Rating the States on Their Risk of Natural Gas Overreliance

Analysis Document

www.ucsusa.org/naturalgasoverreliance

Union of Concerned Scientists

Natural gas has a role to play in our transition to a cleaner energy future, but too much natural gas can be a problem. Electricity consumers will ultimately have to bear the costs when a state's bets on natural gas fail to pay off, and UCS analysis shows that two-thirds of U.S. states may be putting their consumers at financial risk because of their overreliance on natural gas. The good news is that states have lots of ways to reduce their reliance on natural gas and improve the odds for consumers.

IS YOUR STATE BETTING TOO MUCH ON NATURAL GAS FOR ITS ELECTRICITY?

The fuels your state uses to generate electricity can make a big difference in your electric bill, and how much your future costs may rise will depend a lot on where you live. Why? The electricity sector has already begun shifting away from dirty coal-fired power plants to cleaner-burning natural gas, plus renewable energy like wind and solar power. This shift will accelerate now that utilities must lower their heat-trapping carbon emissions almost a third by 2030 under the new federal Clean Power Plan.

Natural gas has a potential role to play in lowering electricity costs, reducing carbon pollution, and helping us transition to more renewable energy. But as you'll see, too much natural gas—itself a fossil fuel—can be a problem, including for consumers. UCS analysis shows that two-thirds of U.S. states may be putting their electricity consumers at financial risk because of an overreliance on natural gas.

OVERRELIANCE ON NATURAL GAS FOR ELECTRICITY EXPOSES CONSUMERS TO A VARIETY OF FINANCIAL RISKS OVER TIME

Natural gas prices are volatile because of factors like its use in other sectors (such as industry) and supply shortages during periods of extreme weather. Increasing reliance on natural gas to generate electricity means **price spikes** will hit consumers that much harder.

As the damage from climate change increases, the option of putting a price on carbon emissions becomes more attractive and likely. Once this happens, utilities that fail to cut emissions because of their overreliance on natural gas will saddle their customers with higher electricity rates to account for **the cost of carbon pollution**.

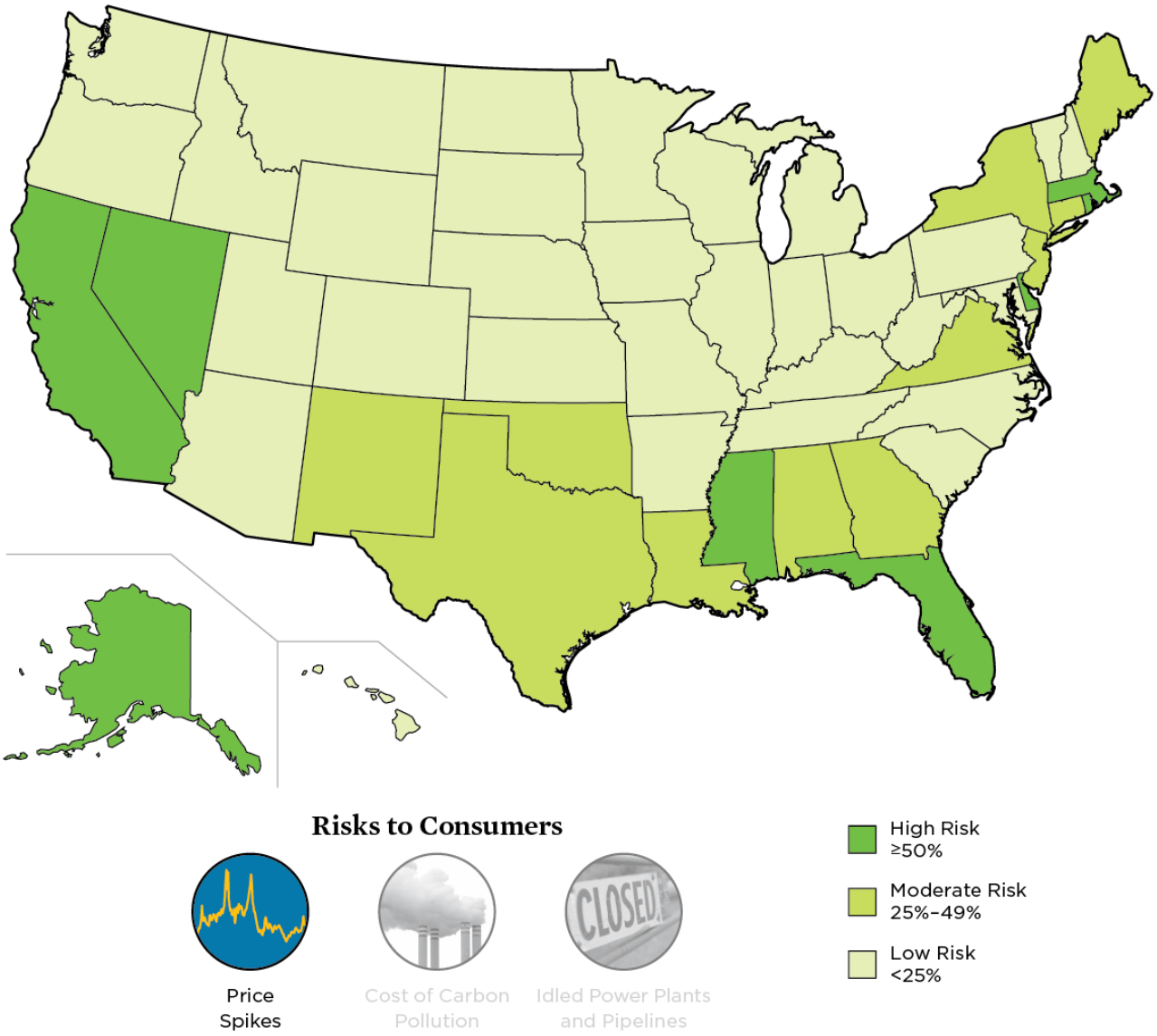
Natural gas power plants and the interstate pipelines that supply them can be long-lived and expensive, requiring decades-long financial commitments. Carbon constraints that make natural gas unattractive for utilities and investors could result in billions of dollars' worth of **underused, idled, or even abandoned plants and pipelines**.

