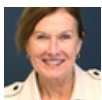


Clean Energy Jobs Had Momentum in 2020. Let's Keep It Going.



Ellen Hughes-Cromwick

Senior Resident Fellow for Climate and Energy Program

[@EllenHughesCrom](https://twitter.com/EllenHughesCrom)



Andres Prieto

Climate and Energy Fellow

[@ThirdWayEnergy](https://twitter.com/ThirdWayEnergy)

Even though a political debate lingers over whether clean or fossil energy jobs are the future, the transition to clean energy and the growth of this workforce are here to stay. But much like other businesses, clean energy companies are struggling, shedding jobs in the face of the economic crisis. The US government and the Federal Reserve are laser-focused on combatting the disastrous surge in unemployment and shuttered economic activity. As part of that effort, policymakers should take several actions to maintain the trend toward clean energy, both to address immediate challenges and accelerate our recovery once it begins.

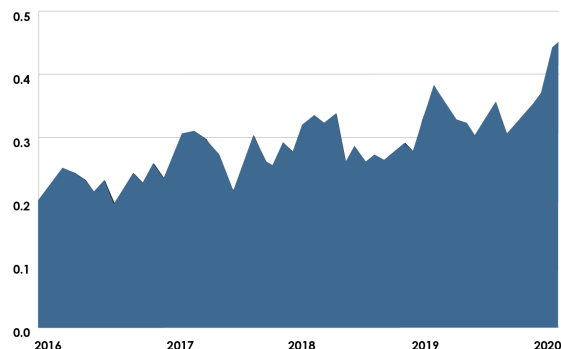
If you need any reminder of the inexorable clean energy trends, you need look no further than the significant growth in renewables or the fantastic cost declines in batteries for electric vehicles. Wind and solar consumption in the US have grown at an annual rate of 21% since

January 2016, while energy consumption, excluding renewables, has been stagnant but

dropping off since February 2020.

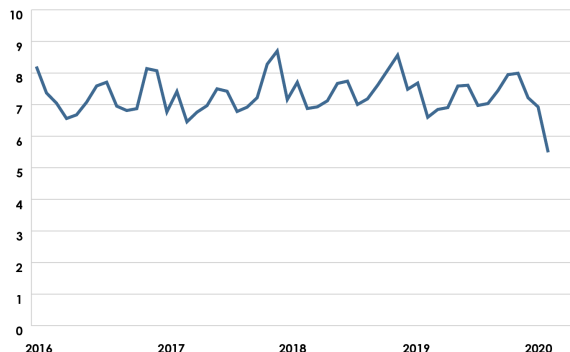
THIRD WAY

Wind and Solar Consumption
Quadrillion BTUs



Source: Source: Energy Information Administration, "Short-term Energy Outlook," May 2020, Table 8. <https://www.eia.gov/outlooks/steof/>, Accessed 19 May 2020. Co-Authors' calculations.

