

## The Claim:

“Transitioning toward a completely nuclear-free clean energy system for electricity, heating, and transportation is not only possible and affordable; it will create millions of good jobs, clean up our air and water, and decrease our dependence on foreign oil.”<sup>1</sup>

**BERNIE SANDERS**

## The Reality:

“Renewable-energy mandates may appeal to ‘green’ voters; but Europe’s experience clearly shows that such mandates drive up electricity prices and hurt national competitiveness.”

**ROBERT BRYCE**

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## Reality Check

Some of America’s most prominent politicians want national mandates for renewable electricity. In addition, over the past seven months, three states—California, New York, and Oregon—have instituted plans that will require utilities to produce 50 percent of the electricity that they sell to customers from renewables. The politicians backing these measures claim that such mandates will help reduce customers’ bills and create jobs.

Had these politicians considered the surge in electricity costs that have occurred in Europe in recent years, they might have been less eager to push such mandates. Indeed, the three EU countries that have been the most aggressive in pursuit of renewable energy—Germany, Spain, and the U.K.—have all seen their electricity rates increase more than other EU countries. Further, Germany and the U.K. are seeing job losses due to high energy prices.

## Key Findings

- Between 2005, when the EU adopted its Emissions Trading Scheme, and 2014, residential electricity rates in the EU increased by 63 percent, on average.
  - ◆ Over the same period, residential rates in the U.S. rose by 32 percent.
  - ◆ Industrial rates in Europe have increased about twice as quickly as in the U.S.
- EU countries that have intervened the most in their energy markets—Germany, Spain, and the U.K.—have seen their electricity costs increase the fastest. During 2008–12, those countries spent about \$52 billion on interventions in their energy markets.
  - ◆ During 2008–12, Germany’s residential electricity rates increased by 78 percent, Spain’s rose by 111 percent, and the U.K.’s soared by 133 percent.
- In 2016 alone, German households will be forced to spend \$29 billion on renewable electricity with a market value of \$4 billion—more than \$700 per household.
  - ◆ The residential electricity rate increase in Germany has been 13 cents per kilowatt-hour—an increase larger than the average cost of residential electricity in the U.S. (12.5 cents).
- While European countries have succeeded in creating jobs in the solar and wind industries, their energy policies have also resulted in significant job losses elsewhere.
  - ◆ Germany’s energy minister has warned that the continuation of current policies risks the “deindustrialization” of the country’s economy.

## On the Record

In January 2014, Germany’s energy minister declared that his country had reached ‘the limit’ with renewable-energy subsidies and that Germany had to reduce its electricity prices or risk ‘deindustrialization.’ To avoid the kinds of results seen in Europe, U.S. policymakers should be required to do rigorous cost-benefit analyses before imposing renewable-energy mandates. U.S. policymakers must also consider the impact that higher energy costs will have on overall employment and industrial competitiveness.

**Robert Bryce**, Senior Fellow, Manhattan Institute

## A European Model for America?

The push for leadership on climate issues has led U.S. policymakers at the federal and state levels to push for European-style energy policies. Hillary Clinton has declared her intent to increase domestic solar-energy capacity to about 140 gigawatts by 2020, a sevenfold increase over current capacity.<sup>2</sup> Bernie Sanders has introduced an energy plan that would require America to get 80 percent of its energy from renewables by 2050.<sup>3</sup>

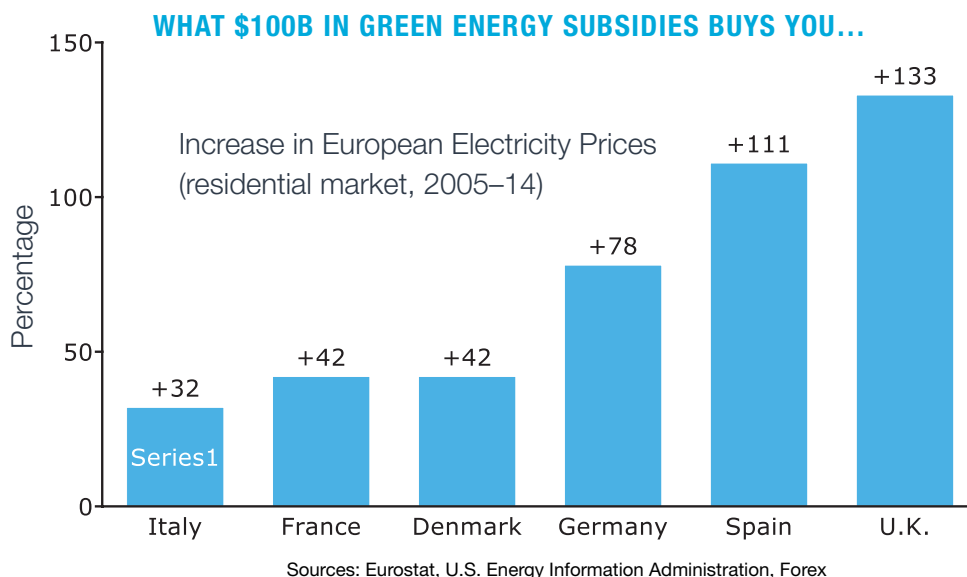
Similar moves are afoot at the state level. In October 2015, California governor Jerry Brown signed into law a bill that requires the state’s electric utilities to get 50 percent of their power from renewables by 2030.<sup>4</sup> In his push for renewables and greater energy efficiency, Brown has claimed that California will create some 500,000 new jobs.<sup>5</sup>

