

Congress of the United States
U.S. House of Representatives
Committee on Small Business
2361 Rayburn House Office Building
Washington, DC 20515-0515

MEMORANDUM

TO: Members, Rural Development, Agriculture, Trade, and Entrepreneurship
FROM: Abby Finkenauer, Chairwoman
DATE: September 10, 2019
RE: Subcommittee on Rural Development, Agriculture, Trade, and Entrepreneurship
hearing: “Growing the Clean Energy Economy”

On Tuesday September 10, 2019 at 10:00 a.m. in Room 2360 of the Rayburn House Office Building, the House Small Business Committee Subcommittee on Rural Development, Agriculture, Trade, and Entrepreneurship will hold a hearing titled, “Growing the Clean Energy Economy.” Clean energy is a driving force in the global economy. Businesses large and small are seeking to address climate change by reducing emissions, supporting renewable energy, increasing efficiencies, and reducing their overall environmental footprint.

Small businesses have a vital role in the clean energy economy. From producing biofuels to installing energy efficient equipment, manufacturing components of wind turbines, surveying land and auditing buildings, these small businesses can be found in every state and play a crucial role in supporting our economy. This hearing will discuss the importance of clean energy industries across the country, outline the challenges and opportunities for advancing energy efficiency and renewable energy, and examine what Congress can do to support small business engagement in the clean energy economy.

Witnesses include:

- Dr. Lynn Abramson, President, Clean Energy Business Network, Washington, DC
- Mr. Thomas R. Brooks, General Manager, Western Dubuque Biodiesel, Farley, IA
- Mr. Michael G. Williams, Deputy Director, BlueGreen Alliance, Washington, DC
- Mr. David J. Spigemyer, President, Marcellus Shale Coalition (MSC), Pittsburgh, PA

Background

The clean energy economy is robust and multifaceted. Overall, clean energy jobs totaled more than 3.26 million at the end of 2018.¹ Nearly every state in the U.S. has seen an increase in clean energy jobs. Clean energy jobs outnumber fossil fuels jobs nearly three to one (3.26M to 1.17M).² This growth is expected to continue, with clean energy employers anticipating a 6 percent job growth

¹ E2, *Clean Jobs America 2019* (March 19, 2019), www.e2.org/reports/clean-jobs-america-2019/.

² NAT’L ASS’N OF STATE ENERGY OFFICIALS AND ENERGY FUTURES INITIATIVE, *2019 U.S. Energy and Employment Report* (last visited Aug. 28, 2019).

for 2019. These jobs span a wide range of industries: manufacturers that build and assemble clean energy products or components; developers of clean energy projects that include architectural, engineering, and technical aspects; contractors that install, retrofit, and repair equipment and systems; and other professionals that provide essential services to the renewable energy and energy efficiency sectors.

Small businesses play an important role in the growth of the clean energy economy. Through innovation and hard work, many small firms are bringing new clean energy technologies to market, creating economic growth and supporting communities across the country. They are developing a broad range of technologies, including novel energy storage and microgrid solutions, lighter and stronger steel, more efficient fuel cells, low-impact hydropower; increased carbon sequestration, and much more. Even large-scale projects, such as wind and solar farms, create jobs and opportunities for small firms and suppliers that employ metal workers, machinists, truck drivers, and others. The renewable energy sector, especially biofuels, have outsized importance in rural communities, where more plants and their suppliers—our farms— tend to be located.

There are growing opportunities for small companies, including farmers, to respond to energy challenges through new and innovative solutions. The clean energy economy covers many industries that are dominated by small businesses – including construction, agriculture, and renewable energy sectors. This hearing will allow Members of the Committee to explore the economic opportunities for our small businesses that come through efforts to address unpredictable weather patterns, reduce our fossil fuel consumption, cut greenhouse gas emissions, and increase energy efficiency. Witnesses will share how small businesses are growing and creating good-paying jobs within clean energy sectors as well as what they need to continue to succeed.

Renewable Energy

Renewable energy is derived from resources that can be produced or replenished naturally. These resources include biomass, sunlight, water, wind, and geothermal. Currently, none of these resources alone can meet all the nation’s energy needs; however, they can reduce dependence on fossil fuels, decrease greenhouse gas emissions and pollution, and lead to overall savings, efficiency, and enhanced energy security.

