INSTITUTE FOR ENERGY RESEARCH

Energy Regulation in the States: A Wake-up Call

ENERGY IS THE LIFEBLOOD OF THE ECONOMY

Abundant and affordable energy makes our lives better in innumerable ways. It heats our homes, lights our night, fuels our freedom to move, and brings us together by powering our communication systems. Affordable energy allows us to spend more of our money on our other needs, such as families, friends, entertainment, and investment. It also helps keep jobs in America by lowering the costs of producing and exporting goods and services, making us competitive in a global economy.

But affordable energy is under assault. Many politicians and ideological special-interest groups are working to place onerous restrictions on the energy we use and on how we use it. The energy resources that supply 85 percent of our energy needs—coal, oil, and natural gas—are the most affordable and therefore the targets of this assault. The regulations are intended to make energy from these sources harder to produce and more expensive to use. But these policies not only decrease the availability and increase the price of natural gas, coal, and oil, they also force the American people to use energy sources that would otherwise be too expensive and unreliable to exist commercially.

We have already seen the results of some of these regulations. For example, the national renewable fuel mandate helped create a rise in the price of both fuel *and* food by taking food (especially corn) and turning it into a more expensive, mandated fuel (ethanol).

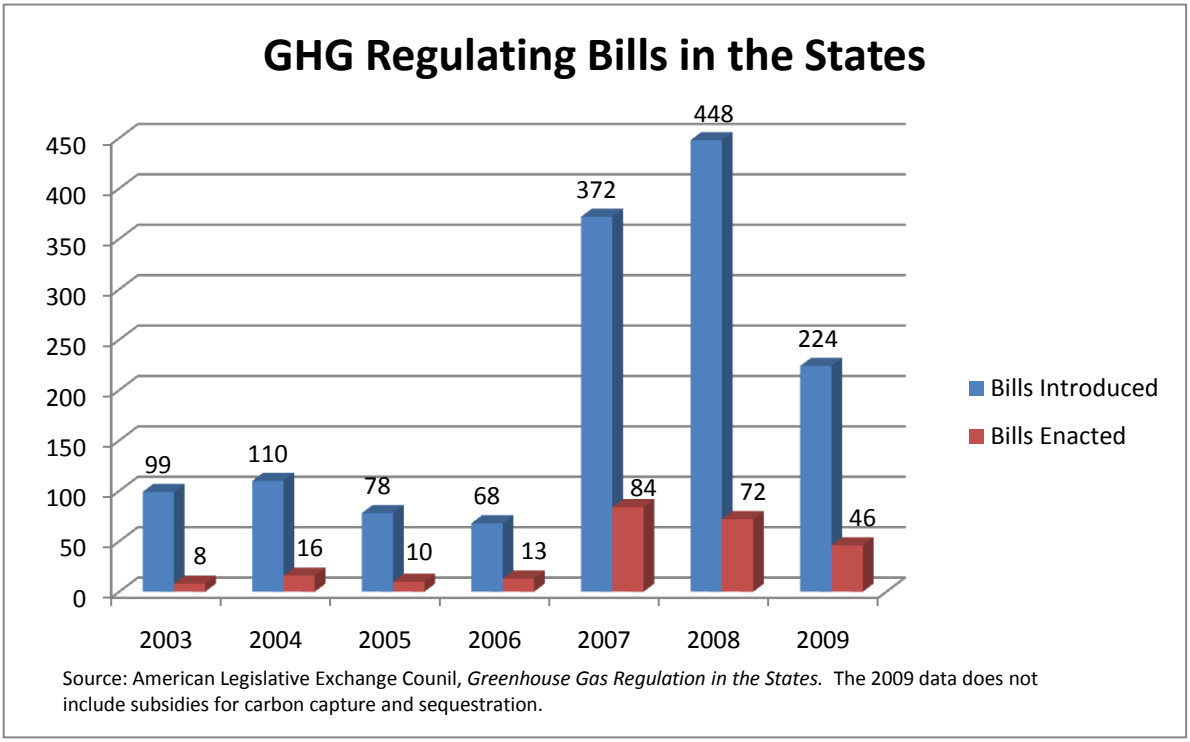
Other regulations will likely lead to energy price increases in the future. Electricity prices in states with binding renewable portfolio standards are nearly 40 percent higher than states that do not have similar mandates. But these mandates are relatively new and it is not clear how much of this price differential is a result of the regulations. Also, both Congress and some state legislatures have proposed low-carbon fuel standards that would increase the costs of gasoline and would disadvantage America's vast deposits of oil shale and Canada's oil sands in favor of imported Middle Eastern crude.

