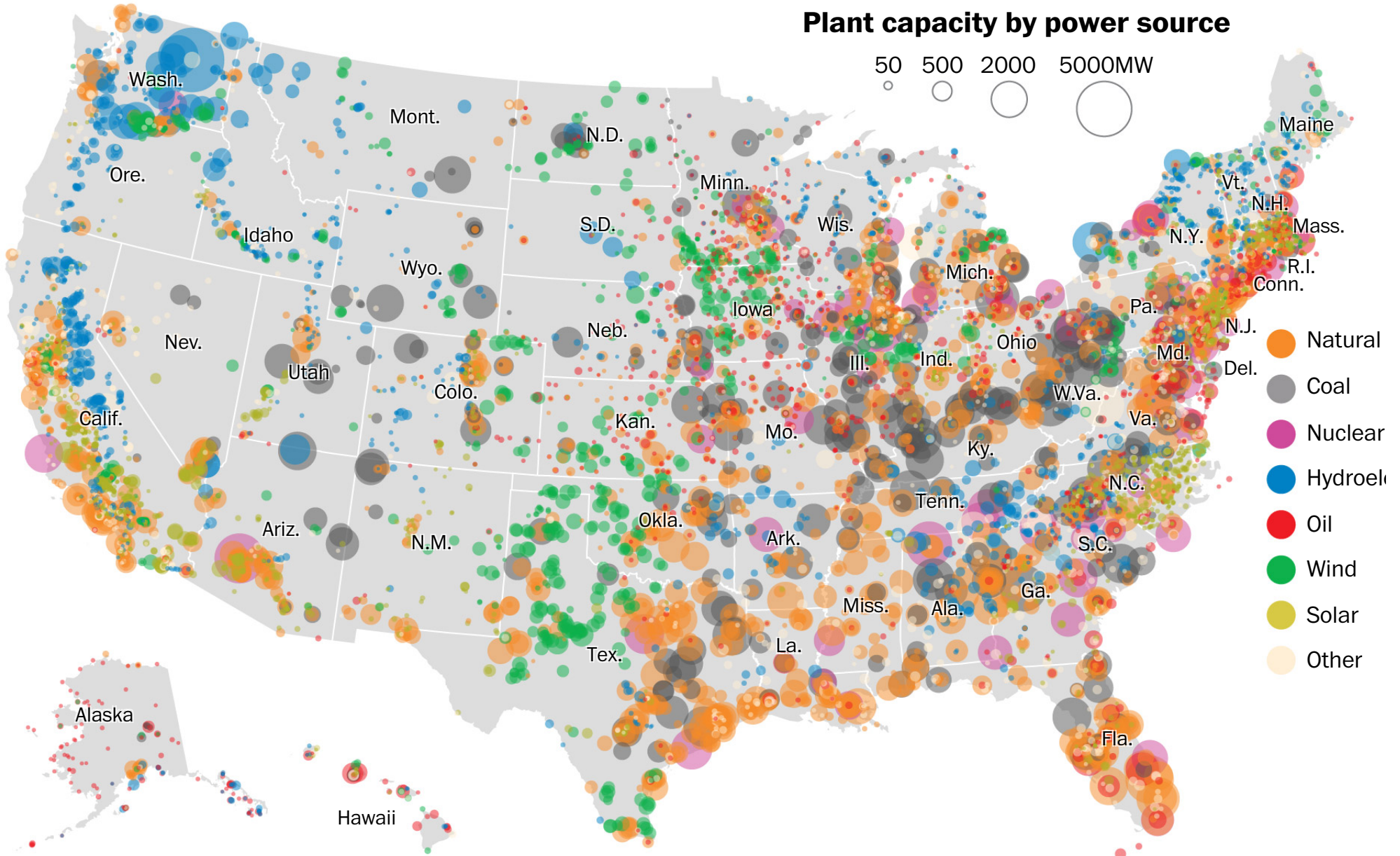


The Washington Post

National • Analysis

Mapping how the United States generates its electricity

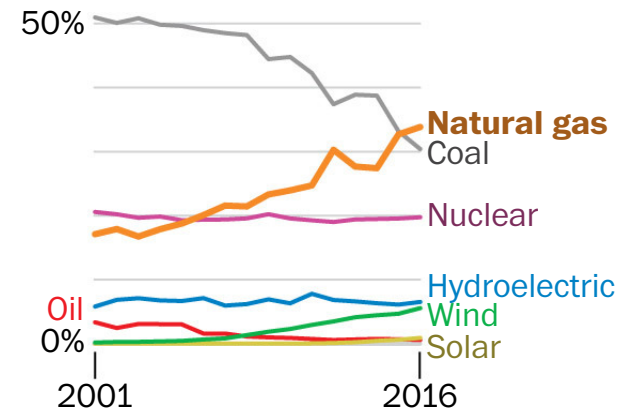


By John Muyskens, Dan Keating and Samuel Granados

Updated March 28, 2017

President Trump signed in March orders to reverse the previous administration's energy policies, a move that he framed as "an end to the war on coal" and that comes amid a drop in the fuel's use. Natural gas surpassed coal last year as the most common source for electricity generation in the United States, according to a Post analysis of preliminary data from the Energy Information Administration. Coal was responsible for a majority of electricity generation at the start of the century and was still the source for nearly half in 2008 but has fallen steadily, accounting for 30 percent last year. Natural gas powered 34 percent of the country's electricity last year, passing coal as well as nuclear.