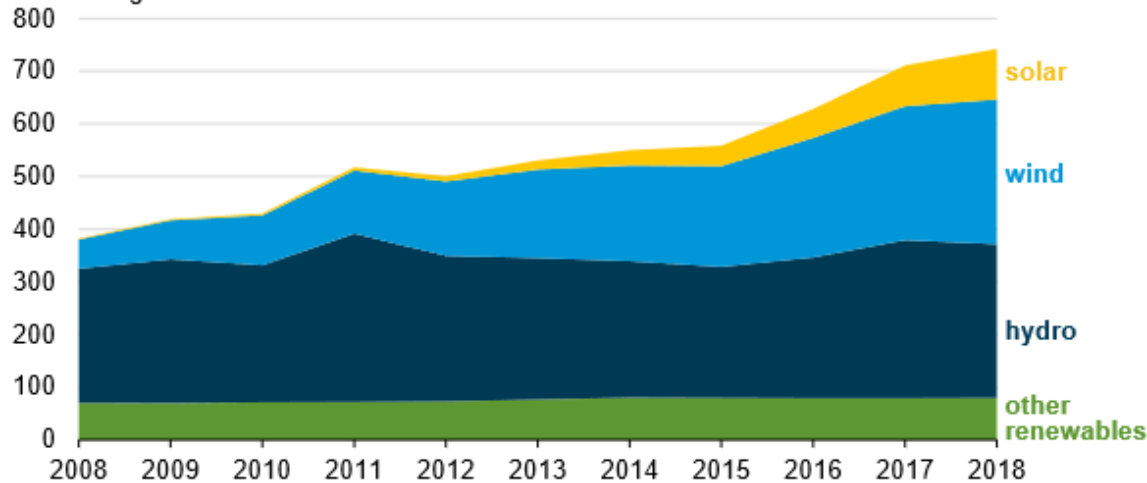
In 2018, renewables provided 17.6% of electricity generation in the United States, 742 million megawatt hours (MWh) of electricity,³ nearly double the 382 million MWh produced in 2008.⁴ Federal policies have played a large role in growing and shaping our renewable energy sectors, including but not limited to the Renewable Fuels Standard, the American Reinvestment and Recovery Act of 2009, and the Production Tax Credit and Investment Tax Credit. We have experienced growth particularly in the use of wind, solar, and biofuels. Other renewable energy sources such as some types of biomass, geothermal, and fuel-cells, provide a small portion of U.S. renewable energy generation. While these sectors can provide consistent power generation, they have the same incentives and supports as other renewable energy sectors.

³ U.S. ENERGY INFORMATION ADMINISTRATION, TODAY IN ENERGY MARCH 19, 2019. *U.S. RENEWABLE ELECTRICITY GENERATION HAS DOUBLED SINCE 2008.*

⁴ *Id.*

U.S. annual renewable generation, by fuel type

million megawatthours



Source: U.S. Energy Information Administration, *Electric Power Monthly*

Wind Energy

Wind energy, generated by wind turbines, is an inexhaustible source of domestic energy. While the intensity of wind varies by region and season, both onshore and offshore wind energy have seen increased capacity to produce energy effectively and efficiently thanks to innovation and improved technology. Electricity produced by turbines can be transported over transmission lines from the windy regions of the West and Midwest or offshore sites to populated cities with high energy demands.

The past decade has seen tremendous growth in wind energy. The U.S. is the second largest wind power market in the world, hosting 16% of the global wind fleet.⁵ Every state across the country has either a wind project or a wind-related manufacturing facility. Over 114,000 Americans have direct jobs in the wind industry, and there are over 500 wind-related manufacturing facilities in the country that support over 24,000 job making components for the wind industry.⁶

There are increasing numbers of specialist employment areas associated with the wind energy sector, which provides a range of high-skilled opportunities both for and by small businesses. Wind turbine technician is the second fastest growing job in the country, but there are also opportunities in turbine manufacturing; component subcontracting; blade manufacturing; transportation and logistics; project management; finance and legal; planning and environmental; site testing; tower building; grid connection; green electricity sales; and domestic renewable energy systems.