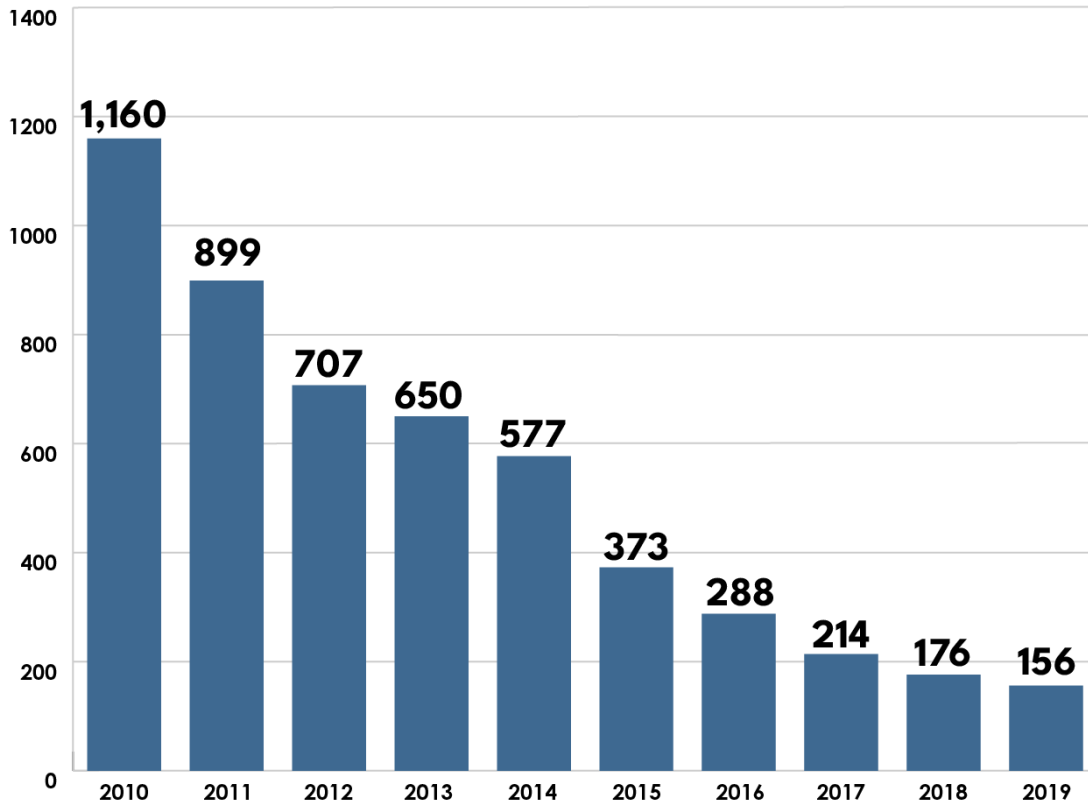
Energy Consumption Excluding Renewables
Quadrillion BTUs



Source: Source: Energy Information Administration, "Short-term Energy Outlook," May 2020, Table 1. <https://www.eia.gov/outlooks/steof/>, Accessed 19 May 2020.

Battery pack costs have fallen significantly since 2010, with Tesla now saying that their innovations are generating pack costs below \$80 per kWh. Along with many other innovations that will capture, absorb, and store greenhouse gas emissions, we will continue the long-term trend of decarbonization.

Battery Pack Costs (Inflation Adjusted) \$/kWh



Source: Bloomberg New Energy Finance, December 2019; volume weighted average

In the meantime, we are likely to observe a setback in clean energy jobs due to the massive disruptions from the COVID-19 shutdown and ensuing economic recession. But it is difficult to gauge the extent of it. Measures of weekly or monthly clean energy employment do not exist. For many of the traditional sectors of the economy, our nation’s statistical agencies have longstanding, high frequency measures of activity and employment. For example, every first Friday of the month, the employment report published by the US Bureau of Labor Statistics provides detailed employment estimates of oil and gas extraction, coal mining, metal ore mining, logging, and various other jobs in great detail. However, there is no monthly estimate for electric vehicles, battery storage, nuclear, windmill technicians, windmill manufacturing jobs, solar construction jobs, or windmill data scientists.

Fortunately, trade associations and energy analysts are starting to provide some clues on how COVID-19 is impacting clean energy jobs. This blog will summarize what the data reveals and highlight some key solutions to this emerging challenge to get back on track as the economy recovers from this glaring and punishing health and economic crisis.