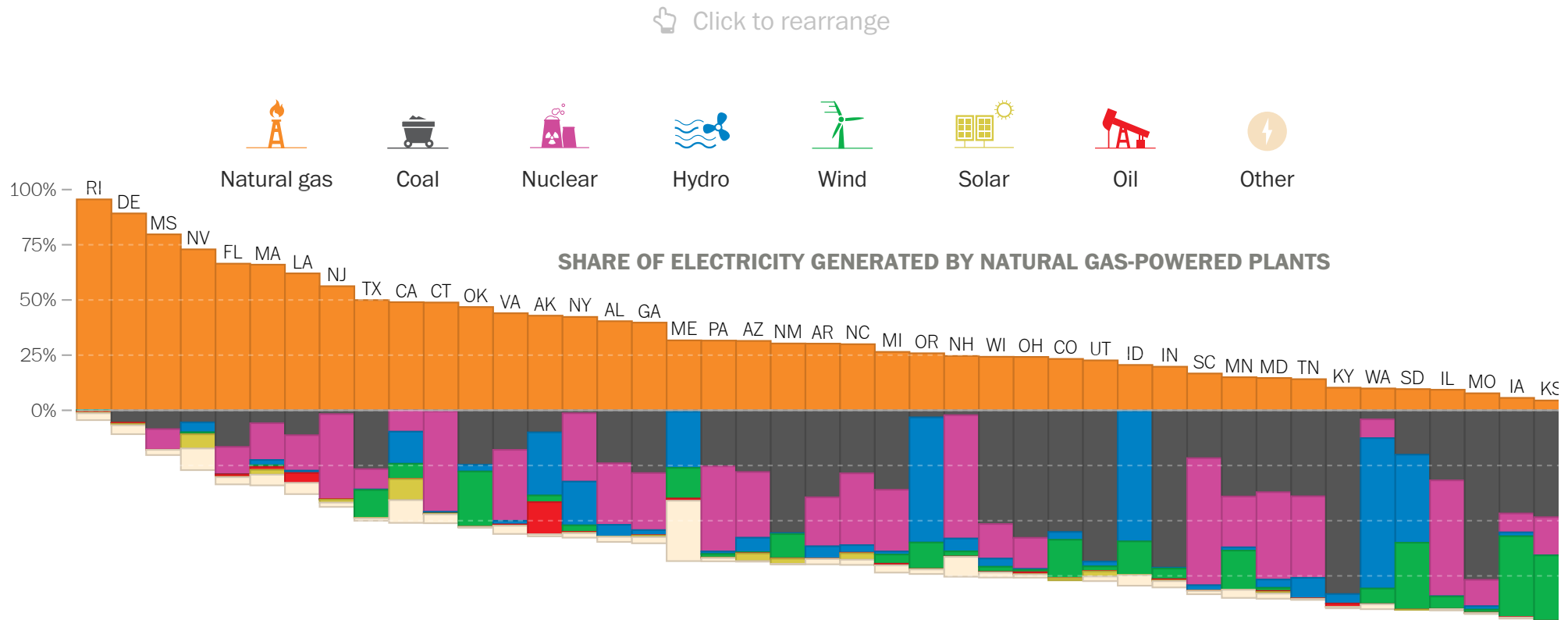
Share of U.S. electricity generation



[\[Trump moves decisively to wipe out Obama's climate-change record\]](#)