Solar

The sun is the world's most abundant energy source, and solar energy production has seen rapid growth in recent years. Since 2010, the number of jobs has nearly tripled to more than 242,000 Americans working in solar industry jobs across all 50 states.⁷ Solar panels are being installed on

⁵ AMERICAN WIND ENERGY ASSOCIATION, ANNUAL MARKET REPORT (2018).

⁶ *Id.*

⁷ THE SOLAR FOUND., NATIONAL SOLAR JOBS CENSUS (2018).

neighborhood rooftops, retail stores, and community solar project by those looking to reduce their energy costs. Solar can supply electricity for a single home or business, or form large arrays that supply electricity to thousands of electricity consumers. There are approximately 2 million solar installations across America, double the number from only three years ago and this is only projected to increase.⁸ Not only are businesses installing solar as a way to reduce energy costs in the long-term, but there are a number of small businesses that manufacture, design, install, distribute, and service residential and commercial solar systems. According to the Bureau of Labor Statistics, solar photovoltaic installers will be one of the fastest growing occupations between 2016 and 2026.⁹

In addition to solar energy systems, solar-compatible technologies like battery storage are also important to the clean energy economy. Across the country hundreds of companies and thousands of American workers manufacture, distribute and install residential, commercial and utility-scale energy storage systems. As more solar projects come online, energy storage can help ensure a steady and viable supply during energy ramp ups or draw downs.

Bioenergy and Biofuels

Bioenergy is a broad term for forms of renewable energy derived from biomass—including crops, plant residue, and lumber and livestock waste—and its uses include fuel, heat, and electricity. Every region has locally produced biomass feedstock, which includes but is not limited to corn, soybeans, switchgrass, recycled restaurant grease, and lumber and livestock waste. Biofuels most commonly refers to ethanol and biodiesel; however, other products fall under this definition as well. Ethanol comes from corn and biodiesel is most commonly produced using vegetable oils—primarily soybeans—along with animal fats and recycled grease. Biofuels have become an especially important market for our farmers and are among the solutions to decrease our dependence on foreign oil and decrease emissions.

Since the late 1970s, the government has played a role in encouraging their development, production, and use. Today, federal policies like the Renewable Fuel Standard and energy tax incentives have a large effect on this sector and secured its role in helping to phase out the use of fossil fuels, particularly in transportation fuel. While numbers vary, in 2018 the ethanol industry directly employed 71,367 American workers.¹⁰ The National Biodiesel Board estimates the sector employs nearly 60,000 workers.¹¹ As farmers and the agricultural sector continue to struggle with the effects of retaliatory tariffs and low commodity prices, the renewable fuels industry can provide critically important opportunities for farmers and rural communities.

Other Renewable Energy Systems

While strong winds, sunny skies, and abundant plant matter are key components of the renewable energy sector that have seen significant growth in the past decade, there are several other sources that are crucial contributors to the clean energy economy and America's energy independence. For

⁸ SOLAR ENERGY INDUS. ASS'N., U.S. SOLAR MARKET INSIGHT REPORT 2019 Q2, (2019).

⁹ U.S. BUREAU OF LABOR STATISTICS, EMPLOYMENT PROJECTIONS: FASTEST GROWING OCCUPATIONS (2016).

¹⁰ JOHN M. URBANCHUCK, CONTRIBUTION OF THE ETHANOL INDUSTRY TO THE ECONOMY OF THE UNITED STATES IN 2018 (Agriculture and BioFuels Consulting, LLP) (2019).

¹¹ NAT'L BIODIESEL BOARD, BIODIESEL COMPANIES HIGHLIGHT JOBS THAT DEPEND ON THE BIODIESEL TAX INCENTIVE (2019).

instance, hydropower, which uses water to generate energy, has been used for clean, affordable electricity for more than 100 years and geothermal energy from the earth is a clean and abundant resource, but requires further research and technological development to make it a more affordable for everyday consumers. Other energy systems include biogas from the decomposition of organic wastes, fuel cells that generate electricity through electrochemical reactions rather than combustion or marine energy, which involves utilizing waves and tides for electricity. Small businesses play an important role in the research, development, production, and deployment of these renewable technologies. Through federal programs like the Small Business Innovation Research Grant, small businesses have been engaged in research for a wide variety of renewable energy applications.