In December 2015, New York governor Andrew Cuomo directed his state’s Department of Public Service to “design and enact a new Clean Energy Standard mandating that 50 percent of all electricity consumed in New York by 2030 result from clean and renewable energy sources.”<sup>6</sup> As part of that push, the state plans to spend \$15 million to train some 10,000 people in clean energy technologies.<sup>7</sup> In March 2016, Oregon’s governor, Kate Brown, signed into law Senate Bill 1547, which requires the state’s utilities to meet 50 percent of their customers’ needs with renewable electricity by 2040.<sup>8</sup>

After it introduced the Clean Power Plan (CPP), the Environmental Protection Agency claimed that the new regulations would save consumers money and create jobs. By 2030, the agency claims, the CPP will “save Americans about \$8 on an average monthly residential electricity bill ... [and will create] jobs related to demand-side energy efficiency, such as jobs for machinists to manufacture energy efficient appliances, construction workers to build efficient homes and buildings or weatherize existing ones.”<sup>9</sup>

## Europe’s Rising Energy Prices

Since 2005, the EU and several of its member countries have enacted various climate-change initiatives, including emissions trading and renewable-energy mandates. During 2008–14, EU-member countries spent some \$106 billion on energy subsidies. Three countries—Germany (\$27.2 billion), Spain (\$11.1 billion), and the U.K. (\$14.3 billion)—accounted for nearly half of that sum. Those three countries have also seen the largest increases in residential electricity rates. According to Eurostat, during 2005–14, residential rates in the EU increased by 63 percent, on average. In Germany, those rates increased by 78 percent; in Spain, they increased by 111 percent; and in the U.K., they rose by 133 percent. Over that same period, residential rates in the U.S. rose by 32 percent.<sup>10</sup>



In 2016 alone, German residential customers will pay renewable-energy surcharges of some \$29 billion for electricity that, on the electricity market, is worth only about \$4 billion.<sup>11</sup> Germany has about 40.2 million households.<sup>12</sup> Thus, in 2016, renewable-energy surcharges will cost the average German household about \$721. European countries are seeing big increases in industrial rates, too. During 2005–14, industrial electricity prices in the EU increased by 46 percent, nearly twice the increase seen in the U.S. over the same period. Industrial electricity prices in the U.K. jumped by 133 percent, to 16.6 cents per kilowatt-hour, among the highest rates in the European Union.

Over the same period, industrial rates in Spain jumped by 84 percent, to 15.8 cents per kilowatt-hour. Germany's industrial-electricity prices have not increased as quickly because of a policy that exempts about 2,000 energy-intensive industrial companies from renewable-energy surcharges.<sup>13</sup> Nevertheless, by 2014, industrial electricity rates in Germany had increased by about 15 percent over 2005 levels, to 11.2 cents per kilowatt-hour. Those rates are nearly 60 percent higher than the average industrial price of electricity in the U.S., which, in 2014, stood at 7.1 cents per kilowatt-hour.

## **A Green-Energy Warning for America**

In January 2014, Germany's energy minister, Sigmar Gabriel, declared that his country had reached "the limit" with renewable-energy subsidies and that Germany had to reduce its electricity prices or risk "deindustrialization."<sup>14</sup> Germany's renewable-energy push has had a particularly harsh effect on two of its largest utilities, RWE and E.On. Since 2011, the two companies have cut a total of 32,000 jobs. Over the past year, Siemens, one of Germany's biggest industrial companies, has shed 4,500 jobs.<sup>15</sup> The job losses in Germany's industrial sector would likely be far higher but for the fact that the German government has provided about \$10 billion in subsidies to its most energy-intensive industries since 2013.<sup>16</sup>