Utilities are gambling on natural gas, but it's their customers who will ultimately have to pay for bad bets.

CONSUMERS IN SOME STATES FACE MUCH HIGHER RISKS FROM NATURAL GAS

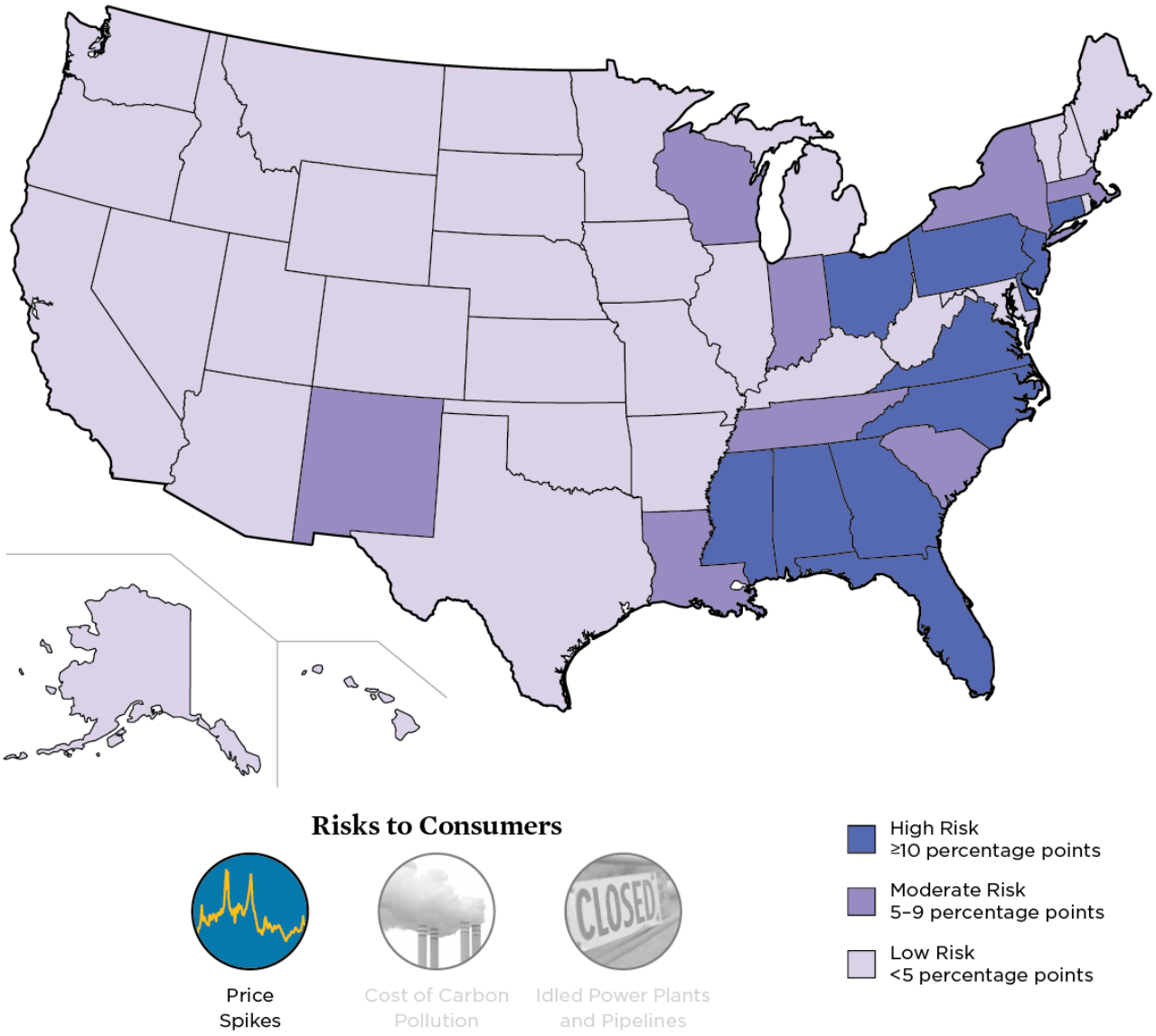
These risks depend on the decisions power providers, regulators, and elected officials in each state have made, are making, and will make about the way electricity is generated. So, while some states that invested heavily in natural gas in the past are now moving toward cleaner, renewable energy, other states are "doubling down" by increasing their investments in natural gas plants and pipelines. UCS looked at states' risks of natural gas overreliance in five categories, and rated each on a scale of Low/Moderate/High. These ratings assess where states are now, where they've come from, and where they're headed.