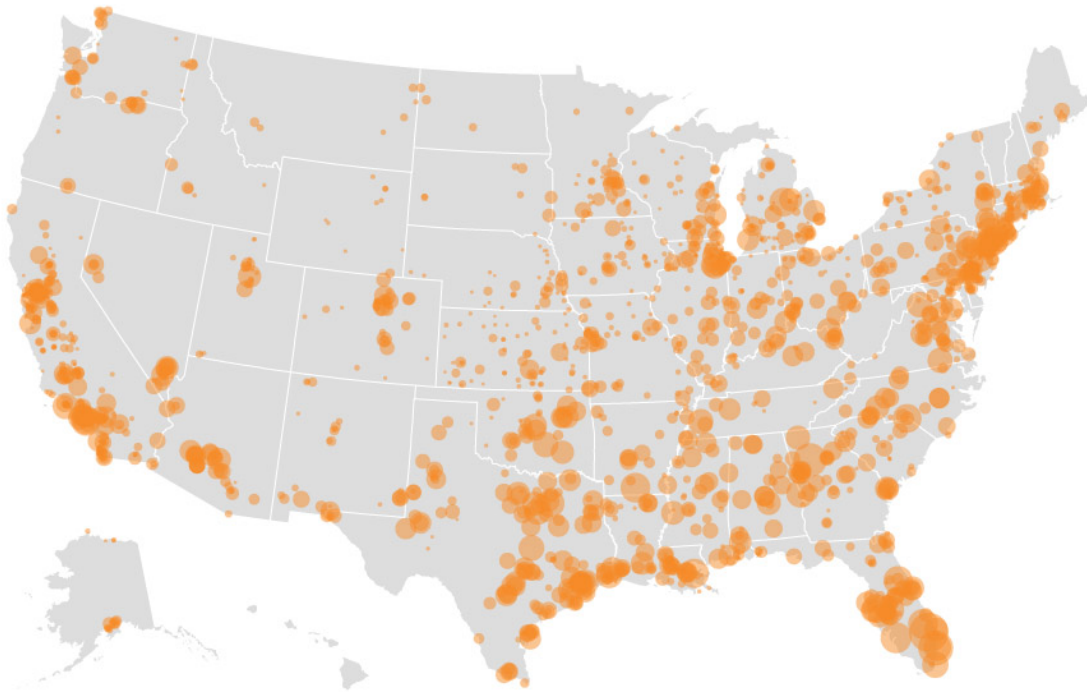
Local electric utilities take advantage of nearby resources — rivers in the

Northwest, wind in the Midwest, coal in the Appalachian region, natural gas in the North — to generate the bulk of the nation’s electricity. This shows the source of electricity generation in each state according to preliminary 2016 data.





Natural gas-powered electric plants

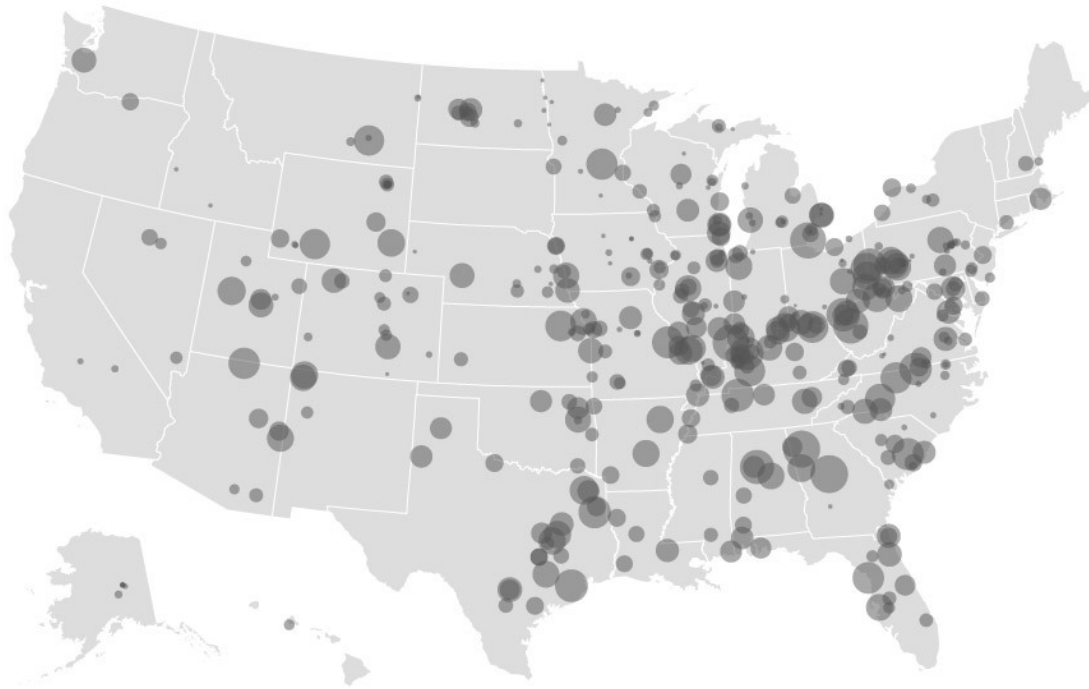


There are **1,793** natural gas-powered electricity plants in the United States. They generated **34 percent** of the nation's electricity last year.

Advances and expansion of fracking in the past decade have unlocked vast supplies of natural gas from shale deposits all over the country. The fuel is the primary source of electricity generation in 19 states and provides at least 50 percent of the electricity in nine states.