Perhaps surprisingly, some of the most contentious of these ongoing battles are happening right now in state capitals across the country. This report analyzes many such policies and

explains how state governments are increasing the price of energy and the price of *using* energy through additional regulations.

TRENDS IN STATE-LEVEL GREENHOUSE GAS REGULATION

The most obvious trend at the state level is the dramatic rise in the number of bills that directly or indirectly regulate greenhouse gas emissions. The following graph, created from data collected by the American Legislative Exchange Council, shows the extraordinary increase in the filing of such bills during the past few years. In particular, the number of introduced bills that would have directly or indirectly regulated greenhouse gases more than quintupled from 2006 to 2007 and the number that were enacted more than sextupled.[1]



Source: American Legislative Exchange Counil, *Greenhouse Gas Regulation in the States.* The 2009 data does not include subsidies for carbon capture and sequestration.

The dramatic increase of 2007 is attributable to a few causes, starting with the 2006 election. As the result of a general dissatisfaction with President Bush and the Republican Congress, that election swept into office many state and national legislators who were more disposed toward more aggressive government regulation—especially as it related to greenhouse gases. This was the case even though no one openly campaigned to regulate greenhouse gases and thereby make energy more expensive.

[1] American Legislative Exchange Council, *Greenhouse Gas Regulation in the States* (2009).

In addition to the increase in pro-regulation politicians, another factor driving legislation was Al Gore's movie, *An Inconvenient Truth*. The film was released in 2006 and became the third-highest-grossing documentary at that time.[2] The movie went on to win two Academy Awards, and it convinced many people that some government action was needed to control greenhouse gas emissions. Further aiding Gore's cause, the Norwegian Nobel Committee awarded him the 2007 Nobel Peace Prize.

STATE-LEVEL ATTEMPTS TO REPLICATE THE KYOTO PROTOCOL: CALIFORNIA'S GLOBAL WARMING SOLUTIONS ACT AND ITS PROGENY

In 1997, as vice president, Mr. Gore helped negotiate an international treaty known as the Kyoto Protocol.[3] This treaty creates binding commitments for certain developed countries (essentially Europe, Turkey, Russia, the United States, Canada, Australia, New Zealand, and Japan) to reduce their greenhouse gas emissions to five percent below 1990 levels by 2012.

The United States signed the Kyoto Protocol, but President Clinton never sent the treaty to the Senate to be ratified. The obvious reason President Clinton did not send the Kyoto Protocol to the Senate is that a few months prior to the final treaty negotiations, the Senate voted 95-0 on a resolution expressing dissatisfaction with the main elements of the Protocol.[4]

Like President Clinton, President Bush never asked for the Senate's consent to the Kyoto Protocol. In fact, environmental groups made the false claim that Bush "withdrew" from the Kyoto Protocol,[5] even though Bush's actions were precisely the same as Clinton's—neither ever sent the treaty to the Senate. President Obama has thus far followed the same policy with regard to the Kyoto Protocol as Presidents Clinton and Bush. He is free to send Kyoto to the Senate for ratification, but he has declined to do so.

