

USA

The United States of America



Overview

56

nuclear power plants

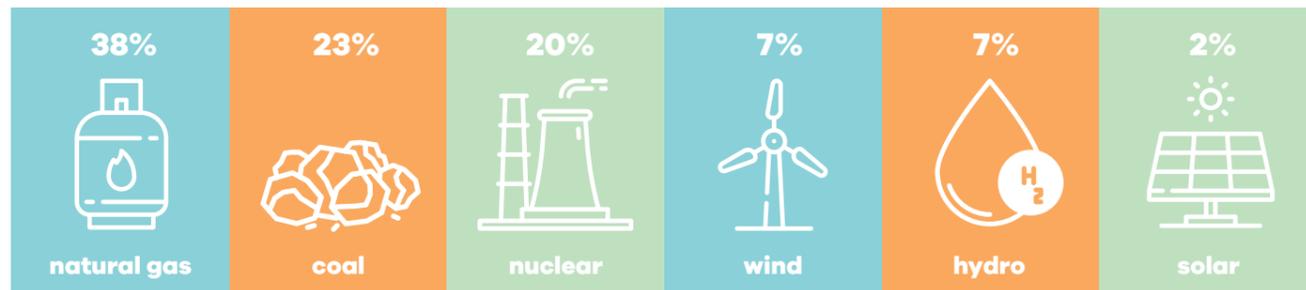
94

nuclear reactors

02

nuclear reactors under construction

Generation mix



US nuclear facts

55% Nearly 55% of carbon-free energy comes from nuclear

475,000 Nuclear supports 475,000 jobs in the US

93% In 2019, the US nuclear fleet had an average capacity factor of 93%, making nuclear energy the most reliable source of energy on the grid

Viewpoint

Nuclear Energy, Current and Future, is Essential to Climate Goals

The U.S. operates the largest fleet of nuclear reactors and produces more electricity from nuclear energy than any other country. Globally, nuclear energy is second only to hydroelectricity among zero-carbon sources, and nuclear has far more potential for growth.

Energy from nuclear reactors that are already running, and from advanced reactors that are quickly moving toward deployment, will be essential to helping the United States meet President Joseph R. Biden's goal for decarbonizing the electric system, and meeting commitments now that U.S. is rejoining The Paris Agreement. Nuclear energy will also help attain the decarbonization goals now in place in many of the 50 states, and of dozens of electric companies. Nuclear energy is becoming the climate uniter among policy makers, drawing support from both political parties.

A focus of that bipartisan support is advanced reactors, which will also provide heat that will displace the coal and fossil gas that are used in industries, and to producing hydrogen, or hydrocarbon fuels using recycled carbon, to power applications that cannot be electrified.

Thus, nuclear technology will move the energy system to a sustainable basis, and will balance the variable demand of modern economies with the variable supply from wind and solar, with clean, emissions-free energy.

To do that job, the new nuclear capacity will have to differ from what is already running. The current generation are workhorses, running at full power more than 90 percent of the hours of the year, but advanced reactors are designed to vary their output, to work with intermittent, weather-based generating sources in a complementary way. Some can even run at 100 percent power continuously but store the energy for times when it is most needed.

This combination of baseload and variable carbon-free nuclear generation is the path to net-zero emissions.

There is plenty of room for new zero-carbon generators of all sorts. Today, nuclear energy already provides nearly 20 percent of the electricity used in the United States, but the bulk of the system, more than 60 percent, relies on fossil fuels. And to decarbonize transportation, home heating and other applications that now use oil or gas, we will need more electricity, and we will need it to be from zero-carbon sources. So a vast increase in nuclear generation will be needed, along with solar, hydro and wind.

Nuclear energy will be essential to the Biden Administration's desire to restart the economy as we emerge from the pandemic and Build Back Better. We will need to add nuclear and other carbon-free sources as promptly as we can, and to retain the carbon-free generation we have now, including nuclear, even in places where coal or natural gas look to be less costly in the short term.

But to stabilize the climate, we will need to decarbonize not only the United States, but the whole world. That will require a generation of reactors that can be designed and manufactured in countries that have the industrial and technological base to do so, and then exported around the world. The need is very large, as a recent survey by Third Way, a non-governmental organization in Washington, DC, indicates.

Developing countries are already cooperating in this effort. They face the double challenge of decarbonizing and making their energy sources sustainable while also expanding their systems to serve their populations and fuel growth.

The transition will not be simple or instant. We would be helped by unambiguous recognition from the global community that nuclear energy is a clean, sustainable source of energy, and by an international commitment to technology-neutral standards for meeting clean energy goals.



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