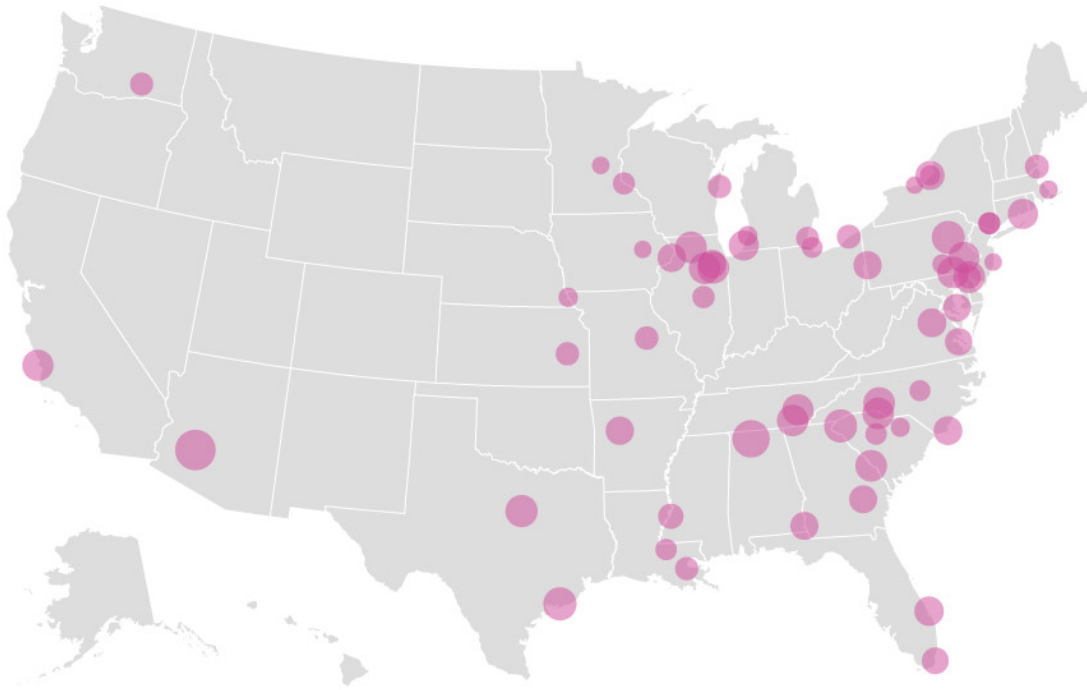
Coal



There are 400 coal-powered electric plants in the United States. They generated 30 percent of the nation's electricity last year.

Coal was the chief source of electrical generation in 19 states and the second most common source in another nine. Coal is most popular in the East, south of New York. Coal still accounted for at least 50 percent of generation in 13 states.

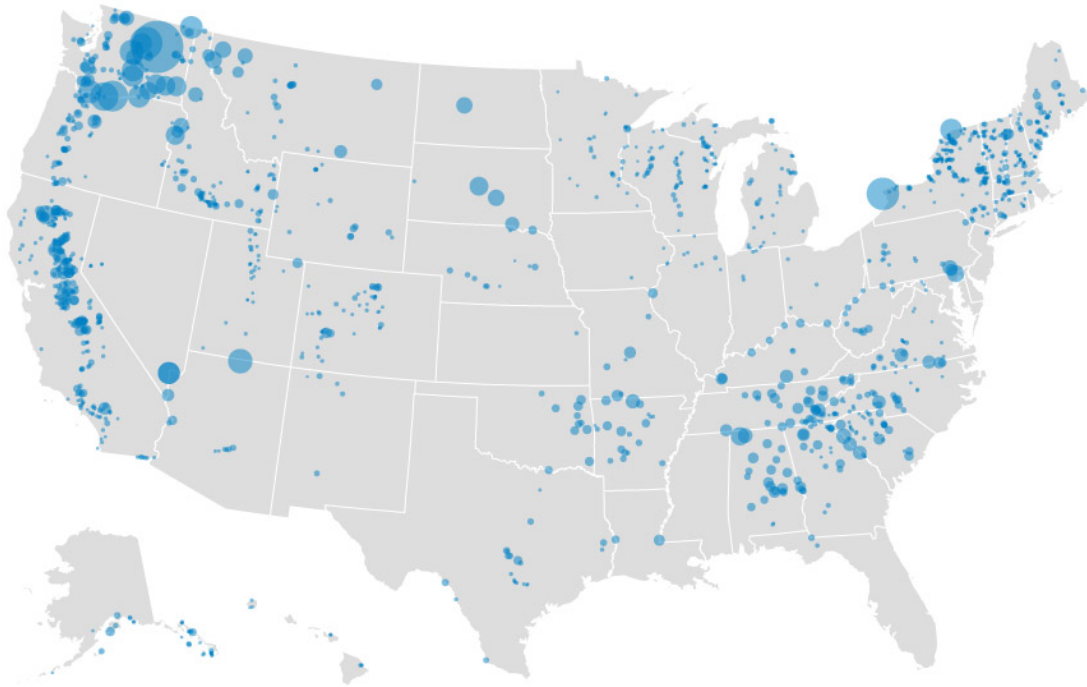




There are 61 nuclear electric plants in the United States. They generated 20 percent of the nation's electricity last year.