Energy Efficiency

Energy efficiency is also a key part of the clean energy economy. Energy efficiency includes both the production and installation of energy-saving products, as well as services that reduce energy consumption. This can include manufacturing or installation of energy-efficient equipment and appliances, electric or hybrid vehicles, products and services that improve the energy efficiency of buildings and homes, and the efficiency of energy storage and distribution, such as Smart Grid technologies.¹²

The 2019 U.S. Energy and Employment Report states that 2,324,866 people work in the United State energy efficiency sector, many of them as part of small businesses.¹³ This sector has experienced rapid growth. In 2018, the energy efficiency sector had the highest growth rate of any energy sector in the country at 5.37%.¹⁴ These jobs are spread across a variety of industries including construction, manufacturing, sales and distribution, and professional services. Demand for efficient technologies and buildings has driven expansion across many industries, including construction, manufacturing, building materials, lighting, and other energy-saving goods and services.

Energy efficient products and technologies provide opportunities for small businesses, including manufacturers, local contractors who build or upgrade homes and commercial buildings, and tech startups that analyze energy use information. Small firms are engaged in nearly every aspect of this sector, from innovation to production to construction and installation. Of the 7.29 million total jobs in construction in the United States, about 18 percent involve work in support of the energy efficiency sector.¹⁵ Another critical industry is the manufacturing sector and the assembly of energy efficiency appliances, including ENERGY STAR appliances and equipment. Manufacturing of energy efficiency appliances, building materials, lighting, heating and cooling equipment, and other equipment accounts for 321,581 jobs.¹⁶

¹² NATIONAL ASSOCIATION OF STATE ENERGY OFFICIALS AND ENERGY FUTURES INITIATIVE, 2019 U.S. ENERGY AND EMPLOYMENT REPORT (2019).

¹³ *Id.*

¹⁴ *Id.*

¹⁵ *Id.*

¹⁶ *Id.*

Federal Policy and Programs

There are several federal government standards, tax credits, grants, and loan programs for qualifying renewable energy and energy efficiency technologies and projects. There are also several grant and loan programs available from government agencies, including the U.S. Department of Agriculture (USDA), the U.S. Department of Energy (DOE), the U.S. Small Business Administration (SBA), U.S. Environmental Protection Agency (EPA), and the U.S. Department of the Interior.

The Renewable Fuel Standard (RFS)

The RFS is a standard intended to expand the nation's renewable fuels sector while decreasing dependence on fossil fuels and supporting our rural communities. The program requires that our transportation fuel contains a minimum volume of renewable fuels. Eligible biofuels for the RFS must meet greenhouse gas emission reduction thresholds, be derived from renewable biomass, and may only be used for transportation fuel or home heating oil.¹⁷ The RFS was authorized under the Energy Policy Act of 2005 and expanded under the Energy Independence and Security Act of 2007.

One issue that is timely and pertinent to the future of the RFS is the current Administration's use of small refinery exemption waivers. Under the RFS, the EPA may provide these waivers in certain cases to small refineries. Between 2013 and 2015, the EPA granted no more than 8 waivers for any given year. The current Administration retroactively approved 19 waivers for 2016, then proceeded to grant 35 waivers in 2017, and now 31 waivers for 2018¹⁸—exempting a total of nearly 4 billion gallons of fuel from the RFS since 2016.¹⁹ There are real economic concerns about the impact of this policy on the biofuels industry and agriculture, given the reduction in demand for biofuels resulting from this uptick in waivers granted.

Investment Tax Credit (ITC) and Renewable Electricity Production Tax Credit (PTC)

Tax credits for solar, wind and other clean energy technologies have helped maximize greenhouse gas emissions reductions and provide support for clean energy technology parity. These tax credits have helped create hundreds of thousands of jobs and spurred billions of dollars in economic growth across the clean energy economy. Tax incentives have been a powerful policy tools for driving down emissions and increasing our nation's use of clean electricity over the last decade. But the phase-out or absence of tax credit support without replacement by other federal market signals can impact these growing sectors. Tax credits for clean energy technologies can help ensure American leadership in clean energy economy and drive domestic manufacturing and the creation and maintenance of good American jobs in the next generation. Congress has been discussing energy storage, transportation, renewable energy and energy efficiency as part of larger pending legislation that modifies the existing tax code.

