



Published on *InsideClimate News* (<http://insideclimatenews.org>)

[Home](#) > [Articles](#) > [Guest Writer's articles](#) > [Germany Has Built Clean Energy Economy That U.S. Rejected 30 Years Ago](#)

Germany Has Built Clean Energy Economy That U.S. Rejected 30 Years Ago

Nov 13, 2012

By Osha Gray Davidson

Clean Break: Chapter 1 in the story of Germany's switch to renewables

By Osha Gray Davidson

Berlin, Germany—The view from the Reichstag roof on a sun-drenched spring afternoon is spectacular. Looking out over Berlin from the seat of the German government, you can see the full sweep of the nation's history: from Humboldt University, where Albert Einstein taught physics for two decades, to the site of the former Gestapo headquarters.

I'm not here to see this country's freighted past, however. I've come to learn about what a majority of Germans believe is their future—and perhaps our own. There is no better place to begin this adventure than the Reichstag, rebuilt from near ruins in 1999 and now both a symbol and an example of the revolutionary movement known as the *Energiewende*. The word translates simply as, "energy change." But there's nothing simple about the *Energiewende*. It calls for an end to the use of fossil fuels and nuclear power and embraces clean, renewable energy sources such as solar, wind and biomass. The government has set a target of 80 percent renewable power by 2050, but many Germans I spoke with in three weeks traveling across this country believe 100 percent renewable power is achievable by then.

*This is Chapter 1 of a six-part series on Germany's remarkable clean break with coal, oil and nuclear energy. You can [read it all now](#) ^[2] as a **Kindle Single ebook** on Amazon for 99 cents.*

Such a massive power shift may sound impossible to those of us from the United States, where giant oil and coal corporations control the energy industry and the very idea of human-caused climate change is still hotly contested. Here in Germany, that debate is long over. A dozen years of growing public support have driven all major political parties to endorse the *Energiewende*. If a member of parliament called climate change a hoax or said that its cause is unknown, he or she would be laughed out of office.

"The fight now, to the extent that there is one, is over the speed of the transition," Jens Kendzia

told me as we stood on the Reichstag roof. Kendzia is chief of staff for a leader of the center-left Green Party, which crafted the legislation responsible for the *Energiewende's* success.

In an interview later that day, Dr. Joachim Pfeiffer, a leading spokesman for the center-right Christian Democrats, boasted about the *Energiewende's* progress under his party.

"We'll definitely get to 35 percent renewable power by 2020," he said, referring to the next official target. "In fact, we'll probably reach 40 percent."

[Click here to view the slideshow](#) ^[3] of Germany's switch to renewables.

Pfeiffer isn't happy about every aspect of the campaign. He thinks the German public's call to eliminate nuclear power by 2022 was "an emotional reaction to what happened at Fukushima." But he's quick to add that this is just his personal belief. After all, the leader of his own party, Chancellor Angela Merkel, made the nuclear phase-out national policy in 2011. "Eighty percent of Germans are now against nuclear power," Pfeiffer explained, placing his hands on the table palms face up, in a gesture of capitulation. "It's over."

The pervasiveness of the *Energiewende* was driven home for me on a six-hour train ride through the German countryside. Gazing out the window as the train raced from Hamburg in the north to near the border with Switzerland in the south, massive wind turbines and rooftops covered with solar panels were seldom out of sight. A couple of hours into the journey we rounded a bend and the scene took on a surreal quality. Yet another cluster of barns and outbuildings came into view, the red ceramic roof tiles nearly hidden by blue, solar photovoltaic panels. The buildings swam in a sea of bright yellow rapeseed—the raw material of biodiesel fuel. On a distant slope, the long thin blades of three wind turbines revolved in unison as if choreographed. I was suddenly seized by the desire to grab the well-dressed man in the seat next to me, who was engrossed in today's *Die Zeit*, and demand that he look out the window and tell me if this *Energiewende* parade is real or a moveable tableau staged for foreign journalists.

The numbers I gathered on my trip ^[3] seem as unlikely as the scene out the window.