On February 16, 2005, the Kyoto Protocol went into effect for the 35 covered countries that had ratified the treaty, though more than 100 other nations ratified it as well but without obligation to reduce their greenhouse gas emissions. Environmental pressure groups recognized that cap-and-trade legislation at the federal level had stalled and that the U.S. Senate was unlikely to ratify the Kyoto Protocol, so they changed tactics and started

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[2] Box Office Mojo, *Documentary: 1982-Present* (2010), http://boxofficemojo.com/genres/chart/?id=documentary.htm.
[3] Samuel Thernstrom, *Inconvenient Truths for Al Gore*, National Review Online, May 25, 2006, http://www.aei.org/article/24451 .
[4] *See* Senate Resolution 98 (105th Congress, 1st Sess., [1997]),
[5] *See e.g.* Greenpeace*, U.S. Withdraws from Kyoto Protocol*, http://www.greenpeace.org/usa/news/u-s-withdraws-from-kyoto-prot (Apr. 5, 2001).

aggressively pushing greenhouse gas regulations at the state level. The first of these state-level cap-and-trade plans was California's "Global Warming Solutions Act of 2006."[6]

Originally introduced in 2004, the Global Warming Solutions Act needed a couple years to generate the sufficient political momentum to pass.[7] But with the support of leading environmental groups,[8] the California legislature passed the Act on August 31, 2006, and Governor Arnold Schwarzenegger signed it on September 27, 2006.

The Global Warming Solutions Act is short on solutions but long on ambition. The law requires California to reduce its greenhouse gas emissions to 1990 levels by 2020 (approximately a 25 percent reduction from 2006 levels).[9] Despite the title, the Act does not lay out the regulations to actually reduce carbon dioxide and greenhouse gas emissions. Instead, it gives the California Air Resources Board the authority to develop the necessary rules to achieve the goals of greenhouse gas emission reductions.

New Jersey, Hawaii, Massachusetts, and Connecticut Follow California

After the passage of the Global Warming Solutions Act in California, legislatures in other states decided to follow California's lead. In 2007, New Jersey passed the "Global Warming Response Act"[10]—a stricter version of California's law that committed New Jersey to reducing emissions to 1990 levels by 2020 and then to 80 percent of 2006 emissions by 2050. Also in 2007, Hawaii passed the Global Warming Solutions Act, requiring greenhouse gas emissions cuts to 1990 levels by 2020.[11]

In 2008, Massachusetts fell into line as well, passing its own Global Warming Solutions Act,[12] which requires greenhouse gas emission reductions of between 10 and 25 percent below 1990 levels by 2020 and 80 percent below 1990 levels by 2050. Connecticut followed suit in passing a

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[6] California Global Warming Solutions Act of 2006, A.B. 32 (Cal. 2006), http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_0001-0050/ab_32_bill_20060927_chaptered.pdf.

[7] Complete Bill History: AB 32, http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_0001-0050/ab_32_bill_20060927_history.html.

[8] *See e.g.* Sierra Club Loma Prieta Chapter, *Resources for Cool Cities Teams*, http://lomaprietaglobalwarming.sierraclub.org/coolcities.php and Greenpeace Blogs, *California on Brink of Global Warming Breakthrough,* Aug. 17, 2006, http://members.greenpeace.org/blog/humanfreakshow300/2006/08/17/california_on_brink_of_global_warming_br.

[9] State of California, *Gov. Schwarzenegger Signs Landmark Legislation to Reduce Greenhouse Gas Emissions*, press release, Sept. 27, 2006, http://gov.ca.gov/press-release/4111/.

[10] The Global Warming Response Act, A. 3301 (N.J. 2007), http://www.njleg.state.nj.us/2006/Bills/A3500/3301_R2.HTM.

[11] Act 234 (Haw. 2007), http://www.capitol.hawaii.gov/session2007/bills/HB226_CD1_.htm.