¹⁷ KELSIE BRACMORT, CONG. RESEARCH SERV., IF10842, THE RENEWABLE FUEL STANDARD: IS LEGISLATIVE REFORM NEEDED? (2018).

¹⁸ U.S. EPA, PUBLIC DATA FOR THE RENEWABLE FUEL STANDARD - SMALL REFINERY EXEMPTIONS (2019).

¹⁹ Todd Neeley, *Ethanol Blog: Ethanol Plant Employees Ask Trump to Order EPA to Stop Waivers*, PROGRESSIVE FARMER, Aug. 26, 2019.

Incentives for Biodiesel and Renewable Diesel

Tax incentives for biodiesel also play an important role in the clean energy economy and have an outsized importance for the biodiesel producers, blenders, and fuel retailers. The biodiesel tax incentives were introduced under the American Jobs Creation Act of 2004 and modified and extended by the Energy Policy Act of 2005. The incentives expired at the end of 2017. Before then, the law provided a per-gallon tax credit for biodiesel fuels and was the aggregation of three credits: (1) a blender credit; (2) a producer credit; and (3) a small producer credit. The biodiesel blender credit was \$1.00 per gallon for biodiesel mixed with petroleum diesel fuel and the producer credit was \$1.00 for each gallon of pure biodiesel. The small producer credit allowed for an additional 10 cents per gallon for qualifying producers.

While the RFS requires certain amounts of biofuels be used in transportation fuels, these tax incentives have been used by qualifying industries to build capacity, reduce dependence on foreign oil, and lower gas prices for consumers. The biodiesel tax credits have been included in the larger tax extenders package, which was marked-up and reported out of the House Ways and Means Committee on June 20, 2019.

Other Federal Programs that Support Small Businesses in the Clean Energy Economy

The SBA has several programs that can be used to support small businesses in the clean energy economy. The Small Business Innovation Research (SBIR) program is a highly competitive program that encourages domestic small businesses to engage in Federal Research/Research and Development (R/R&D) that has the potential for commercialization. Many SBIR grants from Department of Energy, USDA, Environmental Protection Agency, Department of Commerce, National Science Foundation, and Department of Defense have had a renewable energy or energy efficiency component.

The CDC/504 Loan Program provides financing for major fixed assets, such as equipment or real estate. It can be used to finance construction of new facilities or to modernize, renovate, or retrofit existing facilities. Energy efficiency upgrades are eligible projects. Specific projects that reduce a business's energy consumption by 10%; increase the use of sustainable designs, reduce greenhouse gas emissions, or increase the use of renewable energy sources qualify for a maximum loan guarantee of \$5.5 million.

The USDA also facilitates several programs that support the clean energy economy in rural America. The Rural Energy for America Program (REAP) facilitates renewable energy systems and energy efficiency improvement projects through guaranteed loans & grants. These programs provide guaranteed loan financing and grant funding to agricultural producers and rural small businesses for renewable energy systems or to make energy efficiency improvements. USDA also provides grants for rural businesses to conduct energy audits and assist in the development of renewable energy projects. The Rural Energy Savings Program (RESP) helps rural families and small businesses achieve cost savings by providing loans to qualified consumers to implement durable cost-effective energy efficiency measures. Funds may be used for the purpose of implementing energy efficiency measures.

Conclusion

Small businesses are at the forefront of the clean energy economy, promoting new technologies in renewable energy and energy efficiency. Whether it be in the production of renewable energy and energy efficient production or the growth and adoption of these systems, robust federal support is critical for the clean energy economy. For example, over the past decade, support for wind and solar energy development has helped decrease costs and increase adoption of these technologies, which supports numerous small business in these sectors. Developing and sustaining energy independence requires investment in new technologies, which are critical for new small business possibilities. This hearing will provide an opportunity for the Committee to hear about the small businesses around the country engaged in the clean energy economy, and to review the policies that impact them.