New nuclear plants are coming online following decades of pause after an initial push in the 1970s and 1980s driven by the first oil shock. Maryland joined South Carolina, Illinois, Pennsylvania, Connecticut and New Hampshire in getting a plurality of its power from nuclear last year. Twenty states have no nuclear electricity generation at all.

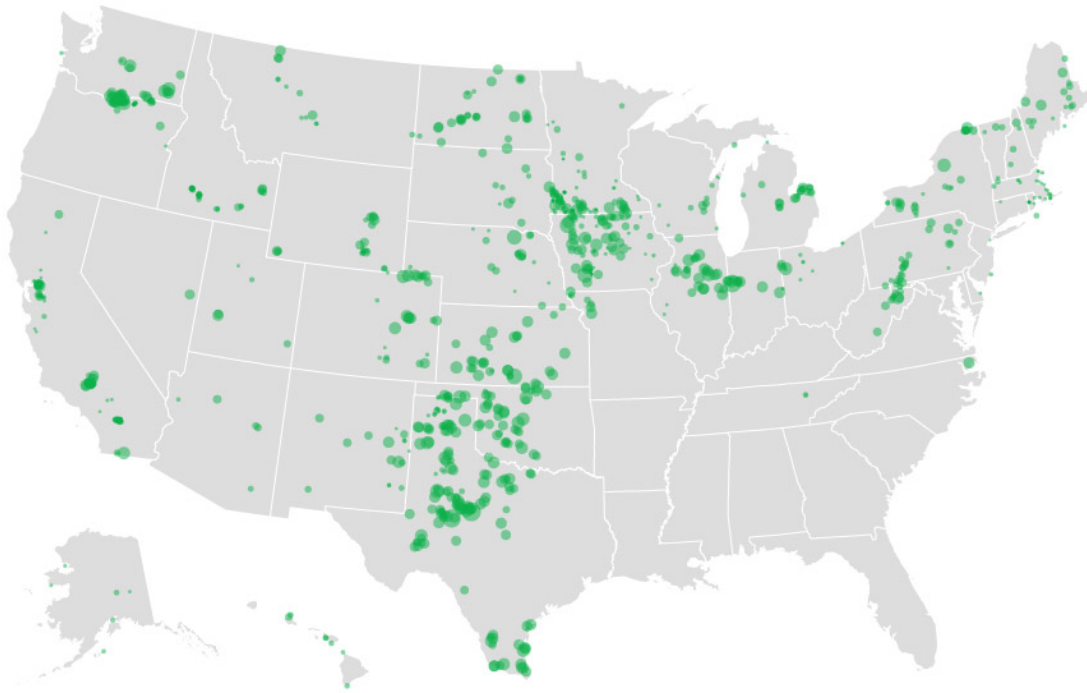




There are **1,444** hydroelectric plants in the United States. They generated **7 percent** of the nation's electricity last year.

It's a feast-or-famine source. Washington, Oregon, Vermont and Idaho lead the nation in power from hydroelectric plants, getting between 56 percent and 68 percent of their electricity from them. But Montana and South Dakota were the only other states where they were responsible for more than 5 percent of electricity. Government-run plants generate most of the power.