The Gold Standard of Clean Energy Employment

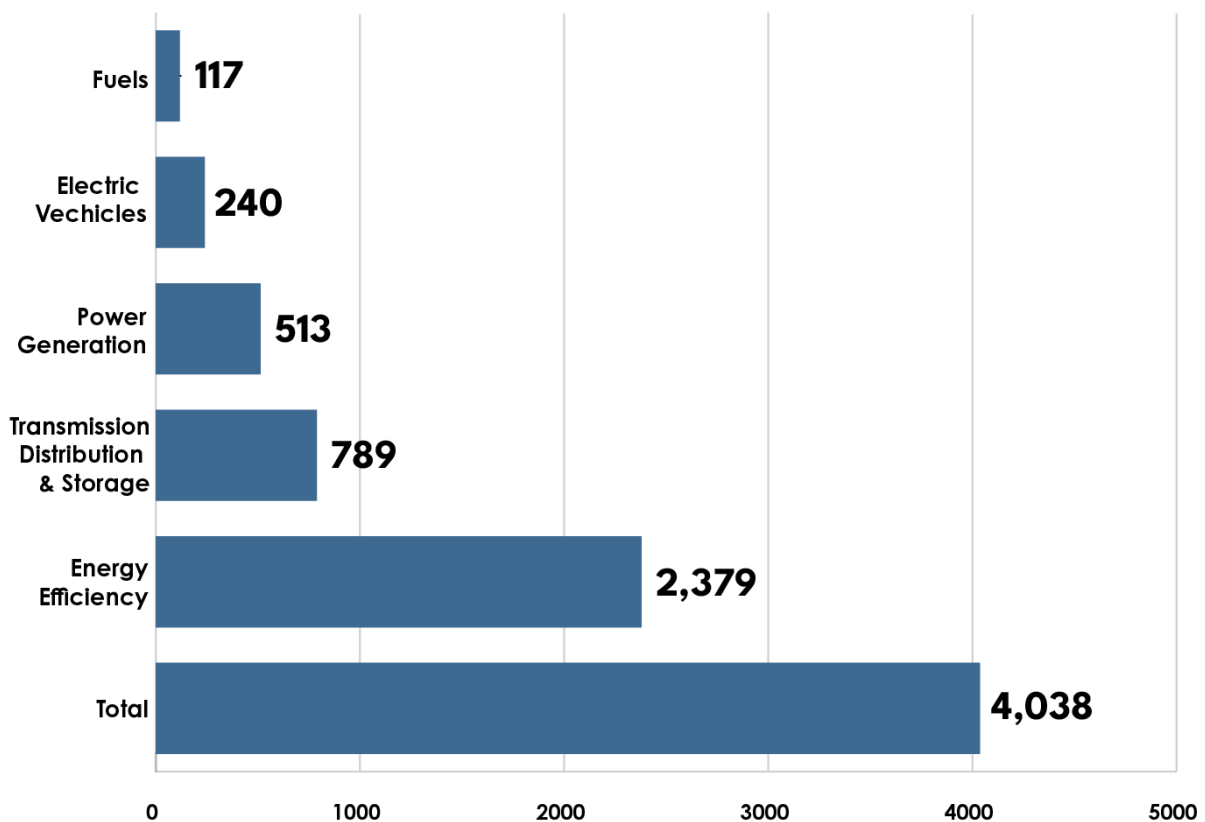
Data Confirms the Rapid Rise of Clean Energy

To start, let's first take a look at the best available annual measures.

These measures are developed by the Energy Futures Initiative (EFI) and the National Association of State Energy Officials (NASEO). Together they publish an annual "[U.S. Energy and Employment Report](#) (USEER)."



2019 Clean Energy Employment In Thousands



Source: National Association of State Energy Officials and Energy Futures Initiative. "2020 U.S. Energy & Employment Report." April 2020. <https://www.usenergyjobs.org/>. Accessed 18 May 2020.

The report underscores that clean energy is becoming an increasingly important portion of the overall energy industry. This 2020 report finds that in 2019, prior to the health crisis, clean energy jobs totaled over 4 million¹ (nearly half of all energy jobs), with over one-half of these jobs dedicated to energy efficiency activities. The overall size of the clean energy employment base is now on a par with auto-related employment, also at 4 million.

This report also indicates that clean energy jobs prior to the health crisis were growing at a

fast clip. For example, topline clean energy job growth of over 3% was more than double the pace of overall payroll job gains at 1.4% last year.

Much of the growth was in key sectors like work on transmission, distribution and storage—particularly battery storage for renewables on the grid. Job growth at battery electric vehicle businesses saw gains of over 14% last year.

