



## The Clean and Efficient Energy Future Americans Want

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Over the next twenty years, the United States faces important decisions about its energy future. Existing sources of energy must be replaced or improved, and threats from global warming add new dimensions to pending choices. The U.S. Energy Information Administration projects the retirement of coal-fired power plants with 60 gigawatts worth of electricity generation capacity, nearly a fifth of America's current capacity. Plant retirements are being hastened by market competition from cheaper natural gas and reduced consumer demand for electricity, as well as by tighter regulation to prevent air pollution. Nuclear power is also under increasing pressure. In 2013 alone, four of 104 U.S. nuclear power reactors went offline, and much of the rest of the fleet is scheduled to go offline during the next few decades.

Although the United States has added considerable capacity in natural gas and wind energy production, meeting future energy requirements for businesses, households, and communities will require constructing hundreds of new power plants and the infrastructure to support them. America's need to renew and upgrade its energy infrastructure opens enormous opportunities, but debates about how to seize them are bound to be complicated by the growing recognition that many means of energy production risk damage not only to local environments but also to the global climate.

As vital new energy projects are planned and executed, citizens and public officials will be centrally involved. Local governments must approve locations and the U.S. Congress and state legislatures will have to pass new laws about matters ranging from tax credits and loan guarantees, to rules about environmental and health standards and fuel efficiency, to funding for the construction of electricity grids. Of course, energy has long been central to politics, but the frequency of high stakes public decisions will ratchet up in the coming decades.

### What Does the American Public Want?

Reconfiguring our nation's energy sector requires guidance from the American citizenry. The public and particular communities will be asked whether they will accept new power plants, electricity transmission lines, pipelines, and other infrastructure. Americans will be queried about whether they want to accept, or not, the environmental and health risks associated with new nuclear power plants and facilities for natural gas development; and they will also be asked about large scale wind "farms" and fields of solar panels. Many of these facilities will surely have to be sited near cities and in localities not accustomed to hosting energy production.

Our research probes Americans' views about energy, drawing on ten years of original attitude surveys conducted in conjunction with the Energy Initiative of the Massachusetts Institute of Technology. Our findings

reveal that people want a starkly different energy portfolio than the one the nation has today. Most Americans want to rely less on energy from burning fossil fuels and turn toward greater reliance on renewable technologies. Strong majorities favor:

- Reduced use of traditional fossil fuels, especially coal and oil.
- Increased use of renewable energy sources, especially wind and solar power.
- Keeping use of natural gas and nuclear power at about the same levels as today.

### **Why Do Americans Hold These Attitudes?**

We find that Americans evaluate various energy sources according to perceptions about environmental harms and costs.

- Americans believe that coal, oil, and nuclear power have the most significant environmental impacts. They consider natural gas to be only slightly harmful to the environment, and do not think of renewable sources of energy as having any harmful effects at all.
- Americans view wind and solar power as inexpensive and consider coal, natural gas, and hydropower to be moderately priced. Oil and nuclear power are seen as expensive sources.
- Attitudes about energy are driven mostly by people's beliefs about local environmental threats – such as air pollution, water pollution, and toxic waste. Adverse health impacts from such local conditions matter more to people than concerns about climate change.
- Our analysis reveals that when people have to make trade-offs, they give more weight to concerns about environmental harms than to worries about prices and economic costs.

### **Implications for the Future of U.S. Energy Policy**

The U.S. public views energy sources and related public policies much as consumers view any good, with preferences based on perceptions of economic costs and environmental harms. Americans want energy to cost less and be less harmful to human health and the environment. When forced to choose, people much prefer cleaner energy even if costs are higher than they would like. Perceptions of the costs and harms associated with specific fuels largely explain American attitudes about all sources of energy, including coal, natural gas, nuclear power, and solar or wind power.

Our findings suggest that technological advances that diminish environmental harms or reduce costs will make innovative energy sources more competitive in the economic marketplace, more acceptable to the public, and more palatable in the political realm. In essence, the American public wants cheap but dirty energy options like coal and oil to become cleaner; and it wants currently costlier but cleaner energy choices such as wind and solar power to become less expensive. Today, there are no energy technologies that are both cheap and clean, but our research suggests that Americans will strongly endorse public policies, regulatory or otherwise, that support the development and use of cheap, clean energy. Indeed, there are signs that many Americans will accept the mitigation of environmental harm at some increased cost for the production and use of cleaner kinds of energy.

Read more in Stephen Ansolabehere and David M. Konisky, *Cheap and Clean: How Americans Think about Energy in the Age of Global Warming* (MIT Press, 2014).