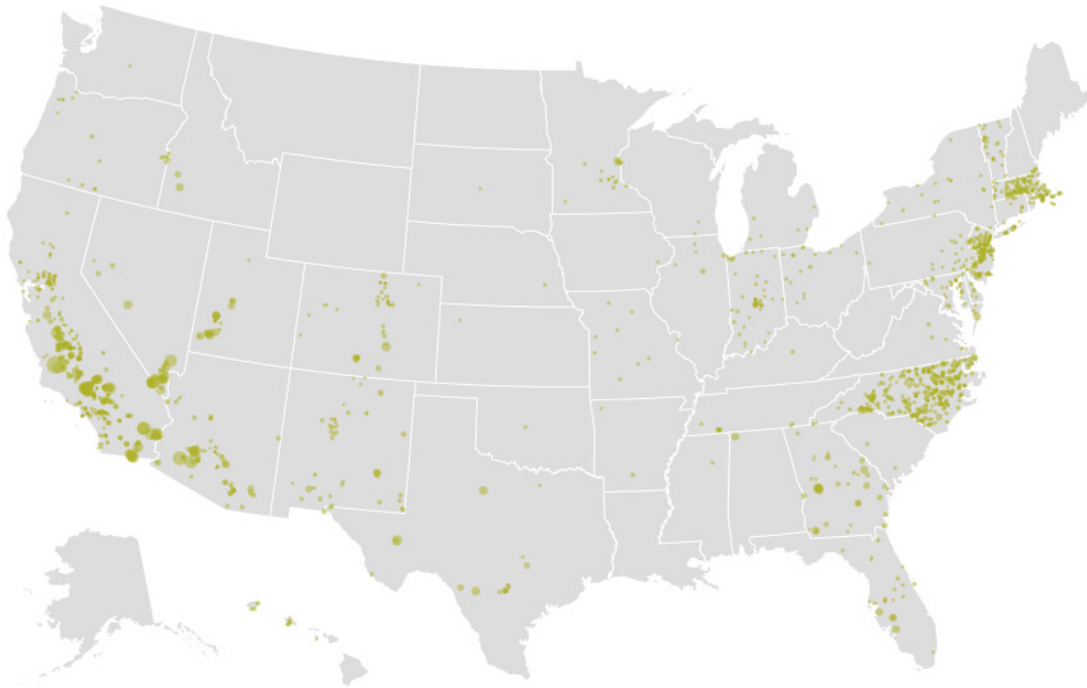




There are 999 wind-powered electric plants in the United States. They generated 6 percent of the nation's electricity last year.

Wind is the fastest-growing power source, finding a home in the Great Plains, where wind blows reliably across wide open spaces. Iowa got more than one-third of its power from wind, followed by Kansas, Oklahoma and South Dakota, which each got more than a quarter of their electricity from windmills. Wind is not the leading source of electric power anywhere but ranks second in seven states.

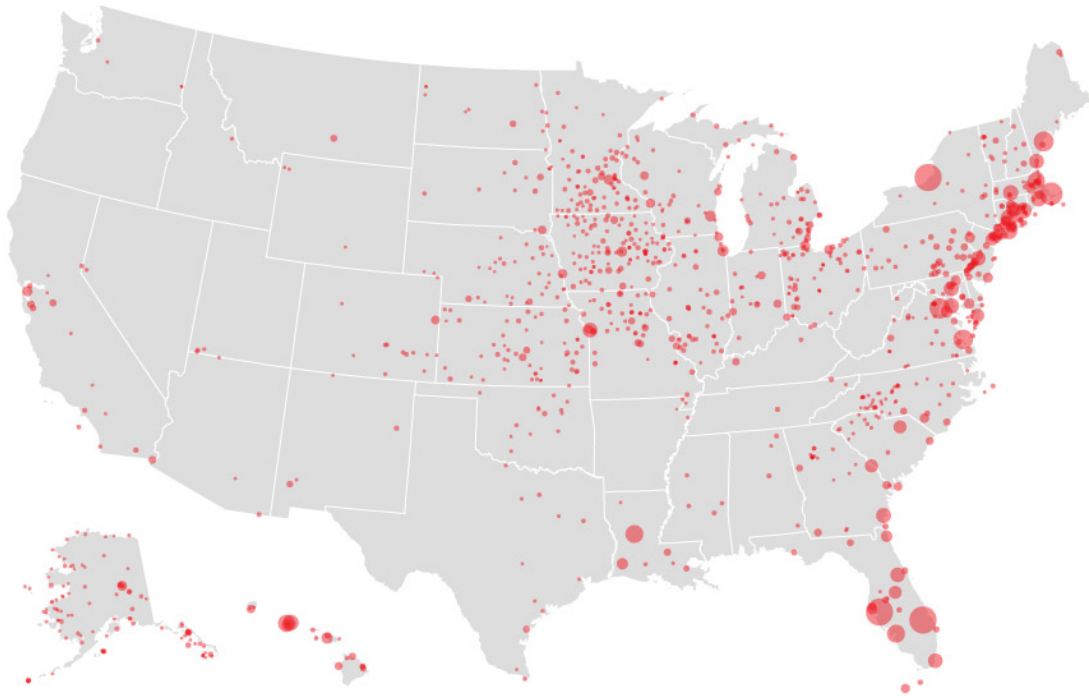




There are **1,721** solar-powered electric plants in the United States. They generated **1 percent** of the nation's electricity last year.

Solar power is predominantly used in the Southwest, where the sun shines the most. The growth of solar has created plants in all but eight states. California gets almost 10 percent of its electricity from solar, and Nevada gets more than 6 percent. Vermont and Arizona follow with 4 percent each.





There are 1,076 oil-powered electric plants in the United States. They generated just over half of 1 percent of the nation's electricity last year.

Petroleum is no longer a popular source for electricity generation. After the rise of OPEC and the oil shocks and price increases of the 1970s, utilities switched to other fuels, mostly coal. Hawaii gets two-thirds of its electricity from oil, the only state where it is the leading energy source.

Originally published July 31, 2015

Note: Other sources include petroleum coke, other gasses, biomass and geothermal.