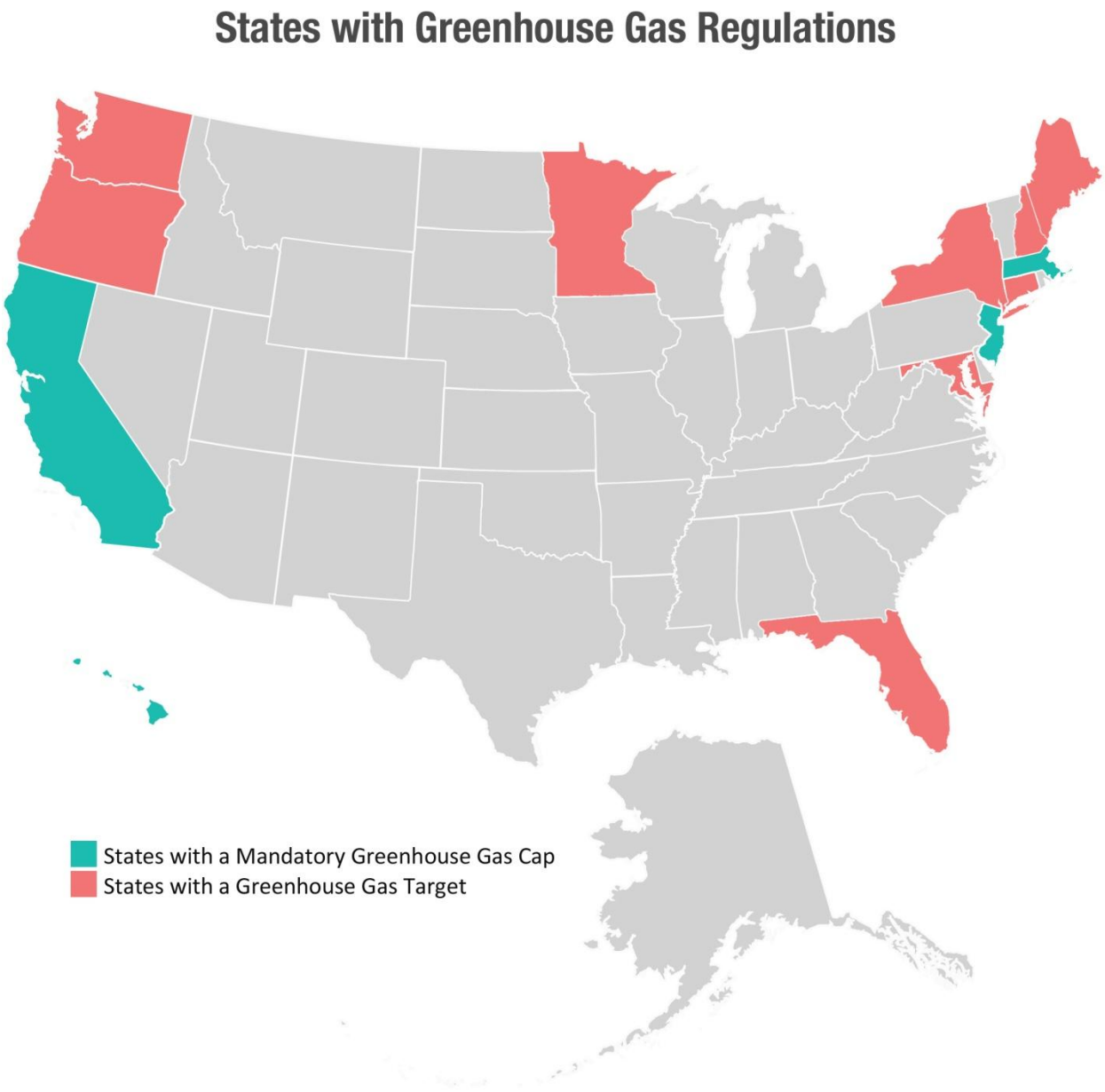
[12] Massachusetts Global Warming Solutions Act, S.B. 2540 (Mass. 2008), http://www.mass.gov/legis/bills/senate/185/st02/st02540.htm

global warming "solutions" bill on June 2, 2008.[13] Connecticut's law establishes a goal for the state to reduce greenhouse gas emissions to at least 10 percent below 1990 levels by 2020 and at least 80 percent below 2001 levels by 2050.

