CRESFORUM

DOE EERE: Federal Support for Energy Efficiency and Renewable Energy

Department of Energy (DOE), Office of Energy Efficiency & Renewable Energy (EERE)

- EERE's mission is to create and sustain American leadership in the transition to a global clean energy economy. Its vision is a strong and prosperous America powered by clean, affordable, and secure energy.
- By focusing on applied research, development and demonstration, and overcoming market barriers, EERE helps bridge the gap between cutting-edge research and commercial-scale deployment of new technologies by the private sector.
- EERE is a sound investment, with a 20 percent annual return and **more than $230 billion in economic development.**

The U.S. Department of Energy's Role

The DOE's role supporting energy efficiency and renewable energy has evolved along with the technologies. Its Office of Energy Efficiency and Renewable Energy (EERE) has existed in its current form since 1993. Since its founding, DOE has played a consistent and important role promoting innovation, and as the largest funder of clean energy innovation in U.S.

RETURN ON TAXPAYER INVESTMENT

A 20 percent annual return on investment. The EERE office has **returned more than $230 billion in economic development.** As these innovative investments go to market, the private sector will benefit from the advances made by these early-stage investments.

NOTABLE PROJECTS

Roadmap to the 21st century. EERE has released reports on the future of American **solar, hydro, and offshore wind** power. Ambitious targets can be used as a benchmark for market signals.

- "The solar office has continuously worked toward its goal of enabling solar electricity costs to be competitive with conventionally generated electricity by 2020, without subsidies." – DOE Solar Energy Technology Office (SETO)

This approach is consistent with a conservative standpoint to advance early-stage technologies to a point of market competitiveness without future subsidies or tax breaks.

- "U.S. hydropower could grow from its current 101 gigawatts (GW) to nearly 150 GW of combined electricity generating and storage capacity by 2050.

While hydropower is not a new technology, EERE has supported efforts to revitalize the aging infrastructure and onboard new technologies such as pumped storage.

- "The U.S. offshore wind project development pipeline includes over 20 projects totaling 24,135 MW of potential installed capacity" – DOE EERE

Offshore wind has become a priority for renewable development and finance. Since Deepwater Wind was completed in late 2016, offshore wind is the latest example of pioneering efforts from the EERE office. The commercial Block Island Wind project is the first of its kind in U.S. waters. This initial project was **financed by French Bank Societe Generale** for $298 million. Due to this success, there is a strong case to be made for additional debt or equity financing from domestic institutions as well.

- "Applied battery research addresses the barriers facing the lithium-ion systems that are closest to meeting the technical energy and power requirements for hybrid electric vehicle (HEV) and electric vehicle (EV) applications" – DOE EERE

As electric vehicles continue to see cost reductions, much of the consumer savings has been derived from more efficient and cost-effective battery storage. The energy efficiency applications have use cases far beyond EV's, especially as a storage solution for existing wind and solar projects that currently have reliability challenges.

Why Energy Efficiency?

Energy efficiency is reducing the amount of energy needed to provide the same products and services. It is a key part of ensuring a safe, reliable, and affordable energy system. Energy efficiency as a sector is a major employer, supporting roughly **2.2 million jobs in 2016.** These jobs cut across the economy and include residential and commercial construction, engineering, as well as computer programming. As a result of widespread adoption of energy efficient technologies, the U.S. economy continues to grow **while energy consumption has remained flat.** The decoupling of economic growth and energy usage is a historically unprecedented development—until just recently, energy use was directly correlated to the productivity of the economy. U.S. businesses have established an important an American comparative advantage.

Why Renewable Energy?

Renewable energy is generated from natural processes that are continuously replenished. This includes sunlight, geothermal heat, wind, tides, water, and various forms of biomass. By definition, there are locally derived sources of energy that cannot be exhausted. As such, they play an important role in energy security. As part of an "all of the above" strategy for electricity generation, renewable energy plays an important role in diversifying America's energy portfolio. Investments in wind, solar, hydro, and battery storage will continue to enhance America's energy independence. Meanwhile, renewable energy has become a leading source for job creation as wind and solar projects have benefited from economies of scale. For example, the wind and solar sub-sectors are growing **twelve times faster** than the rest of the US economy.