Source: Washington Post analysis of Energy Information Administration



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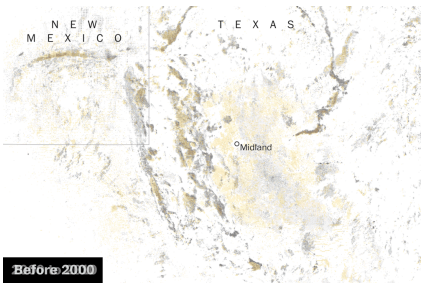
The United States of oil and gas

President Trump said he plans to double down on the oil and gas industry, lifting regulations and drilling on federal land. Here is the state of the petroleum extraction industry that the new administration will inherit.

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rpsdman

5/7/2017 10:35 AM EDT

Need a map of major regional and national power distribution lines.
Can be generating all the wind and solar needs but if you can't distributed regionally or nationally no new generation will occur. President Trump seems willing to help generate more power and upgrade the power grid.

Like Reply Share

Geology

5/1/2017 1:25 PM EDT

Great graphic. Regional differences in energy supplies are very clear. But why all the solar power in North Carolina, while none in adjacent Virginia and South Carolina? What laws or incentives are in place there?

4 · Like Reply Share

RetiredSignGuy

4/1/2017 10:20 AM EDT

Concerning the above graph concerning wind energy? What makes a wind power plant? They list 999 plants, since I have over 700 windmills (wind turbines) within 50 miles of me, (western Iowa) I know that the chart is wrong, or that one windmill is not a plant

Like Reply Share

David1982

4/17/2017 2:45 PM EDT

No, one windmill is not a (plant), nor is one solar panel or 1 nuclear reactor, or hydro turbine. Those 700 windmills likely all feed into a common bus where the electricity is transmitted to the network. Just as one solar pant has thousands of panels, a nuclear plant has 2,3, or 4 reactors (typically) and a hydro plant has anywhere from 1 to 8 turbines.

3 · Like Reply

zzaj1202

3/28/2017 9:15 AM EDT

Do not forget: the reason you don't feed your children tuna is mercury in predatory fish.

We have accepted the poisoning of a major world source of protein for the profit of big coal.

Google " mercury levels in fish".

1 · Like Reply Share

RetiredSignGuy

4/1/2017 10:01 AM EDT

Not to argue with you, but to give you a bit more info. Concerning Mercury, the push during the Bush years to reduce electric demands using coal, they forced the creation/use of the new type of light bulbs, the twisted little Florescent ones. Well, for them to work, each one has Mercury inside them, while reducing electrical usage, and since coal by above chart is 30 % of produced energy, you reduce coal, but at what cost to you (& me) and your children? If you break one of those, it's usually because a person is right there, thus it is inhaled getting that Mercury into you right away. As for disposal? My bet is that way less than one percent are actually turned in to be disposed correctly, instead, they are thrown away, to be crushed in land fill so the Mercury can find a way into your water supply.

So what's worst? As neither one is Mercury free.

1 · Like Reply

Geology

5/1/2017 1:22 PM EDT

Even if not properly recycled, mercury in CFLs will not contaminate our water supplies if the landfill is properly constructed. They put the waste in the ground, sandwiched between impermeable clay layers and man-made fabrics. They are sited away from areas of groundwater recharge, on impermeable soils, and above danger of surface flooding. They are designed to prevent contamination from spreading. In contrast, a coal-burning power plant, without any technology to capture the mercury emissions, is essentially a

perfect pollution distribution system. They put the mercury in the air where it can spread easily downwind. Rain delivers the mercury everywhere on the land surface, right into the biosphere.

1 · Like

Brian185

5/7/2017 11:17 AM EDT

Sorry, CFLs provide minimal contribution to mercury spread - and CFLs were short lived and are being replaced with LEDs. No, the major source of mercury contribution has been - and is - coal.

Like

Liberal southerner

3/28/2017 9:12 AM EDT

Glad the GOP is supporting "the buggy whip and whale oil industries" of the 21st century!

3 · Like Reply Share

zzaj1202

3/28/2017 9:11 AM EDT

If our government were not corrupted by oil/coal lobbyists we would be on the road to total renewable energy sources.

That would be the intelligent path forward.

3 · Like Reply Share

Voice Crying in Wilderness

3/28/2017 8:36 AM EDT

The most reliable source of power that this planet can tap is the moon. In this country, how much energy is produced by the tides?

Like Reply Share

PatriotD32

3/24/2017 2:24 PM EDT

Good read. Also, great graphics in this article!

3 · Like Reply Share

W. Abbott

2/27/2017 1:54 PM EST

5% wind? Not scheduled electricity. What good is electricity that cannot be dispatched? Might as well included lightning strikes to the grid also.

Like Reply Share

Dave80

2/28/2017 4:13 PM EST

Two uses - first, it's part of an integrated system, adding power to the grid when it is generating, lightening the load that has to be borne by scheduled, higher-pollution sources. Second, as storage technology continues to improve, off-grid uses of unscheduled power sources become more efficient. In-home batteries are reaching the tipping point now to make personal solar roofs financially viable.