Twenty-five percent of Germany's electricity now comes from solar, wind and biomass. A third of the world's installed solar capacity is found in Germany, a nation that gets roughly the same amount of sunlight as Alaska. A whopping 65 percent of the country's total renewable power capacity is now owned by individuals, cooperatives and communities, leaving Germany's once all-powerful utilities with just a sliver (6.5 percent) of this burgeoning sector.

Still, major hurdles remain in Germany's quest for 100 percent renewable power. More than 5,000 miles of power lines need to be added to the electrical grid to accommodate the new energy sources—at a staggering cost of \$25 billion. And researchers will have to find a more cost-effective means of storing energy produced by solar and wind power.

But *Energiewende* advocates approach these hurdles with the same mindset they've used to clear earlier ones. When I asked Hans-Josef Fell, the chief architect of the *Energiewende's* legal framework, about the energy storage problem, he immediately corrected my terminology. "It is not a problem," he insisted. "It is a *task*." By keeping their eyes on the prize of 100 percent renewable power, supporters have achieved more than anyone outside their ranks had thought possible.

The Reichstag, the home of Germany's parliament, is a perfect microcosm of the *Energiewende* I saw from the train. Revolutionary in its architecture and use of energy, the building is at once beautiful and functional. Over the grand plenary chamber, which was once capped by a dark and ponderous dome, world-renowned British architect Sir Norman Foster has set a glass cupola with a viewing ramp winding to the very top—symbols of government transparency and democratic ideals. Inside the dome is a cone-shaped "light sculpture" made of 360 mirrors, extending from the apex of the cupola down into the heart of the chamber 75 feet below. The cone funnels sunlight throughout the building. A bank of solar panels, seamlessly embedded in the roof, powers a swiveling metal shade that reduces glare by tracking the sun's path and filtering its harshest rays.

In addition to this extraordinary system above the central chamber, there's a cogenerator in the Reichstag's basement. Powered by rapeseed oil, it produces both electricity and heat. Heat from electrical generation is usually dumped into the environment and lost forever. But excess heat from this cogenerator is pumped into a natural aquifer nearly a thousand feet underground, where it is easily reclaimed to warm the building in winter. The Reichstag generates half of all the electricity it consumes, and gets the rest from renewable sources offsite, making it the greenest parliament in the world.

After I returned home from Germany, I visited the U.S. Capitol Building in Washington, D.C., to see how its energy usage stacks up against the Reichstag's. Three blocks south I found the Capitol Building's power source, a grimy complex dominated by twin smokestacks of stained yellow brick. The Capitol Power Plant was built in 1910 next to a railroad line, so it could receive the thousands of tons of West Virginia coal it burned every year. Though it stopped generating electricity in 1957, the plant's boilers still heat the Capitol in winter and a large unit cools the Capitol in the summer.

For decades, neighbors and health officials have complained about the noxious smoke, fumes and fine particles coming from the yellow smokestacks. Representative James Moran, a Virginia Democrat, once dubbed the power plant the "armpit of the Capitol." But tentative discussions in 2000 on phasing out coal were immediately scuttled by powerful senators from coal mining states.

On June 21, 2007, then-Speaker of the House Nancy Pelosi unveiled the "Green the Capitol" program with the twin goals of switching to 100 percent renewable energy and making the House carbon-neutral by December 2008. "By the power of our example," Pelosi declared at the time, "we hope to send a message to the world and to the country."

But standing outside the plant's fenced perimeter on a sweltering afternoon five years later, it was clear that while Germany jumped headlong into the *Energiewende*, America has made timidity its guide. The House dropped its quest for carbon neutrality in 2009, and the government's biggest success has been substituting one form of fossil fuel for another: The plant now burns less coal and more natural gas.

The program didn't achieve its own goals—much less the vastly more ambitious ones met by the Reichstag.

The U.S. wasn't always so timid. Thirty years ago, we led the world in renewable energy research and production, and Jimmy Carter's White House was the first government building in the world to install solar panels on its roof. Ursula Sladek, a resident of the tiny Black Forest

village of Schönau, remembers reading about the installation project in the 1970s, when the United States was hit by soaring oil prices and gasoline shortages. Sladek, an elementary school teacher married to the village doctor, marveled at America's resilience, ingenuity and spirit—and at President Carter's vision.