Washington State Creates Binding Greenhouse Gas Reduction Targets without the Regulations Needed to Reach the Targets

In 2008, the state of Washington passed the "Climate Action and Green Jobs Bill."[14] This bill limits state greenhouse gas emissions in 2035 to 25 percent below 1990 levels and 50 percent below 1990 levels in 2050. While these are binding limits, the bill does not empower a regulatory agency to develop regulations. Instead it charges the state's Department of Ecology with creating recommendations for the state legislature.

[13] An Act Concerning Connecticut Global Warming Solutions, H.B. 5600 (Conn. 2008), http://www.cga.ct.gov/2008/ACT/PA/2008PA-00098-R00HB-05600-PA.htm.
[14] H.B. 2815 (Wash. 2008), http://apps.leg.wa.gov/documents/billdocs/2007-08/Pdf/Bills/House%20Passed%20Legislature/2815-S2.PL.pdf.



Oregon and Florida Passed Laws Creating Greenhouse Gas Reduction Goals

While California, Connecticut, Hawaii, Massachusetts, New Jersey, and Washington passed laws requiring greenhouse gas reductions, Oregon and Florida have taken slightly different tacks.

In 2007, Oregon passed H.B. 3543 codifying Governor Kulongoski's greenhouse gas reduction goals.[15] The bill set the goal of reducing Oregon's greenhouse gas emissions to 10 percent

[15] Oregon.gov, *Climate Change in Oregon—House Bill 3543: Global Warming Actions*, Aug. 13, 2007, http://www.oregon.gov/ENERGY/GBLWRM/HB3543.shtml.

below 1990 levels by 2020 and to 75 percent below 1990 levels by 2050.[16] The bill, however, did not create the regulations necessary to achieve these goals. Instead, it established a Global Warming Commission responsible for recommending ways to meet the goals.

In June 2008, the Florida legislature passed the "Florida Climate Protection Act."[17] This bill did not set greenhouse gas emissions targets; instead, it charged the Florida Department of Environmental Protection to develop a cap-and-trade program for electric utilities and then bring that program to the legislature for approval.

Maryland Follows the Example of Florida and Washington

In 2008, Maryland seemed poised to pass its own Global Warming Solutions Act, S.B. 309.[18] But in the end the bill was defeated. Similar to the binding greenhouse gas emissions limits in other states, S.B. 309 would have required Maryland to reduce carbon dioxide emissions by 25 percent by 2020. But vocal protests from organized labor (not present in other states), on the grounds that the policy would drive up energy prices and displace area jobs, eventually proved too much for the policy's proponents to overcome.

In 2009, Maryland's legislators crafted a new bill that sought to deal with the concerns raised in 2008. This new bill, S.B. 278, the "Greenhouse Gas Emissions Reduction Act of 2009," requires Maryland to reduce greenhouse gas emissions 25 percent below 2006 levels by 2020.[19] The bill did not specify how Maryland would achieve this goal, but instead required the Maryland Department of the Environment to create a plan and for the state legislature to consider the plan by 2012. The plan must ensure no loss of existing jobs in the state's manufacturing sector, a net increase in state jobs, a net economic benefit to the state's economy, and no adverse impact on the reliability and affordability of electricity.

It is not clear how Maryland's Department of the Environment can possibly achieve these goals. All of the respected studies on cap-and-trade agree that cap-and-trade increases costs.

