

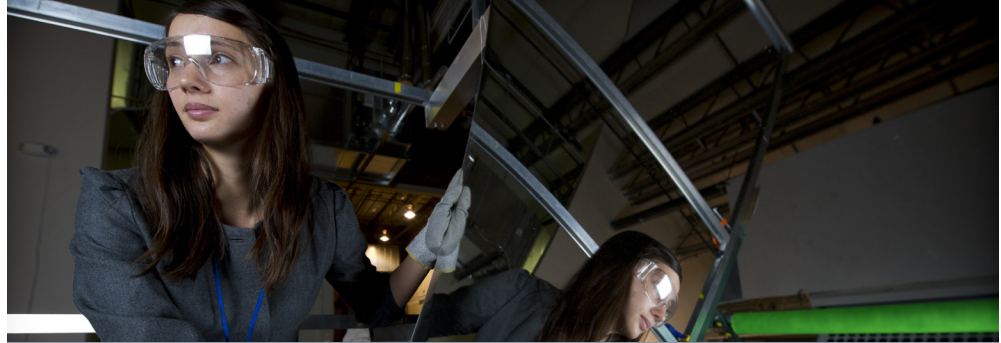
National Laboratory Impact Initiative

The U.S. Department of Energy's (DOE's) national laboratory infrastructure is a world-leading scientific enterprise. Since their founding in the mid-20th century, the U.S. national laboratories have played an integral role in DOE's mission to ensure America's security and prosperity by addressing its energy, environmental, and nuclear challenges through transformative science and technology solutions.

In an effort to better utilize national laboratory resources, DOE's Office of Energy Efficiency and Renewable Energy (EERE) launched the National Laboratory Impact (Lab Impact) Initiative in December 2013. The Initiative emphasizes the importance of commercializing lab work by bringing together leaders from government, academia, the national laboratories, and the private sector to increase understanding and communication for an effective lab-industry relationship.

Aligning with President Obama's 2011 directive to accelerate the transfer of federally funded research and innovation to the private sector, EERE's Lab Impact Initiative aims to significantly increase the impact the national labs have on the U.S. clean energy sector. The goals of the Initiative are to:

1. Increase and enhance lab-private sector relationships
2. Increase and streamline access to national lab capabilities
3. Demonstrate the value of lab-developed science and technologies.



An engineer prepares a mirror, used for parabolic troughs, for optical testing at NREL's optical laboratory. *Photo credit NREL.*

National Laboratories' Role

The United States faces an increasingly competitive landscape in which countries are competing for leadership in the transition to a global clean energy economy and investing billions of dollars to win this race. EERE works toward that goal by supporting some of America's best innovators and businesses in researching, developing, demonstrating, and deploying cutting-edge technologies to break down market barriers. The national laboratories' unique science and technology capabilities play an important role in helping to move our nation toward a more sustainable future.

The National Lab Impact Initiative is focused on developing and implementing a coordinated strategy of uniform policies and programs to enhance and accelerate the industrial impact of the U.S. national laboratory infrastructure. Both public and private stakeholders have indicated that increased collaboration among the national labs and private sector partners can significantly improve the outcomes of publicly funded research and development (R&D). Working directly with the labs can reduce risk for private-sector stakeholders, while enhancing industry outcomes and increasing

the value of federally funded R&D investments.

As a central tenet of this initiative, EERE is enabling increased interactions with the private sector by strategically managing the national labs and the clean energy R&D they conduct. EERE emphasizes public-private collaboration which leverages scientific and technical expertise to solve commercially relevant problems—creating lasting economic impacts through a more innovative and competitive clean energy sector.

Lab Policy

The Lab Impact Initiative represents EERE's contribution to a larger set of comprehensive improvements and activities currently underway at DOE and across the federal government, all aimed at elevating the operations and mission-focus of the national labs. Accelerating the transfer of federally funded research from the laboratory to the marketplace is a key element of the President's Management Agenda.¹ In July 2013, Energy Secretary Moniz established the National Laboratory Policy Council, a panel made up of senior DOE officials and lab directors, with the stated mission of redefining the labs' role in DOE's overall strategy for research and development. Finally, the DOE National

¹Kalil, T., (2014), from Lab to Market: Accelerating Research Breakthroughs and Economic Growth, Office and Science and Technology Policy, <http://www.whitehouse.gov/blog/2014/03/14/lab-market-accelerating-research-breakthroughs-and-economic-growth2>



The Combustion Research Facility is an internationally recognized center of excellence for combustion science and technology. *Photo credit Sandia Labs.*

Laboratory Operations Board is tasked with providing enterprise-wide forum to engage the Laboratories in identifying additional opportunities to improve effectiveness and efficiency.ⁱⁱ

Principles for EERE-Lab Interactions

As part of the Initiative, EERE is defining its unique, long-term relationship between EERE and the national laboratories, the operational requirements to maintain that relationship, and the interactions necessary for the labs to achieve maximum industry and market impact.

The principles articulate and establish a clear framework that lays a foundation for how EERE will engage with the national laboratories as partners in a consistent, coherent, and strategic way in order to foster greater innovation, entrepreneurship, and market impact.

Next Steps for 2015 and Beyond

In 2014, Assistant Secretary David Danielson visited six national laboratories to formally launch the Lab

Impact Initiative. Throughout his tours, he emphasized the importance of the initiative and made a commitment to allocate 1% of EERE's approximately \$800 million annual laboratory support to fund new technology transfer efforts and enhanced private-sector engagement. Additionally, EERE is developing three pilots that demonstrate DOE's intent to expand its support of tech-to-market activities among its enterprise of national laboratories. These pilots will help to:

- Encourage labs to provide technology assistance to small businesses and help them with their commercialization efforts
- Empower lab teams to identify market applications and create business models for commercializing high-impact technologies
- Enhance laboratory-industry exchanges of "embedded" researchers.

National Labs' State-of-the-Art Facilities

DOE's national labs maintain many of the world's most unique and powerful scientific instruments and facilities—offering the United States an indispensable resource in the global clean energy economy. Examples include:

- **Sandia National Laboratories' Combustion Research Facility**, a world-leading resource for advanced engine and combustion technology, has played a central role in partnering with EERE to create over \$70 billion in value for the diesel engine industry and American economy.ⁱⁱⁱ
- **Oak Ridge National Laboratory's Manufacturing Demonstration Facility (MDF)**, which is empowering the U.S. manufacturing sector to transform the next generation of scientific discovery into solutions for rebuilding and revitalizing American manufacturing. In fact, in 2014, MDF, Local Motors, and Cincinnati, Inc. led a team that created the world's first 3-D printed car.
- The **National Renewable Energy Laboratory's new Energy Systems Integration Facility (ESIF)**, which is providing U.S. utilities and industry partners with extremely valuable modeling and testing capabilities to advance grid stability, security, and enable the next generation of energy technologies. ESIF was recognized as R&D Magazine's 2014 Laboratory of the Year.

ⁱⁱMoniz, E., (2013), Letter to the House Science, Space, and Technology Committee:

<http://science.house.gov/sites/republicans.science.house.gov/files/documents/Letter%20to%20Chairman%20Lummis%20and%20RM%20Swalwell.pdf>

ⁱⁱⁱRissman, J; Kennan, H., (2013), Advanced Diesel Internal Combustion Engines,

<http://americanenergyinnovation.org/wp-content/uploads/2013/03/Case-Diesel-Engines.pdf>