FIGURE 1. **Natural Gas Generation as a Share of In-State Electricity Production (2014)**



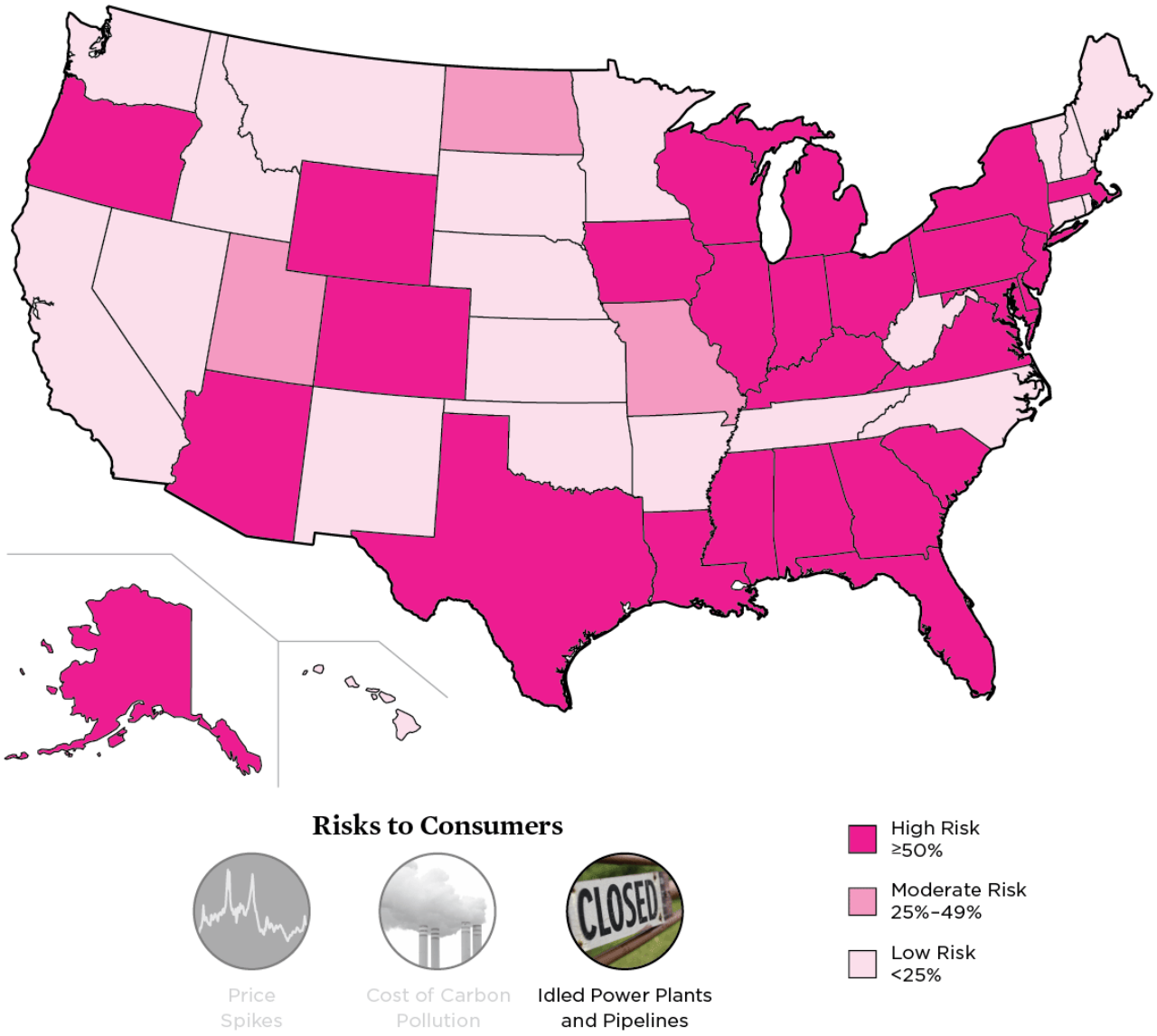
Many U.S. states already depend heavily on natural gas for their electricity. Eight states use natural gas for at least 50 percent of their in-state electricity generation, and another 11 states use natural gas for more than 25 percent. Rhode Island tops the list with 95 percent of its in-state electricity generation coming from natural gas, followed by Delaware (83 percent), Nevada (63 percent), and Florida (62 percent).