British industry is also suffering. In March 2016, Tata Steel announced that it was planning to sell its steelworks in Britain, a move that puts about 15,000 jobs at risk. Among the reasons the company cited for its plan to pull out of the U.K. was high energy costs.<sup>17</sup> In the second half of 2015, British steelmakers and other large industrial users of electricity paid nearly twice as much for electricity as the EU average.<sup>18</sup>

Meanwhile, Spain has effectively ended its renewable-energy subsidies, a move that has halted the expansion of the country's solar and wind sectors. Nevertheless, the country's electric utilities have accumulated a \$32 billion deficit that must now be repaid, by adding surcharges of about 55 percent to customers' bills. High energy costs are only adding to Spain's economic woes. During 2004–14, Spain's GDP grew by just 0.6 percent per year, on average, and the country's unemployment rate now stands at about 21 percent.<sup>19</sup>

To avoid the kinds of results seen in Europe, U.S. policymakers at the federal and state levels should be required to do rigorous cost-benefit analyses before imposing renewable-energy mandates. U.S. policymakers must also consider the impact that higher energy costs will have on overall employment and industrial competitiveness.

## Endnotes

- <sup>1</sup> See <https://bernieanders.com/issues/climate-change>.
- <sup>2</sup> See <http://fortune.com/2015/07/27/hillary-clinton-solar-industry>; and <http://www.seia.org/research-resources/solar-industry-data>.
- <sup>3</sup> See <https://bernieanders.com/issues/climate-change>.
- <sup>4</sup> See <http://www.windpowermonthly.com/article/1363977/california-sets-50-renewable-energy-target>.
- <sup>5</sup> See <http://articles.latimes.com/2010/aug/08/local/la-me-brown-jobs-20100809>; and [https://www.gov.ca.gov/docs/Clean\\_Energy\\_Plan.pdf](https://www.gov.ca.gov/docs/Clean_Energy_Plan.pdf).
- <sup>6</sup> See <https://www.governor.ny.gov/news/governor-cuomo-directs-department-public-service-begin-process-enact-clean-energy-standard>.
- <sup>7</sup> See <http://www.capitalnewyork.com/article/albany/2016/01/8587813/administration-plans-train-10000-clean-energy-workforce>.
- <sup>8</sup> See [http://www.oregonlive.com/politics/index.ssf/2016/03/kate\\_brown\\_will\\_sign\\_contentio.html](http://www.oregonlive.com/politics/index.ssf/2016/03/kate_brown_will_sign_contentio.html).
- <sup>9</sup> See <https://www.epa.gov/cleanpowerplan/fact-sheet-clean-power-plan-benefits>.
- <sup>10</sup> See [https://www.eia.gov/electricity/data/state/generation\\_monthly.xlsx](https://www.eia.gov/electricity/data/state/generation_monthly.xlsx).
- <sup>11</sup> See <https://global.handelsblatt.com/edition/396/ressort/companies-markets/article/how-to-kill-an-industry>. The article states that the renewable-energy surcharges for 2016 will likely total 25.5 billion euros and that these surcharges “will only be worth 3.6 billion euros on the market.”
- <sup>12</sup> See <https://www.destatis.de/EN/FactsFigures/SocietyState/Population/HouseholdsFamilies/HouseholdsFamilies.html>.
- <sup>13</sup> See <http://www.theguardian.com/environment/2015/nov/02/germanys-planned-nuclear-switch-off-drives-energy-innovation>.
- <sup>14</sup> See <http://www.bloomberg.com/news/articles/2014-01-21/eu-must-get-grip-on-energy-costs-or-risk-deindustrialization>.
- <sup>15</sup> See <https://global.handelsblatt.com/edition/396/ressort/companies-markets/article/how-to-kill-an-industry>.
- <sup>16</sup> See <http://www.ft.com/intl/cms/s/0/d91c122c-f828-11e5-96db-fc683b5e52db.html#axzz46C2PplIS>.
- <sup>17</sup> Ibid.
- <sup>18</sup> See <https://www.gov.uk/government/statistical-data-sets/international-industrial-energy-prices>. From July to December 2015, extra-large electricity consumers in the U.K. paid 9.53 pence per kilowatt-hour versus an EU median of 4.84 pence per kilowatt-hour.
- <sup>19</sup> See [http://ec.europa.eu/eurostat/statistics-explained/images/2/2c/Real\\_GDP\\_growth%2C\\_2004-14\\_%28%25\\_change\\_compared\\_with\\_the\\_previous\\_year%3B\\_average\\_2004-14%29\\_YB15.png](http://ec.europa.eu/eurostat/statistics-explained/images/2/2c/Real_GDP_growth%2C_2004-14_%28%25_change_compared_with_the_previous_year%3B_average_2004-14%29_YB15.png); and <http://www.tradingeconomics.com/spain/unemployment-rate>.