Past, Present, and Future ...

The United States introduced nuclear energy into our domestic electricity production in 1957 and now produces approximately 20 percent of our total electricity and 70 percent of our low-carbon electricity from nuclear energy, according to the Energy Information Administration. More than 100 U.S. commercial nuclear power reactors provide reliable, affordable electricity in 31 states. Nuclear energy can help meet our Nation's need for dependable electricity into the future.

The use of nuclear power is increasing around the world:

- 29 countries worldwide operate a total of 437 nuclear reactors for electricity generation, with 55 new nuclear reactors under construction in 14 countries.
- Nuclear power plants supply 14 percent of the world's electricity.
- 15 countries rely on nuclear energy to supply at least one-quarter of their total electricity; France generates the highest percentage of its electricity from nuclear power (76 percent).

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U.S. DEPARTMENT OF ENERGY | Nuclear Energy

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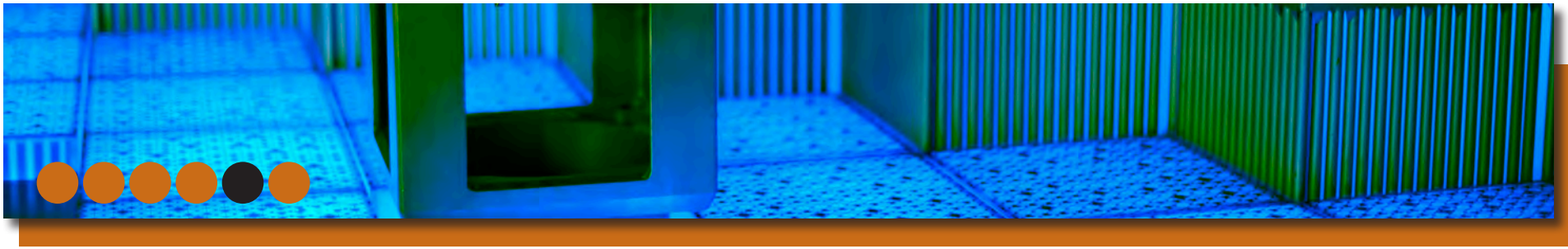
Nuclear Energy—Depend On It

Helping to Power America for More Than Five Decades



Public Approval is High •••

Support for nuclear energy has grown over the past 25 years, according to public opinion polls conducted by Gallup, Pew Research Center, and Bisconti Research-Gfk Roper. These groups report that two of every three Americans now favor the use of nuclear energy and 80 percent of Americans agree that U.S. nuclear power plants are safe and secure.

Leaders Talk about Nuclear Energy •••

"We must harness the power of nuclear energy on behalf of our efforts to combat climate change, and to advance opportunity for all people."

– President Barack Obama

"This investment [in nuclear power] will provide enough clean energy to power more than six million American homes. It will also create tens of thousands of jobs in the years ahead."

– Energy Secretary Steven Chu

Cooperating Resources •••

What fuel is best for electricity production? There is no one right answer. Countries worldwide are seeking:

- Diversity of energy supplies,
- Improved energy security, and
- Low-carbon alternatives to fossil fuels.

Nuclear energy, as a low-carbon option providing reliable electricity, can play an important part in the energy mix.

Nuclear Energy — a Viable Choice •••

In the clean energy mix, low-carbon nuclear power provides a steady base to back up less consistent renewables like wind, hydro, and solar. Nuclear energy is the only alternative to fossil fuels that is currently produced on a scale large enough to dependably meet expanding electricity demand—and it does so at a cost of less than 2 cents per kilowatt hour in operating expenses.

Since 2001, nuclear power plants have had the lowest electricity production costs among coal, natural gas, and oil. As fossil fuel prices rise and concerns about CO_2 emissions grow, nuclear power is becoming an increasingly important part of a clean energy future. Fuel costs make up 28 percent of the overall production costs of nuclear power plants. Fuel costs for coal, natural gas and oil, however, make up about 80 percent of the production costs.

Nuclear power faces challenges of nuclear waste management, nonproliferation, and capital cost containment. DOE's scientists and researchers are working with the larger nuclear community to find ways of putting solutions into place.

Nuclear power plants are flexible and reliable—the best combination for energy assurance. To maximize the environmental benefits, nuclear plants partner with renewable energy sources to provide base load electricity when the sun does not shine or the wind does not blow. Using nuclear, an abundant domestic resource, also reduces our need to import fossil fuels from international sources.

Ensuring Dependable Supply •••▶