FIGURE 2. **Increase in Percent of In-State Electricity Generation Fueled by Natural Gas (2008–2014)**



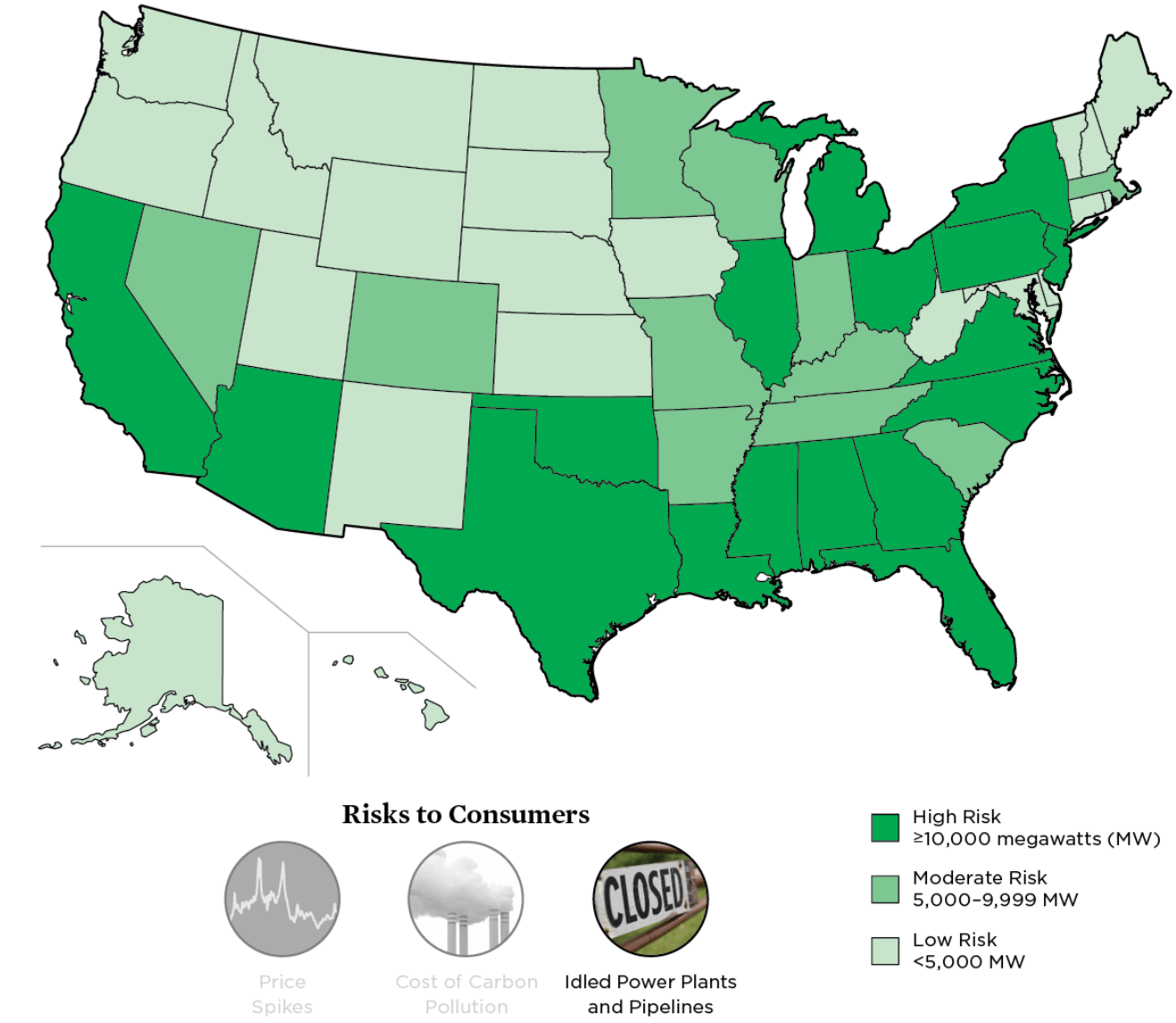
Many states have rapidly increased their reliance on natural gas for electricity in recent years. These shifts in electricity mix suggest that decision makers in certain states are willing to place bigger bets on natural gas—despite the risks. Eleven states have increased their share of electricity generated using natural gas by at least 10 percentage points in recent years, with Delaware (63 percentage points) and Georgia (23 points) having the biggest increases. Along with Georgia, much of the Southeast is at higher risk (Alabama, Florida, Mississippi, North Carolina), as are Ohio and several Mid-Atlantic/Northeast states in addition to Delaware (Connecticut, New Jersey, Pennsylvania, Virginia).

