

**Testimony of Deputy General Counsel Bernard McNamee
U.S. Department of Energy
Before the
U.S. Senate Committee on Energy and Natural Resources
Subcommittee on Energy**

October 3, 2017

Introduction

Chairman Gardner, Ranking Member Manchin, and Members of the Subcommittee, it is a privilege and an honor to serve at the Department of Energy, an agency tasked with, among other important responsibilities: assuring our nuclear readiness, overseeing the Nation's energy supply, carrying out the environmental clean-up from the nuclear mission, and managing the Department's 17 National Laboratories. Thank you for the opportunity to testify today on behalf of the Department of Energy (DOE) regarding legacy waste cleanup responsibilities, expanding the U.S.'s ethane storage infrastructure, commercializing DOE National Lab developed technologies, and accelerating the maturation of advanced nuclear energy.

In support of the Administration's goals of establishing energy dominance and economic competitiveness, resources within DOE's energy and science programs are focused on research and development (R&D) across a variety of technologies that support American energy independence and domestic job-growth. Through careful prioritization and ensuring funding goes to the most promising research, DOE, through its National Laboratories, will continue to support the world's best enterprise of scientists and engineers who create innovations to drive American prosperity, security and competitiveness for the next generation. I have been asked to testify on multiple bills today, which the Administration continues to review.

The Department appreciates the ongoing bipartisan efforts to address our Nation's energy challenges, and looks forward to working with the Committee on the legislation on today's agenda and any future legislation.

S. 1059, Responsible Disposal Reauthorization Act of 2017

Legacy waste cleanup is a top priority for the Department of Energy. The Grand Junction, Colorado disposal site was authorized by Congress as part of the Uranium Mill Tailings Radiation Control Act of 1978.

The disposal site is the only active site available for receiving uranium mill tailings managed by DOE's Office of Legacy Management (LM). The Department works closely with local, state,

and federal officials to ensure the protection of public health, safety, and the environment by moving contaminated materials away from public places.

The Grand Junction Disposal Site contains about 4.5 million cubic yards of low-level radioactive waste and receives approximately 2,700 cubic yards of waste per year. The disposal site has sufficient space to receive an additional estimated 235,000 cubic yards indicating the site could operate for 87 more years at current rates.

New waste materials come from numerous locations - primarily the City of Grand Junction continues to excavate waste tailings previously used in roads, sidewalks, and homes. DOE-LM operates groundwater treatment systems at several sites that will continue to generate waste eligible for disposal in the Grand Junction Disposal Site, and that valuable capacity should continue to be utilized.

The Department of Energy looks forward to continuing to work with this subcommittee on responsible disposal management of the Nation's legacy sites.

Energy Landscape

There has been an American energy renaissance in the United States over the last decade. Through the increase in production of crude oil and other liquid fuels, refined petroleum products, and production of natural gas, the United States has become an energy powerhouse. Wind and solar power generation also play an important role in our energy mix and vehicles have reached historic levels of efficiency.

The United States is, however, at an energy crossroad. Our energy landscape is dramatically changing with implications for all parts of the energy sector and our economy as a whole. These rapid and dramatic changes have created enormous opportunities. At the same time, they pose a set of challenges for energy policy makers, investors, non-governmental organizations and industry.

The changing resource mix from traditional baseload generation, recent severe weather events, and the dynamic nature of grid technologies – including changes on the demand side – are bringing grid resilience to a new, more prominent place in the discussion. Specifically, as we keep one eye on day-to-day reliability and resource adequacy, we must also begin to incorporate resilience into the discussion. Weather events such as the Polar Vortex, Superstorm Sandy, or Hurricanes Harvey, Irma, and Maria are stark reminders of the need to have a bulk power system that can withstand stresses and recover quickly.

These challenges come in many forms, and addressing them will require action by many parties, including Congress, the private sector, and public sector. The Administration looks forward to working closely with the Congress on this important topic.

S. 1337, Capitalizing on American Storage Potential Act

This new energy landscape also presents opportunities. I appreciate the chance to discuss the legislation on hydrocarbon feedstock storage infrastructure in Appalachia. The Marcellus Shale and Utica Shale sites are blessed with an abundance of hydrocarbon feedstock, such as ethane, which can be used as a building block for plastics.

