

Sen. Lamar Alexander: The United States without nuclear power



U.S. Sen. Lamar Alexander (R., Tenn.), chairman of the Senate Appropriations Committee's Subcommittee on Energy and Water Development, presented the following speech on February 5 at the Nuclear Energy Institute, in Washington, D.C. (Only minor edits have been made to the text for purposes of clarity on the printed page.)

I'm here today to talk about the day the United States is without nuclear power—a day we don't want to see in our country's future.

That may seem like a distant and unlikely scenario to some. In fact, it's a real threat to our economy and way of life. According to a 2013 report by the Center for Strategic and International Studies, up to 25 of our 99 nuclear reactors could close by 2020.

I want to discuss what difference this would make in the everyday lives of Americans. This is best told in the stories of other countries, but first a few facts to consider:

1. The United States uses about 25 percent of all electricity in the world to power our industries, our computers, our homes, and almost everything else we depend upon.
2. Our 99 nuclear reactors provide about 20 percent of that electricity. This is electricity that doesn't turn on or off when the wind blows or the sun shines and is available 90 percent of the time. It is cheap and reliable and safe—we've never had anyone die in a nuclear accident at any of our commercial reactors or on our naval fleet.
3. At a time when the world's leading science academies and many Americans say climate change is a threat—and that humans are a significant cause of that threat—nuclear power provides about 60 percent of our country's carbon-free electricity.

We're about to take a yearlong look at all this. Our subcommittee will begin expanded oversight with budget hearings in February and March, and then in April we'll turn toward a series of hearings about the future of nuclear power in our country—and what it would be like for the United States to be without it.

Three stories

The best way to imagine what the United States might be like without nuclear power is to look at the stories of three countries: Japan, Germany, and the United Arab Emirates.

First is Japan, and the many lessons from the Fukushima nuclear meltdown in 2011. We know what the safety problem was: The utility ran out of water to cool the reactors. Perhaps the more important lesson is what it might look like for a country like ours—Japan is the largest economy that is most like our own—to be without nuclear power.

After Fukushima, Japan began shutting down its 48 nuclear reactors, which provided 30 percent of the country's electricity. Things have changed, but not for the better.

The cost of generating electricity in Japan has increased 56 percent since they began shutting down their reactors in 2011. In June 2014, three major business organizations—the Japan Business Federation (Keidanren), the Japan Chamber of Commerce and Industry, and the Japan Association of Corporate Executives (Keizai Doyukai)—submitted a written proposal to the industry minister seeking an early restart of the nuclear reactors. “The top priority in energy policy is a quick return to inexpensive and stable supplies of electricity,” they said.

This is especially important in an economy that, like ours, depends heavily on manufacturing for jobs. According to the World Nuclear Association, a local mayor said that if Japan doesn't keep these reactors operating, “Japan's economy will wither. Our young people will move abroad, leaving the country with only grandpas and grandmas.”

A *Wall Street Journal* article said that the Japanese have turned their air conditioners up to 82 degrees in order to cut back on electricity use—which would be fine, except that thousands of people have gone to the hospital with heatstroke. The emperor and empress have even been wandering around the Imperial Palace at night with flashlights and candles.

Our second example is Germany. I traveled there recently, and what I found was an energy mess.

Germany, until March 2011, obtained one-quarter of its electricity from nuclear energy, using 17 reactors. Then the government decided to replace nuclear power with wind and solar as part of an expensive cap-and-trade policy—like the one proposed here in the past—that deliberately raises the price of certain types of energy as a way of achieving clean-energy independence.

The cost of attempting to replace nuclear power with wind and solar and their accompanying infrastructure is estimated by the

German government at \$1.2 trillion, and Germany is facing new problems that hinder its efforts to pursue clean energy.

One problem is that the subsidies for wind and solar are very high in order to encourage enough production. In a BBC News article, “Can Germany afford its ‘energy bender’ shift to green power?,” a minister for economics in Germany says that Germany’s law on renewable energy will not only lead to increased electricity prices, but it is also a nonmarket, planned system that endangers the industrial base of the German economy.

Another problem is that Germany does not produce enough reliable, baseload energy for an important manufacturing economy. So, while closing its own nuclear reactors, Germany is buying nuclear power from France; buying natural gas from a very unreliable partner, Russia; and—in a remarkable turn of events—Germany started building coal plants.

So what’s the result? One is that the Germans have become energy dependent on countries like Russia. Germany is on track to get nearly 55 percent of its baseload electricity capacity from other countries by 2020.

Another is that the cost of electricity in Germany has skyrocketed. According to the *Wall Street Journal*, the average electricity prices for companies in Germany have jumped 60 percent over the past five years because of costs passed along as part of government subsidies for renewable energy producers. Prices are now more than double those in the U.S., and Germany has among the highest household electricity prices in the European Union.

During my visit, when I asked a minister for economics what he would say to a manufacturer concerned about energy costs in Germany, he said, “I would suggest he go somewhere else.”

