

NUCLEAR ENERGY

Nearly 20 percent of our nation's electricity is generated by nuclear energy.

- ▶ The U.S. is home to 104 nuclear reactors located in 31 states.*
- ▶ The last nuclear reactor came online in 1996.
- ▶ A nuclear reactor costs an estimated \$5 billion to \$10 billion to build.
- ▶ Although no new reactors have come online since 1996, a reduction in downtimes and modifications to reactors have increased the generation of nuclear energy by more than one-third between 1990–2006.¹

Nuclear energy is expected to play a key role in mitigating climate change.

- ▶ Nuclear energy is an emissions-free source of electricity.
- ▶ If a federal cap and trade program is established, nuclear energy is expected to become more cost-competitive with coal and natural gas, and thus more likely to spur the development of new plants.

The federal and state governments offer numerous incentives to promote nuclear energy.

- ▶ A federal production tax credit pays 1.8 cents per kilowatt-hour for the first 6,000 megawatts of new capacity.
- ▶ The Department of Energy guarantees Federal Financing Bank loans for 100 percent of the cost of construction.
- ▶ Several states—including Florida, Georgia and Kansas—have passed legislation that allows cost-recovery through rate increases for pre-construction, construction work in progress, and certain operating costs of nuclear plants, according to the Nuclear Energy Institute.²

Several barriers prohibit more widespread adoption of nuclear energy.

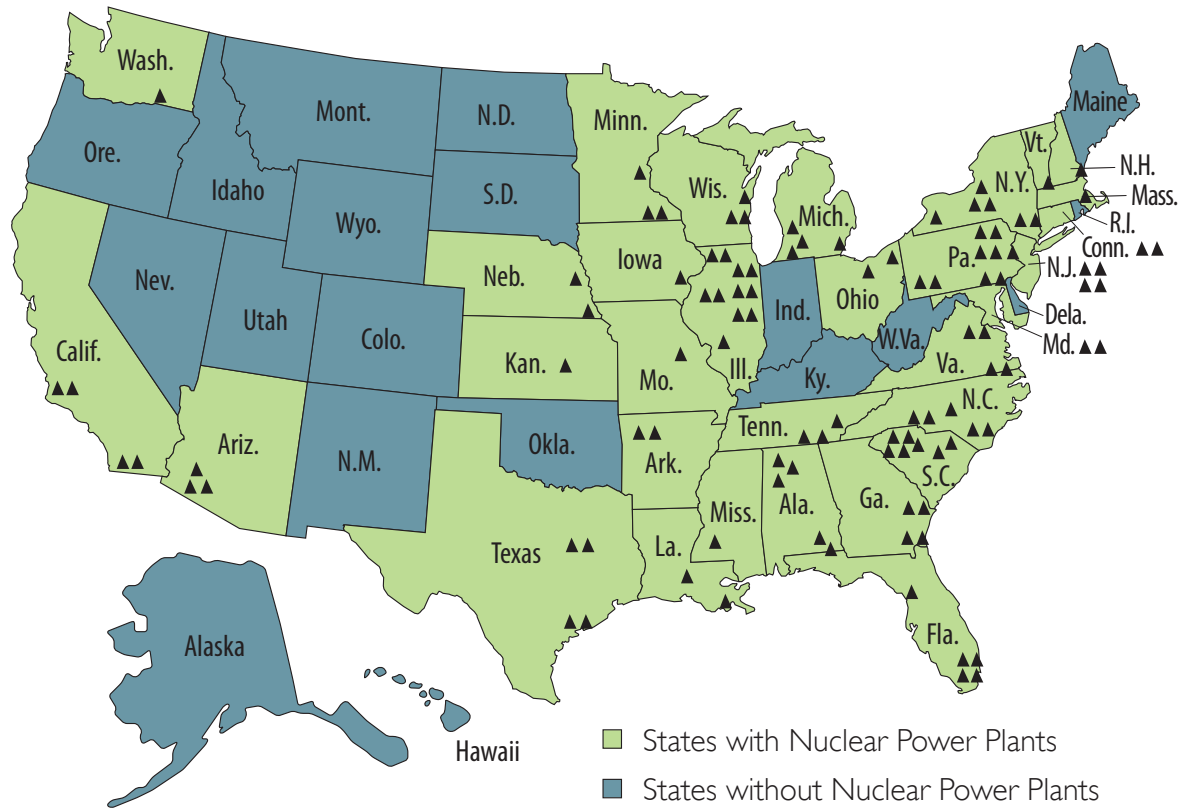
- ▶ As mentioned above, estimated cost is \$5 billion to \$10 billion per reactor.
- ▶ Safety and security concerns related to the ability of plants to withstand a terrorist attack and the potential for radiation leaks. The Congressional Research Service states that the safety of nuclear power plants has been excellent, with only one major accident—Three Mile Island—that could potentially lead to deaths.
- ▶ Storage of nuclear waste and no national, permanent repository.

The absence of a permanent storage repository for nuclear waste is a particular hindrance to the development of nuclear energy.

- ▶ The federal government is responsible for the permanent storage of high-level nuclear waste while states have responsibility for low-level waste.
- ▶ Yucca Mountain in Nevada, which was designated as the national repository, has been terminated and a blue ribbon panel established to explore alternatives.³



States with Nuclear Power Plants⁴



**In Vermont, the plant's license expires 2012. The plant has applied for a 20-year operating extension and is awaiting approval. In February, the Vermont Senate voted 26-4 to block that approval.*

¹ Congressional Research Service, "Nuclear Energy Policy," Holt, Mark, December 2009.

² Nuclear Energy Institute, "State Legislation and Regulations Supporting Nuclear Plant Construction," July 2009.

³ Congressional Research Service.

⁴ Energy Information Administration (EIA), "Reactor Status Table, Table 1," accessed from: <http://www.eia.doe.gov/cneaf/nuclear/page/operation/statoperation.html> on March 1, 2010, and U.S. Nuclear Regulatory Commission, "Map of the United States Showing Locations of Operating Nuclear Power Reactors," accessed from: <http://www.nrc.gov/info-finder/reactor/> on March 17, 2010.