The panels were unceremoniously hauled down by President Ronald Reagan a few years later, of course, and the image of Carter in a wool cardigan counseling his fellow citizens to dial back their thermostats to conserve energy became an object of ridicule in the United States.

But Sladek—like most of the Germans I met—never got the joke. For them, the peanut farmer from Georgia, who tried to chart a new energy future for America, became the unlikely inspiration for their *Energiewende*.

Sladek was a pioneer in the movement. In 1986, after radiation from a Soviet reactor in Chernobyl rained down on Schönau, she led a group of 650 villagers who tried to persuade their utility, a regional monopoly, to stop using nuclear power. When their efforts failed, the group made a pivotal decision: They would generate their own electricity from safe, renewable power. The David-and-Goliath battle lasted a decade, but the group's ultimate success helped reshape Germany's energy landscape.

I talked with Sladek over tea at the cooperative she founded, the *Elektrizitätswerke Schönau*, a modern single-story building with solar panels on the roof, deep in the Black Forest. The once rag-tag operation today supplies renewable energy to 180,000 homes and is adding more than 2,000 new customers a month.

When it was time for Sladek to get back to work, I finished with the one question I asked in almost every interview: What lessons can the United States learn from Germany's *Energiewende*?

The question took her by surprise. She looked around the room at what had been accomplished by a handful of ordinary citizens. "This is something very American, isn't it?" she said. "The Americans are people who say: 'We can do it ourselves.'"

Sladek paused. Then she spoke slowly and simply like the schoolteacher she once was. "You can't wait for what you want to come from above," she said. "We are here. We can do something. And so, we begin."

[Chapter 2 here](#) ^[4]

[Purchase the Kindle Single on Amazon](#) ^[5]

Funding for Clean Break was provided by the Heinrich Böll Foundation, through a Climate Media Fellowship, and by the Rockefeller Brothers Fund.

Links:

[1] [http://insideclimatenews.org/sites/default/files/Solar panels in Bernal .jpg](http://insideclimatenews.org/sites/default/files/Solar%20panels%20in%20Bernal.jpg)

[2] http://www.amazon.com/Clean-Break-Kindle-Single-ebook/dp/B00A4IEJ5K/ref=sr_1_cc_1?s=aps&ie=UTF8&qid=1352759136&sr=1-1-catcorr&keywords=clean+break+insideclimate+news

[3] <http://insideclimatenews.org/slideshow/germany-energiewende-solar-wind-renewable-energy-biodiesel>

[4] <http://insideclimatenews.org/news/20121114/germany-energiewende-clean-energy-economy-renewables-tariff->

FiT-solar-wind-biomass-nuclear-utilities-cooperatives

[5] <http://www.amazon.com/Clean-Break-Kindle-Single-ebook/dp/B00A4IEJ5K/>

[6] <http://insideclimatenews.org/news/20120514/europe-feed-tariff-solar-wind-long-island-new-york-germany-rates-utility>

[7] <http://insideclimatenews.org/news/20121108/obama-second-president-epa-california-cap-and-trade-low-carbon-fuels-global-warming-greenhouse-gases-solar-energy>

[8] <http://insideclimatenews.org/news/20120924/stae-green-banks-solar-power-wind-energy-connecticut-republicans-clean-energy-states-tax-credits>

[9] <http://insideclimatenews.org/special-focus-topics/building-green>

[10] <http://insideclimatenews.org/topic/clean-break>

[11] <http://insideclimatenews.org/topics/clean-economy>

[12] <http://insideclimatenews.org/topic/clean-energy-economy>

[13] <http://insideclimatenews.org/topic/germany>

[14] <http://insideclimatenews.org/reuters-topics/green-energy>

[15] <http://insideclimatenews.org/topic/nuclear-power>

[16] <http://insideclimatenews.org/topic/renewable-energy>

[17] <http://insideclimatenews.org/topics/solar-energy>

[18] <http://insideclimatenews.org/topics/nuclear-energy>

[19] <http://insideclimatenews.org/topics/wind-energy>

[20] <http://insideclimatenews.org/topics/biofuels>