FIGURE 3. **Natural Gas Capacity as a Share of Power Plants Being Built (2014–2017)**



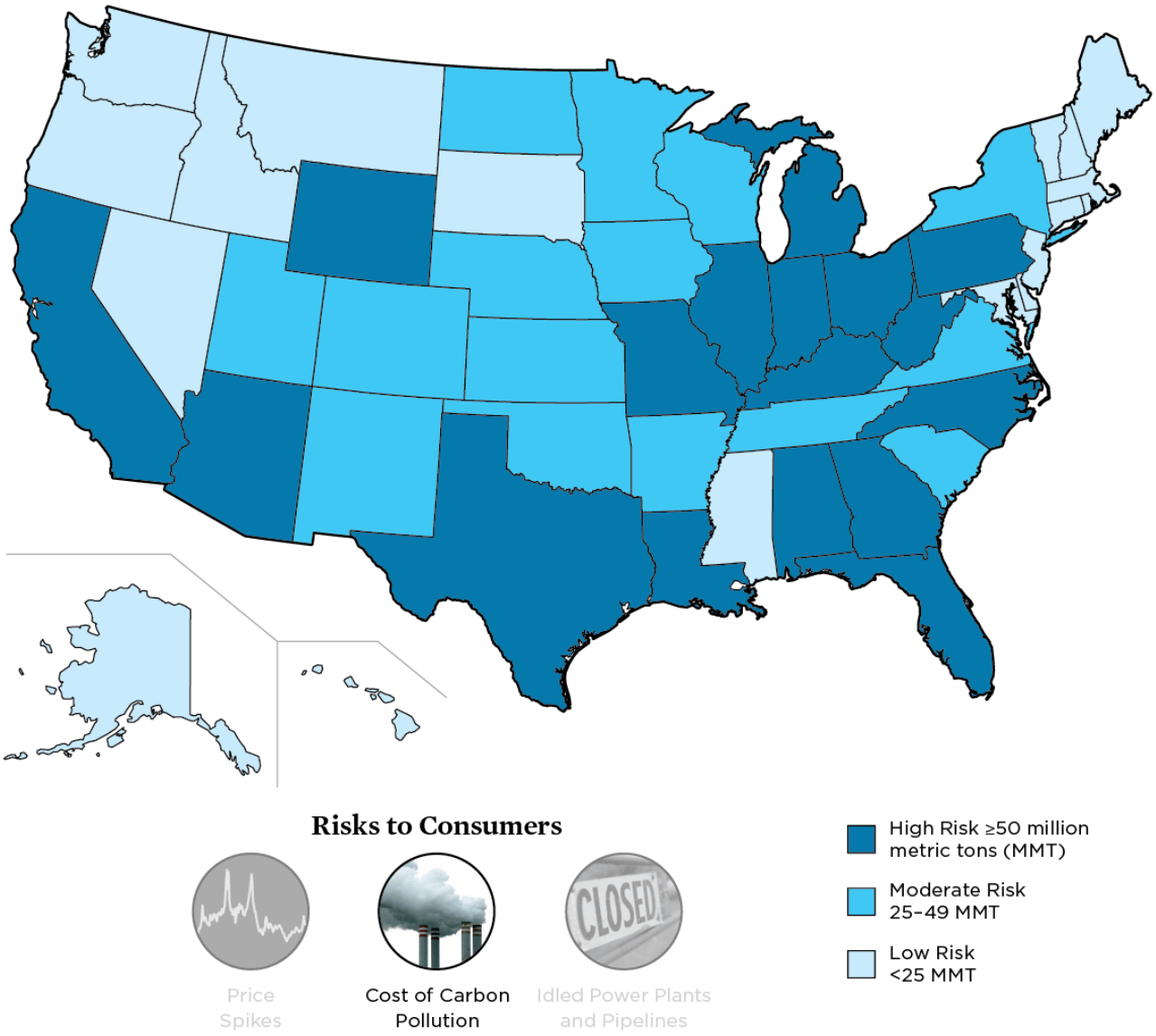
More than half the states are building more generating capacity based on natural gas than any other type of power. In 26 states more than half of the power plants being built in the near term will rely on natural gas for fuel. The biggest gamblers include Delaware, Louisiana, and South Carolina (100 percent of plants being built), followed by Alabama, Mississippi, New Jersey, Pennsylvania, South Carolina, Virginia, and Wisconsin (more than 90 percent). Many states will use renewable energy for the rest of their new capacity, which will help ease consumer risks, but many are continuing to rely on coal, which is even more carbon-intensive than natural gas.