The U.S. Energy Information Administration estimates that natural gas production in the region has grown from just over 2 billion cubic feet per day (Bcfd) in 2010 to 23 Bcfd mid-2017. In the same period, natural gas liquids production has grown six fold (from 106,000 barrels per day to 621,000 barrels per day). With an increase in energy production, there is often a need for workforce development in the same region. The Department of Energy's National Energy Technology Lab (NETL) is supporting workforce development to support growth of ethane production and storage in the region.

This Administration believes that the private sector has the most important role to play in the development of late stage energy projects. The Administration is committed to reasserting the proper role of what has become a sprawling Federal Government and reducing deficit spending. To that end, the Administration supports an increased reliance on the private sector to fund later-stage research and development of energy technologies, and focuses Federal resources toward early-stage research and development.

The Department looks forward to continuing our general dialogue on ethane-related issues. Recently, the Secretary of Energy had the opportunity to participate in a very productive roundtable discussion with relevant stakeholders, and the Department looks forward to engaging this subcommittee further.

S.1799, Energy Technology Maturation Act of 2017

As a science agency, the Department of Energy plays an important role in the innovation economy. DOE's 17 National Laboratories engage in research that expands the frontiers of scientific knowledge and generates new technologies that address the Nation's greatest energy challenges.

Accelerating the transition of technologies from the laboratory bench to the marketplace is an important component of increasing America's economic prosperity and energy security. This mission is the focus of the Department of Energy's Office of Technology Transitions, which oversees the technology transfer programs across the National Laboratories, including industry and other stakeholder engagement for the purpose of private sector access to lab-developed technologies and capabilities for the purpose of moving these to the marketplace.

DOE-funded energy R&D will continue to prioritize early-stage R&D where the federal role is strongest and reflect an increased reliance on the private sector to fund later-stage research, development and commercialization of energy technologies. DOE is actively working with the National Laboratories to reduce barriers to industry engagement with the laboratories to accelerate energy innovation in America. DOE has made it a priority to strengthen the engagement between National Laboratories and industry and other partners.

In response to investors and corporate partners, the DOE Office of Technology Transitions and its recently launched Energy Investor Center are streamlining industry-lab connections and access with a broad strategy of both live interaction through workshops and other events and with web-based tools to increase, improve and integrate information flow through the Lab Partnering Service.

DOE currently uses its Technology Commercialization Fund (TCF), to assist the private sector increase the commercial impact and number of National Laboratory-developed energy technologies transitioned into commercial development. Just last month the Department announced \$19.7 million in funding to help businesses move promising energy technologies from DOE's National Laboratories to the marketplace. This funding supported through the Office of Technology Transitions' TCF - which requires that government funds be matched by private sector capital - will support 54 projects across 12 National Laboratories involving more than 30 private-sector partners.

Through these efforts, DOE is fostering an environment that promotes responsible investment, increased efficiency and development of new technologies, as well as predictability and ease of access by the private sector to the National Laboratories and Facilities.

I look forward to continuing our dialogue on how to bring to market National Lab technologies.

Nuclear Energy Research

Nuclear energy is a key part of our diverse energy mix, providing essential reliability and resiliency services for our grid. Early-stage research into advanced reactors, including advanced small modular reactor technologies (SMRs), is a key part of the DOE's goal to enable the development of safe, clean and affordable nuclear power options. The Department recognizes the potential transformational value that advanced SMRs can provide to the Nation's economic, energy security and environmental outlook.

S. 1457, Advanced Nuclear Energy Technologies Act

Nuclear energy is clean, reliable, and safe, but the nuclear power industry needs to continue to innovate.

Advanced reactors, including small modular reactors, hold great promise as a clean, reliable, and secure power source for our nation. The Department recognizes that advanced reactors face challenges to ultimately achieving commercialization. Accordingly, the Department plans to partner with nuclear technology developers, including those involved with existing fleet, small modular reactor and other advanced reactor designs, in cost-shared early-stage research and development.

In addition to cost-shared early-stage research and development, as well as specific funding opportunities, the Administration supports prioritized investments in nuclear energy research infrastructure to enable private sector innovation.

Conclusion

Our Nation will achieve our economic, energy, and environmental goals by ensuring the United States continues to be a leader in energy technology, development and delivery, and by unleashing America's ingenuity to unlock our natural resources. Through research and development, collaborations at all levels of government and the private sector, the Department of Energy and our National Labs aim to support an efficient transition during our Nation's energy revolution.

The Administration looks forward to continuing to work with Congress on legislation to boost U.S. competitiveness and job creation.

Thank you again for the opportunity to be here today, and I look forward to your questions.