

Modernizing the electrical grid and energy infrastructure can propel an economic recovery

By David Foster

The stimulus bill before Congress will provide desperately needed support for the nation's energy workers who are losing their jobs by the thousands as the economy slows, gas prices drop and the novel coronavirus spreads. But that individual assistance and the stabilization loans provided to business will not be enough to rebuild the American economy, and particularly its energy sector, which is critical to the employment of all Americans. Nowhere is this more true than in Texas with the largest energy and energy efficiency employment in the nation.

Texas currently has the largest energy workforce in the country with over [607,000](#) employees in the production of fuels, electricity and their transmission, distribution and storage. In addition, [almost 170,000 Texans](#) work in energy efficiency.

Texas has the highest concentration of energy workers of any state in the nation at [4.8 percent](#). In addition, Texas also leads employment in the energy intensive chemicals industry with almost 82,000 and has the most energy intensive manufacturing jobs with over [142,000](#).

For the last five years, key energy sectors of the economy have [produced new jobs](#) at an annual rate 50 percent higher than the economy as a whole. This key finding from the [2020 U.S. Energy and Employment Report \(USEER\)](#), released this week by the Energy Futures Initiative (EFI) and the National Association of State Energy Officials (NASEO), should become an essential component of any federal and state efforts to craft a recovery from the economic crisis

wrought by the novel coronavirus.

Americans will need new jobs, and the energy sector has a proven track record of creating them.

When countries are in the midst of industrialization, there is typically a direct correlation between energy consumption and economic growth. The faster the economy expands, the more energy is consumed. That was especially true of the industrial sector in the first half of the 20th century. But in the United States, economic growth and energy consumption started decoupling decades ago. Except for a brief spike prior to the Great Recession, energy has been declining steadily as a share of US GDP since the late [1970s](#).

What's behind the economic growth in the energy sector? In recent years, the cheap production of energy, simultaneously accompanied by its more efficient use, has become an important job creator. Here is some of what we know and how we can use it to stimulate our economy, create well-paying jobs and reduce our carbon emissions.

Between 2015 and the end of 2019, for example, fuels production created 46,000 new jobs, electric power generation added 177,000, energy infrastructure created 156,000, and energy efficiency an impressive 400,000. The motor vehicles sector, the mainstay of the transportation industry, added 134,000. Together these five sectors, studied by the 2020 USEER, employ 8.27 million people, 5.4 percent of the American workforce. But over the last five years, they created 10.7 percent of all new jobs. The growth of each of these

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sectors was driven by the introduction of new technologies that made energy cheaper and more efficient to use at the same time.

In total, Texas has 959,807 energy, energy efficiency and motor vehicle jobs, up nearly 19,000 jobs from a year prior. Energy efficiency added the most (nearly 6,600 new jobs), followed by fuels (up more than 5,700 jobs) over the [period](#).

Perhaps the fastest near-term boost to the economy can be based in modernizing our energy infrastructure. The transmission, distribution and storage sector has already driven jobs growth due to modernization and hardening investments. New pipelines driven by the oil and gas boom, new transmission lines supporting the growth of renewables and smart grid and other modernization efforts added 156,000 jobs nationwide in the [last five years](#).

But there is so much more opportunity to increase the reliability and efficiency of our grid systems. In 2017 the American Society of Civil Engineers estimated that the electrical grid alone needed \$177 billion of additional investment to raise it from its current [D+ rating to a B](#). The major Democratic contenders for the presidency all recognized this need, having proposed multitrillion-dollar investments in the energy transition.

The transmission, distribution and storage sector, which is one of the most unionized sectors of the American economy, also generates particularly well-paying jobs. As Mike Mulvaney, the director of energy and infrastructure for the United Association of Plumbers, [Fitters](#) and Welders, observed in the [2020 USEER](#), “Some of our pipeline welders make \$150,000 to \$200,000 a year.”

Now, while technology was driving job

growth in the production and delivery of energy, downstream technologies were teaching us how to use that energy more efficiently. Thirty states currently have energy efficiency mandates or voluntary programs. Seventy-five percent of utilities operate energy efficiency programs.

During the Obama administration the Department of Energy completed 50 new energy efficiency rules, covering everything from industrial motors to refrigerators — some of which have been unfortunately rolled back by Donald Trump. In addition, the U.S. EPA, NHTSA and the state of California collaborated to create new CAFE standards that will require fuel efficiency of 50.5 miles per gallon by 2030.

The [result](#) of all these activities was the creation of 400,000 new energy efficiency jobs in the last five years, 494,000 motor vehicle parts jobs that contribute to automotive fuel efficiency, and 96,000 new jobs in hybrid, plug-in and all-electric vehicles.

In [total](#), these five sectors added 915,000 new jobs since 2015, 10.7 percent of all new jobs in the last five years. Energy employment grew by 12.4 percent, compared to overall job growth in the economy of 6 percent.

In light of this remarkable performance, America would do well to look to its energy future to jumpstart our economy.

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