HEARTLAND

2020

The future of clean energy lies in rural America
A Sustainable Grid

It's become increasingly clear over the last decade that the United States is at a crossroads when it comes to the choice we make in how to power our future. Uneconomic coal plants are closing faster than at any other point in our nation's history, and renewable energy generation proving to be the most cost effective source of power. It’s time to invest in these proven technologies that will slash power emissions and cut costs to customers while protecting the health and welfare of generations to come.

On The World Stage

The U.S. wind industry added over 7,000 megawatts (MW) of new wind capacity last year alone. To date, there are 54,000 wind turbines generating a total of over 90,000 MW throughout the United States. In 2019, wind power will become the largest source of renewable energy capacity in the country. Through technological advances and smart policy, wind power can lead across the country, not only as a clean and cheap energy source but a prime driver of job growth. Recent reports from the Bureau of Labor Statistics projected that wind turbine technicians will be one of the fastest growing jobs in America by 2026. With programs and certifications for this skillset becoming wildly popular, it’s vital that the government help the industry meet demand so they can scale effectively and continue to build on a movement that will allow the United States to remain a leader in clean energy technologies.

Iowa: A National Leader

The Heartland, called such for various reasons, really is the heart of the U.S. wind industry. Iowa ranks first in the nation in wind energy, producing the highest percentage of electricity by wind of any state. Ranking second in wind capacity, last year Iowa produced 37% of its electricity generation from wind. The average annual salary of the state's 9,000 wind energy employees is $54,000, well above the national average. Job roles vary from manufacturing, operations and maintenance, design and engineering professionals. With 4,145 operating wind turbines, and 7,312MW of installed capacity, Iowa is a national leader, and has seen real economic opportunity and impact as a result. A recent IWEA study showed that 92% of Americans living within five miles of a turbine felt positively about the projects, seeming to understand the needed innovation and protection of our planet.

CLIMATE CHANGE WON'T WAIT

Continued growth of the American economy with a thriving workforce is made possible by rapid decarbonization of the electricity sector and efficiently using that power. According to Energy Futures Initiative’s 2018 report, energy efficiency jobs employed 2.25 million Americans last year - with growth of 67,000 net jobs in 2017 alone. Utilizing wind energy technologies to power businesses, homes, and commercial buildings while integrating energy efficiency will allow the United States to effectively implement an emissions-free power grid within the time constraints that the IPCC Report lays out while providing good jobs.
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The U.S. Solar Market

The U.S. solar photovoltaic market began to recover from the uncertainty surrounding threatened solar tariffs to reach over 58,000 megawatts of total installed capacity this year - enough to power 12.3 million American homes. The International Renewable Energy Agency forecasts solar will outcompete fossil fuels on a strict cost basis in most parts of the world within the next 2 years. Stable policy from 2009 to 2016 allowed most states to see significant increases in deployment, leading to lower costs to power customers homes and businesses. Additionally, the average cost declines in solar installations fell 80% compared to the previous decade.

Untapped Potential

Solar energy has real potential in the Heartland. With plunging prices and favorable incentives in place, the demand for this form of renewable energy -- even in a "not-so-sunny" state -- has skyrocketed. But because wind power took off so rapidly in Iowa and provides a significant portion of the state's electricity, it is widely thought that solar has been overlooked. Iowa ranks 29th in the country for installed solar capacity, but has arguably the strongest net-metering policies of all 50 states -- allowing consumers generating up to 500 kW to be compensated for their contributions to the grid. Leveraging this policy and providing support for farmers to add solar could mean significantly more revenues and jobs for rural Iowa.

EMBRACING THE FUTURE OF COMMUNITY SOLAR

Community solar has increasingly become a large piece of the puzzle in the efforts to rapidly cut emissions in the power sector. Sometimes referred to as a solar garden or shared renewable energy plant, these projects are solar power plants whose electricity is shared by more than one household. ‘Community solar’ can refer to both ‘community-owned’ projects as well as third party-owned plants whose electricity is shared by a community. This allows the community to avoid individual home installations where the roof is less suitable or unavailable. With pilot programs in Massachusetts, Illinois, New Jersey, and New York, the market is growing fast, with some states likely needing to quickly expand their programs in order to meet demand. Recent research has revealed that there’s a real opportunity in agricultural-compatible solar, that could be the key to unlocking value in farm country. Where panels are elevated and spaced appropriately, they can help retain moisture in the soil and reduce the need for irrigation and pesticide use, as well as better forage for livestock. This can not only be a win for the global environment but for local farm economics.
Imagine a world where we’ve replaced the entire barrel of oil - and fossil fuels are obsolete. In 2007, the Renewable Fuel Standard (RFS) was revised to go beyond merely displacing gasoline to include building a truly sustainable biofuels industry by incorporating the first and only greenhouse gas emissions (GHG) standard in U.S. history. Renewable fuels technology is the only pathway that exists for displacing fossil fuels used in 98% of all vehicles on the road today. The RFS has laid the groundwork for the next generation of advanced biofuels, which are already being utilized today, contributing even further to U.S. emissions reduction.

Decarbonizing Transportation

Renewable fuels and electric vehicles are working together to offset oil consumption and reduce carbon emissions in passenger vehicles. Even if the whole sector becomes fully electrified, we will still need to replace conventional oil used in aviation, long-haul trucking, and overseas shipping. Biofuels provide the solution necessary for each of these essential forms of transport. They are the only alternative to oil that exists today and is likely to be viable for some time.

Integrating Bio-products

Each year, Americans consume 100 billion plastic bags. Every day, we throw away 60 million plastic water bottles. It takes millions of barrels of oil to produce the goods we utilize in everyday life. This needs to change. Bio-products are a viable, safe, and environmentally friendly replacement that will provide a smooth transition away from fossil fuel consumption and further offset carbon emissions.

Creating Green Jobs

The renewable energy sector employs hundreds of thousands of Americans across the nation. The biofuels sector alone supports 360,000 good-paying, clean jobs, and the numbers continue to increase annually. Manufacturing, engineering, farming, and research are all key areas that play a major role in the biofuels supply chain. Millions of Americans can join the clean energy sector in rural America and farm country.

BIOFUELS: REDUCING EMISSIONS TO MEET CLIMATE GOALS

Like all renewable energy technologies, renewable fuels have improved over time. Biofuels have significantly reduced transportation emissions in the United States, and their contribution has grown over time as efficiency has increased, even when land use changes are included in the calculation. Argonne National Laboratory found that corn ethanol delivers a 34 percent reduction in greenhouse gas emissions, and the growing cellulosic ethanol industry can deliver reductions ranging from 80 percent or more over gasoline. USDA similarly reported “new data and found that corn ethanol’s current GHG profile is 39-43 percent lower than gasoline.” According to full lifecycle emissions analysis, several cellulosic ethanol production facilities are achieving more than 100 percent reductions in carbon emissions compared to gasoline, meaning some advanced biofuels are a carbon sink. So, every gallon of biofuel we use today displaces fossil fuels and charts a course toward a cleaner tomorrow. Technology already exists that converts ethanol into bio-based jet fuel, and a thriving biofuels sector can develop even more low carbon solutions to our transportation challenges. The decisions we make today on climate policy will impact our planet for generations to come. With trillions of dollars in natural disaster damages at stake, the United States must act today to defend ourselves against the devastation of climate change.