 **THIRD WAY**

| Top Five Fastest Growing Clean Energy Employment Sectors With Over 50,000 Jobs | 2018 | 2019 | % Change |
|---|-------------|-------------|-----------------|
| Grid Modernization | 37,631 | 66,837 | 77.6 |
| Battery Electric Vehicles | 67,938 | 77,667 | 14.3 |
| Battery Storage | 62,910 | 65,904 | 4.8 |
| Wind | 111,116 | 114,774 | 3.3 |
| Solar | 242,343 | 248,034 | 2.3 |
| Memo: Total Clean Energy | 3,931,117 | 4,051,777 | 3.1 |

Source: National Association of State Energy Officials and Energy Futures Initiative. “2020 U.S. Energy & Employment Report.” April 2020. <https://www.usenergy.org/>. Accessed 18 May 2020. Includes co-authors’ calculations.

More Recent Estimates Show How COVID Crisis Hits Clean Energy Jobs

The Solar Energy Industry Association has estimated that 65,000 solar related jobs have been lost compared to nearly 250,000 solar jobs last year. Compared to SEIA job projections for June 2020 at 302,000, they indicate the solar job losses will exceed 100,000 at mid-year.

**n energy job growth of over 3% was more than
ll payroll job gains at 1.4% last year.**

Wind-related employment is not likely to have suffered the same magnitude of losses given that these projects tend to be long-term investments with many projects funded prior to the onset of COVID-19. The American Wind Energy Association (AWEA) estimates that there are

35,000 wind jobs at risk, or 30% of the USEER Report of 115,000 wind jobs. That sounds drastic, but bear in mind that overall employment has fallen by 21.4 million in the February – April time period.

Finally, BW Research Partnership is using a methodology which attempts to calculate broader clean energy losses from the US monthly employment report from the Bureau of Labor Statistics, as well as the unemployment insurance filings at each of the 50 states' agencies. According to this research, they estimate that 600,000 clean energy jobs have been lost since February. This would represent nearly 15% of total clean energy jobs last year lost in just two months.

What to Do to Keep Up the Momentum

Clean energy workers and businesses need support and relief just like any other business lining up for Paycheck Protection Program loans. There is no reason why these businesses should be disadvantaged in any way. Here are four actions which could be taken immediately:

1. Congress must expand assistance for small businesses. Initial federal action to establish the Paycheck Protection Program was an important effort, but there have been too many gaps in the program, from inadequate funding to poor administration. Congress must expand and revise the PPP to dedicate more money to affected businesses, expand eligibility so all companies can participate, and give more flexibility on how funds are used. We need to ensure government programs are there for our solar installers, wind technician service businesses, and more cutting-edge energy innovators.
2. The Federal Reserve has announced and will soon open a Main Street Lending Program designed to help small and mid-size firms receive loans in order to sustain their businesses during this difficult period. It is important that clean energy businesses be supported equally in the dispensing of these loans. Effective monitoring of this program will ensure that they are not disadvantaged.
3. Keep existing clean energy projects afloat. This means taking measures to keep clean energy projects financially viable until construction can begin again. More specifically, we need to make sure that clean energy projects can benefit from incentives like the production and investment tax credits by extending their deadlines and giving companies the option to receive cash payments in lieu of the tax incentive.
4. Finally, invest in and accelerate the clean energy transition that is already underway. For

example, even during this health and economic crisis, we can begin to look ahead to support for the transition to electrified transportation and for shoring up the nation's public transit system, as well as for providing stimulus to companies making and servicing electric vehicles, particularly charging station infrastructure and battery manufacturing.

Much can be done during the upcoming recovery period. This is the time to develop a big and bold agenda to get our climate and clean energy trends back on track. And, as part of this recovery agenda, let's be sure our nation's statistical agencies develop high-frequency measures of clean energy activity and employment. This would certainly assist policymakers as they make key decisions about the future path of this important trend toward decarbonization.

ENDNOTES

- 1.** For this definition of clean jobs, we have included sectors that either replace the use of fossil fuels with zero or low carbon substitutes or that provide enabling infrastructure for the adoption of said low carbon substitutes (i.e. smart grid, grid modernization). We have also included the 647 thousand jobs in electricity transmission as renewables now represent the majority of new capacity in the United States and are driving the job growth in this sector. Another distinction worth mentioning is that we have only included full time jobs. This excludes the nearly 100,000 part time jobs in the solar sector.