optimization

The **Power, Fuels & Chemicals Division** develops advanced energy systems that provide low-cost baseload power and valuable products from domestic resources.

Advanced Gas Turbines • Supercritical
CO₂ Power Cycles • Pressure Gain
Combustion • Advanced Energy Materials
• Advanced Refining Capabilities

From Research to Real-World Impact

HGEO emphasizes technologies that can progress from laboratory research to field validation and commercial-scale application. Current and recent efforts during the Trump Administration include:

\$36 MILLION for an enhanced oil recovery program integrating laboratory research, modeling, SI, and field pilots in North Dakota's Bakken shale.

UP TO \$150 MILLION for technologies to improve unconventional oil and gas recovery, advance hydraulic-fracture characterization, and transform produced water management.

UP TO \$66 MILLION for research, development, and deployment projects to strengthen domestic oil and natural gas production and critical energy infrastructure and convert underutilized resources into valuable products.

UP TO \$11 MILLION for university-based research and development on advancing turbine materials and efficiencies.

OIL & GAS CENTER OF EXCELLENCE at NETL's Pittsburgh campus connects industry and other stakeholders with specialized lab capabilities, facilities, and multidisciplinary technical expertise.

Work With Us

To keep up to date with the Office of Oil and Gas, visit HGEO's website and sign up for HGEO news alerts. ■



For more information, visit: energy.gov/hgeo/office-oil-and-gas

October 2026