FIGURE 4. **Total Projected Natural Gas Capacity in 2017**



Existing power plants plus new ones can add up to too much natural gas. The states that will have the largest electric capacity fueled by natural gas in 2017 are Texas (77,000 megawatts), California (46,000 MW), and Florida (39,000 MW). In some states, natural gas capacity is a function of the state's size (that is, some large states generate a lot of electricity from multiple power sources). But natural gas can still dominate overall power plant capacity: for example, Louisiana (where it accounts for 72 percent), Florida (61 percent), and Texas (60 percent) have placed big bets on natural gas. Smaller states may be putting their consumers at risk as well: natural gas comprises 96 percent of Rhode Island's electric capacity and 69 percent of Delaware's.

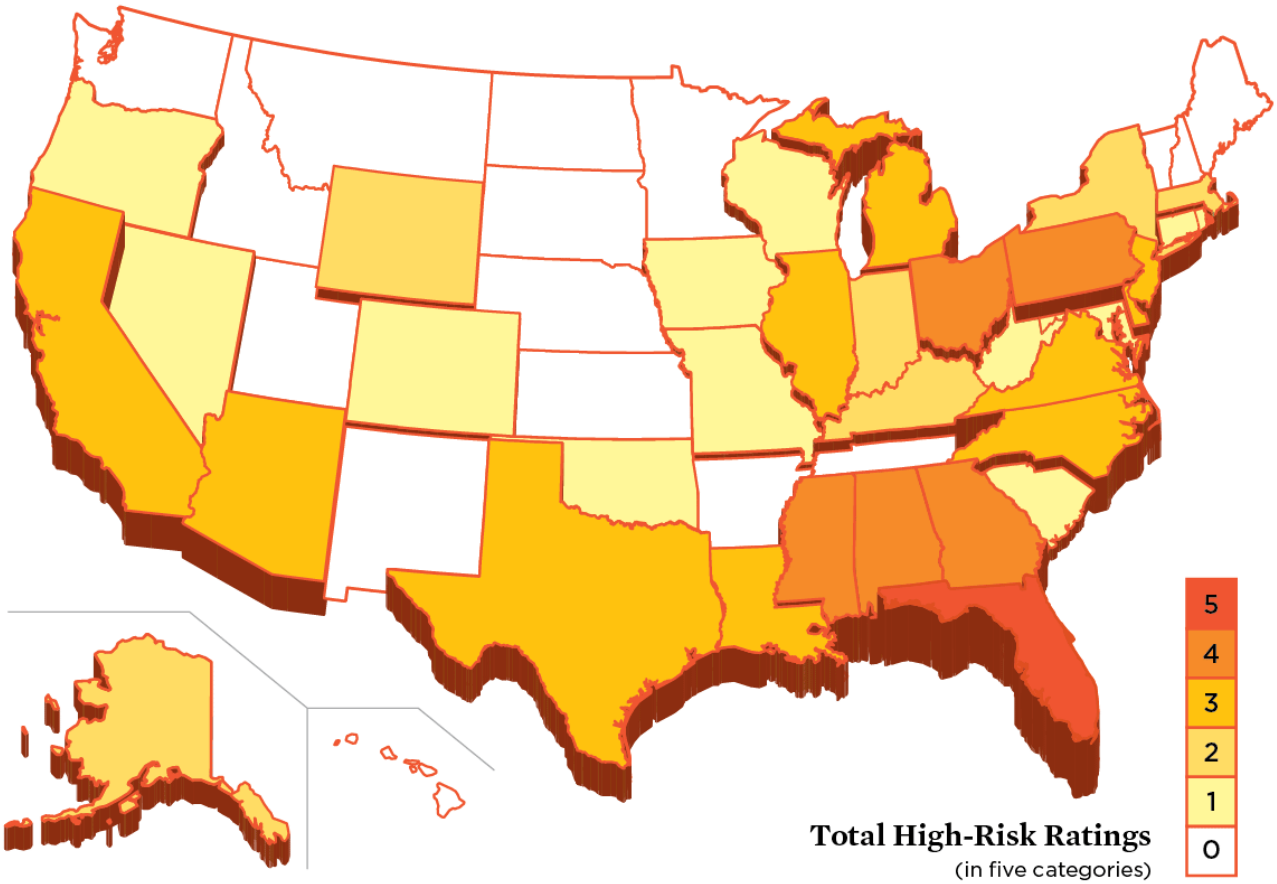
FIGURE 5. **Power Sector Carbon Dioxide Emissions (2013)**