2 · Like Reply

pdq4WP

3/28/2017 12:12 AM EDT [Edited]

Wind is usually blowing somewhere. An efficient grid will spread the energy derived therefrom around.

1 · Like Reply

rpsdman

5/7/2017 10:27 AM EDT [Edited]

An efficient grid requires new lines, regional and nationally be it pipelines or electrical high tension wires etc. Lots of groups are against new lines although President Trump is probably for it.

Like

John Dykeman

2/16/2017 9:32 PM EST

Remember that USA and most of Canada share pipelines and electrical interconnected grid. When American power consumption spikes, Canada is ready to meter in some extra electricity (for a price).

Building a wall on this border will cause economic hardship in US.

Like Reply Share

27Amendments

2/16/2017 3:58 AM EST

Hawaii is a joke. It has all the renewable sources of energy - but burns Arab oil instead

Like Reply Share

FreeInMD

3/28/2017 8:40 AM EDT

Stupid comment. Hawaii's power generation plants were likely built before wind and solar were technically and economically viable. Hawaii's not big enough to have bodies of water to support hydro. No coal in Hawaii. Natural gas comes via pipelines - a long way to Hawaii. Which makes oil delivered by tankers the most practical when these plants were built. Hawaii does have some wind, and solar is also extremely popular in Hawaii. However this article only includes power generating facilities and not the large number of homes in Hawaii with private solar power generation.

6 · Like Reply

Michael Schwalm

2/15/2017 1:26 PM EST

If one adds in the health costs, environmental degradation, military costs, and the eventual costs associated with climate change, fossil fuel is not competitive with wind and solar- not even close. What fossil fuel has going for it is a massive lobby stalling change.

4 · Like Reply Share

Jim, Arlington

12/5/2016 9:07 AM EST

What is not discussed in this thread re wind is improving technologies that are reducing costs of generating electricity from wind. Examples: 1.) Improved turbine blade design and new alloys that allow larger turbine blades and therefore more power from a single tower. 2.) Stronger magnets that incorporate rare earth elements. This reduces weight of turbines by eliminating gear boxes. No gear boxes = lower manufacturing costs & lighter turbines. Continued research in all methods of power generation is likely to reduce costs in other power production methods in the future. Although mature methods of electricity generation are likely to see the least reduction in cost (e.g. coal).

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observador

4/15/2016 1:52 PM EDT

Where energy is generated is not necessarily where it is used. The map is misleading that way. Does this include rooftop solar? Probably not.

2 · Like Reply Share

mosborn397

4/15/2016 2:00 PM EDT

It says power plants. I don't see how it could include residential solar. Hard to say what the threshold is, though. The school down the street has solar panels shading the parking lots - I'd guess at least 50 megawatts. It is pretty common in the Southwest and California, and surely adds up to a lot more than this chart indicates.

Like Reply

jlo999

8/5/2016 2:40 PM EDT

True that power is often not used right where it is generated. In general, power plants away from large population densities will put power on the grid that need to cover more distance to be used (which is the case for a lot of wind farms), and larger power plants generate more power than the nearest population can possibly consume (which is the case for many nuclear, coal, and large hydro plants). Solar power is probably the one that gets used the nearest to where it is being generated - unless it is a giant solar plant in the middle of the desert. But rooftop solar and small distributed generation power systems are typically used by the owner on the spot. Most graphs and statistics showing solar power do not count the rooftop systems, and I'm not sure what the cutoff is for this Washington Post article. But as far as prices go, wind is now the cheapest source of new power generation, which is why we'll continue to see wind power being built in windy areas far from cities, such as the great plains. Don't let wpid444 tell you otherwise - his comments are obviously anti-renewable and not factual. If he was right, we wouldn't see wind power growing faster on a MW basis than any other source of power generation in the US. Yes, wind is subsidized, as are all power generation technologies, but the tax credits associated with wind power are being phased out over the next five years - even though the fossil fuel industry will still continue to be subsidized by taxpayers. When wind is no longer subsidized and is still beating subsidized coal and fossil fuels on price (which it will based on the trends), it will become very difficult for the

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MN USA

4/15/2016 12:45 PM EDT

Vermont leads the country in clean energy. Congratulations to them. The rest of us have a lot of room for improvement.

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ohio_anarcho-capitalist

4/15/2016 2:45 PM EDT

yeah all 675,000 of them...LOL....

3 · Like Reply

News User

12/2/2016 6:53 AM EST

We have 500 in our county and have no complaints as long as they contribute their fair share to the tax base.

Like

OscDan

12/2/2016 5:24 PM EST

Due to conservation programs, California ranks 49th in the country for energy consumption per capita. "In 2014, California's per capita energy consumption ranked 49th in the nation; the state's low use of energy was due in part to its mild climate and its energy efficiency programs." U.S

Energy Information Administration.

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