Finally, there is the United Arab Emirates, which is a different kind of story. While Germany was closing its nuclear plants, the United Arab Emirates was building nuclear plants.

In just 12 years after notifying the International Atomic Energy Agency of its intent to install nuclear power, the Emirates will have completed four reactors, which will provide nearly 25 percent of its annual electricity by 2020. This is a nearly three-and-a-half times faster increase in emission-free green power than Germany has accomplished with wind and solar.

What the United States needs to do

So, what would it take to avoid the path of Japan or Germany?

1. *Build more nuclear reactors.* I have proposed that we build 100 new reactors, which may seem excessive, but not with the Center for Strategic and International Studies saying that up to 25 of our 99 nuclear reactors could close by 2020.

Add to this a projection by the U.S. Energy Information Administration that about 20 percent of our current capacity from coal is scheduled to go off line by 2020. If that were replaced entirely by nuclear power, it would require building another 48 new, 1,250-megawatt reactors—which, by the way, would reduce our carbon emissions from electricity by another 14 percent.

2. *Solve the nuclear waste stalemate.* There is renewed hope under our Republican majority that we can solve the 25-year-old stalemate on what to do with waste from our nuclear reactors—and Yucca Mountain can and should be part of the solution.

Just last week the Nuclear Regulatory Commission completed its safety evaluation report. It said that Yucca Mountain met all of the safety requirements for “individual protection, human intrusion,” and “protection of groundwater” through “the period of geologic stability.” The NRC and the Environmental Protection Agency define the “period of geologic stability” as 1 million years. To continue to oppose Yucca Mountain because of radiation concerns is to ignore science—as well as the law.

Later this year, I also plan to again introduce bipartisan legislation that would create both temporary and permanent storage sites for nuclear waste by making local communities, states, and the federal government equal partners in the process. We will still need these sites even after Yucca Mountain is open, because our exist-

ing nuclear waste, which is stored on-site at reactors around the country, would more than fill up Yucca Mountain.

3. *Relieve the burdens of excessive regulation.* We want nuclear power to be safe, but we don’t want to make it so hard and so expensive to build and operate reactors that you can’t do it. We should be examining the regulation of the nuclear reactor licensing process to make sure it’s not an undue burden. This year our subcommittee will hold an additional hearing to discuss the Nuclear Regulatory Commission’s budget and conduct some much-needed oversight.

4. *Stop picking winners and losers.* We need to end policies that pick winners and losers in the marketplace, the most conspicuous example of which is the wasteful wind production tax credit, which has been in place for 22 years. Extending this wasteful wind subsidy for one year costs taxpayers more than \$6 billion. The subsidy to Big Wind is so generous that in some markets, wind producers can literally give their electricity away and still make a profit. This phenomenon is called “negative pricing,” and it has the effect of making nuclear and coal plants less competitive and more likely to close.

Sometimes the Obama administration’s national energy policy seems like a national windmill policy. But that’s not a sound plan for America’s future.

Even after 22 years and billions of dollars of subsidy, wind produces only 4 percent of our electricity, according to the U.S. Energy Information Administration, and that’s when the wind blows. It would take a line of windmills stretching the length of the Appalachian Trail, from Georgia to Maine, to replace just eight nuclear reactors. And you’d still need nuclear, gas, or coal when the wind doesn’t blow.

And until there’s some way to store wind power—which can be produced only when the wind is blowing, often at times we don’t need it—it would be dangerous for a country our size to rely on wind. Relying on wind when nuclear plants are available is the equivalent of going to war in sailboats when nuclear ships are available.

5. *Double energy research.* One of our biggest challenges is the need to increase government-sponsored research. It’s hard to think of an important technological advance since World War II that has not involved at least some government-sponsored research, which is why I’ve proposed to double energy research.

Take for example our latest energy boom, natural gas. The development of unconventional gas was enabled in part by 3D mapping at Sandia National Lab in New Mexico and the Department of Energy’s large-scale demonstration project. Then our free enterprise system, and our tradition of private ownership of mineral rights, capitalized on the research.

Another example is the work being done on small reactors, which would allow nuclear power to be produced without as high of capital investment and to be accessible in more places.

6. *Encourage energy diversity.* Historically, natural gas prices have a way of going up and down, sometimes abruptly, and experienced utility managers generally prefer more than one way of producing reliable, baseload power. This is yet another reason why we need nuclear energy to be a major part of how we power our 21st century economy.

That’s why I wanted to come here today, to talk about the fact that a United States without nuclear power—or with very little nuclear power—is a very real possibility. It’s a possibility we should not want, if we want a strong country and a strong economy.

So, we need to prepare now, by building more reactors, ending the stalemate on what to do about nuclear waste, stopping Washington from picking winners and losers in the marketplace, pushing back against excessive regulation, fueling more free-market innovation with government-sponsored research, and encouraging energy diversity.

If we do these things, the United States will not see a day without nuclear power. And our energy future will be bright. **NN**