As states move to cut their global warming pollution, reliance on natural gas could become much more of a liability. Seventeen states each produce more than 50 million metric tons of carbon dioxide (CO_2) a year—more than the power plant emissions of four-fifths of the world's countries. And 15 other states each emit more than 25 million metric tons of CO_2 from power plants annually. Some states with low per capita emissions, like California, have "High" risk ratings because they have large economies. Other states with relatively small economies, like Wyoming, have "High" risk ratings due to high per-capita emissions—in Wyoming's case, more than 50 times as high as California's.

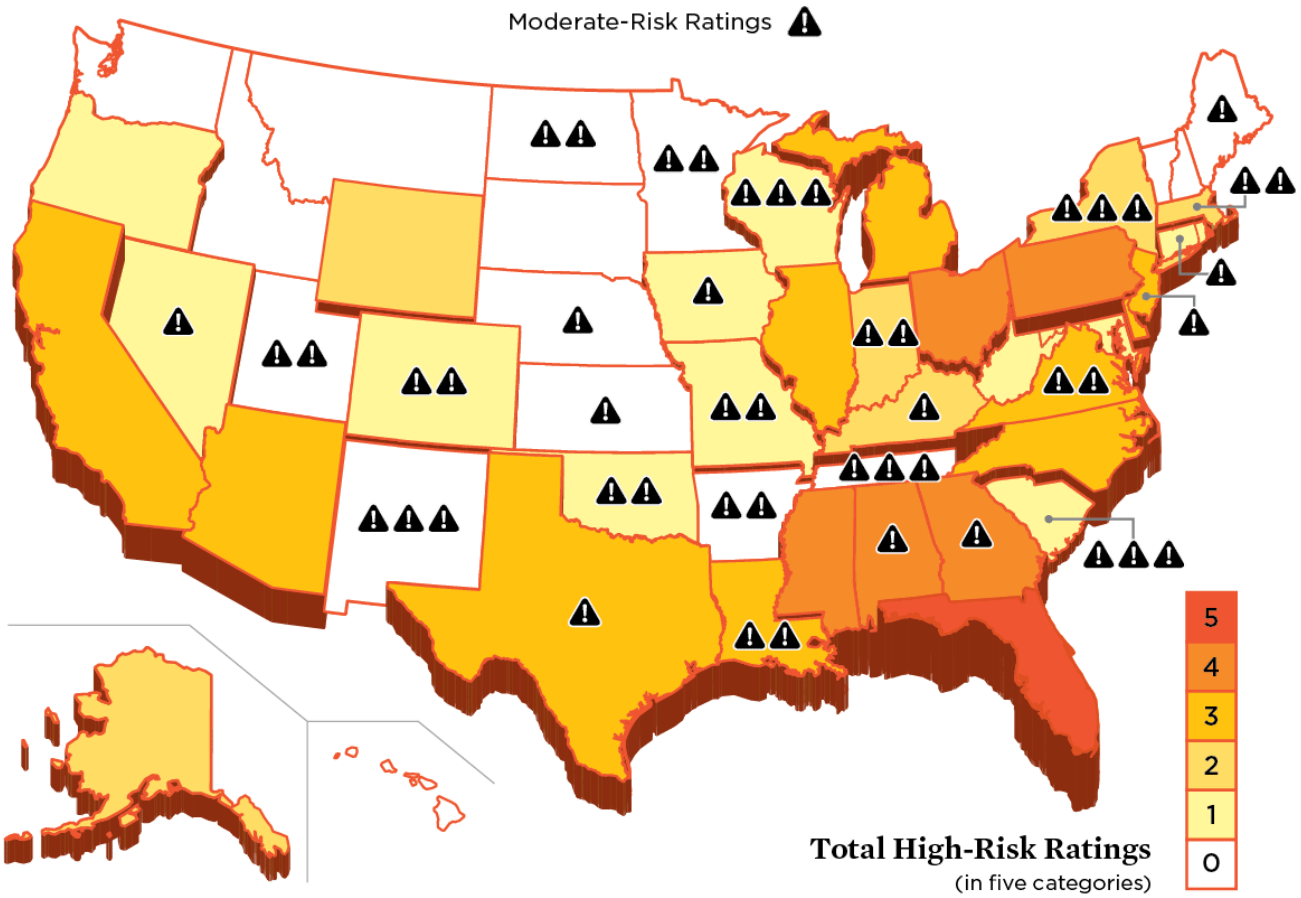
Under the federal Clean Power Plan, states will be making important decisions about the role natural gas should play in reducing these emissions (for example, by replacing carbon-intensive coal-fired power plants). The smart states will see big commitments to natural gas as a shortsighted solution that increases risks to consumers in the near and long term.

FIGURE 6. **States at Highest Risk of Natural Gas Overreliance**

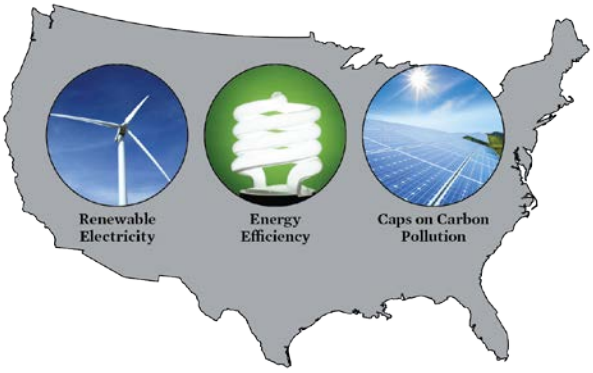


Two-thirds of U.S. states are gambling too much of their electricity consumers' money on natural gas. Because utilities pass the costs of high fuel prices, carbon pollution, and idled plants on to their customers, the risks associated with natural gas overreliance can really add up for consumers. Thirty-four states have a "High" risk rating in at least one of the five categories UCS examined, and 16 states have a "High" risk rating in three or more categories—a clear indication of a problem. One state rated "High" in all five categories: Florida.

FIGURE 7. **States at Highest Risk of Natural Gas Overreliance, With Moderate-Risk Ratings Included**



States that don't have a high risk of overreliance in every category aren't off the hook. States with multiple "Moderate" risk ratings could easily slip into a higher risk of overreliance if they make poor choices about their energy futures. Alabama and Georgia, two of the states with four "High" risk ratings, both have a "Moderate" rating in the remaining category. Louisiana, New Jersey, Texas, and Virginia have a "High" risk rating in three categories and one or more "Moderate" ratings. New Mexico and Tennessee have no "High" risk ratings but three "Moderate" ratings.



ACTION IS NEEDED NOW TO PREVENT CONSUMERS FROM HAVING TO PAY FOR THEIR STATE'S RISKY BETS ON NATURAL GAS

Smart state policies would ensure that natural gas plays a supporting role in reducing global warming pollution instead of a central one. Prioritizing renewable energy and energy efficiency would meet electricity needs while protecting consumers from the risks associated with natural gas.

- **Renewable electricity standards** in states such as California and Colorado have succeeded in driving the development of wind, solar, and other clean power technologies—while simultaneously reducing these states' reliance on fossil fuels including natural gas.
- Energy efficiency policies including **energy efficiency resource standards** in states such as Massachusetts, Minnesota, and Oregon help homes and businesses do more with less electricity, lowering both costs and risks.
- Other policies, including the **caps on carbon pollution** already in place in the U.S. Northeast, Mid-Atlantic, and California, encourage cleaner energy choices by addressing global warming emissions directly.

Natural gas power plants and pipelines built at an appropriate scale and with sufficient flexibility can complement clean energy development rather than hamper it.

STATES HAVE A GREAT OPPORTUNITY TO MAKE THE SWITCH TO CLEAN ENERGY *NOW*—AND AVOID INVESTMENTS IN NATURAL GAS THAT WON'T PAY OFF FOR CONSUMERS

As states address climate change through the Clean Power Plan and other means, they can protect their consumers by choosing the energy options that will prove most cost-effective over time. The risky bet—going "all in" on natural gas to meet near-term carbon reduction goals—increases consumers' odds of having to pay for price spikes, carbon pollution, and idled plants down the road.

The smart play—expanding renewable energy and energy efficiency—gives consumers better odds and leads to deeper carbon reductions. **Will your state play its cards right?**

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