The Trend in State-Level Greenhouse Gas Emissions Goals

California was the first state in the nation to impose a state-level greenhouse gas cap. To achieve the necessary greenhouse gas reductions, California's legislators gave the state's Air Resources Board the authority to create the necessary regulations, instead of making the hard decisions themselves. More recently, states such as Washington, Florida, and Maryland have restrained their state regulators, assigning to state regulatory bodies authority only to suggest a

[16] H.B. 3543 §2 (Or. 2007), http://www.leg.state.or.us/07reg/measpdf/hb3500.dir/hb3543.en.pdf.
[17] H.B. 7135 (Fla. 2008), http://www.flsenate.gov/data/session/2008/House/bills/billtext/pdf/h713503er.pdf.
[18] S.B. 309 (Md. 2008), http://mlis.state.md.us/2008RS/billfile/SB0309.htm.
[19] S.B. 278 (Md. 2009), http://mlis.state.md.us/2009rs/bills/sb/sb0278e.pdf.

plan for reducing GHG emissions, not unilaterally to impose one. In these states, regulators are required to submit their plans to the state legislature for approval. This significantly limits the power of the regulators, but it may force the state legislatures to make hard decisions. We will have to wait a few years to see what kind of regulations these states choose to adopt. So far, therefore, despite terrific rhetoric, policymakers have largely gotten away with making their actions no more than "cheap virtue."

CAP-AND-TRADE IS ALLEGEDLY A MARKET-BASED SCHEME. SO WHY DON'T ITS PROPONENTS TRUST MARKETS?

One of the ways states such as California and Florida have decided to meet their goals for greenhouse gas emission reduction is through cap-and-trade. Cap-and-trade regulations start by setting a cap on emissions. Then the state auctions and/or gives away "allowances" to release the regulated emissions. These rationed emission "rights" can be traded between competing users so that companies capable of reducing emissions cost-effectively will sell their excess permits to companies that can reduce their emissions only through higher-cost means. In theory, this leads to an emissions market and more cost-effective emissions reductions.

Here is how the Environmental Defense Fund explains the virtues of cap-and-trade:[20]

> "Cap and trade" harnesses the forces of markets to achieve cost-effective environmental protection. Markets can achieve superior environmental protection by giving businesses both flexibility and a direct financial incentive to find faster, cheaper and more innovative ways to reduce pollution.

Although cap-and-trade schemes have some market-like properties they are not true "market" solutions. The "trade" portion of cap-and-trade is market-like, but nothing about a politically-mandated "cap" is market-based. Cap-and-trade systems always set the cap through regulation, not through the voluntary, market-based decisions of those who stand to be affected. And because caps are set through regulation and legislation, they can be set for political reasons and not economic or environmental reasons.

Further, political will has been lacking throughout all attempts at creating these schemes for carbon dioxide. The legislation politically allocates the "allowances," with the squeakiest and most effective lobbying wheels getting the grease. Indeed, "carbon" lobbying has become one of the few growth industries during the current economic downturn because so much money is at stake. Even Peter Orszag, currently the director of the White House Office of Management

[20] Environmental Defense Fund, *The Cap and Trade Success Story*¸ http://www.edf.org/page.cfm?tagID=1085.

and Budget, called that aspect potentially the biggest corporate welfare scheme in our history.[21]

Moreover, if caps are based on historic emission performance, then companies who succeed economically—that is, companies that grow—will on many occasions have to buy allowances from those who have failed to grow. That is only one of many perverse disincentives in these CO_2 cap-and-trade schemes.

Nor do supporters of cap-and-trade seem to trust it to achieve its supposed benefits. For they propose additional regulations that further increase the cost of energy and increase the cost of the things that use energy. Gov. Schwarzenegger, for example, has traveled the world promoting cap-and-trade as a way of reducing greenhouse gas emissions in his state and globally. But his actions show that he does not trust cap-and-trade. Three months after he signed California's Global Warming Solutions Act, he signed an executive order to create a "low carbon fuels standard," the goal of which is to reduce the carbon intensity of transportation fuels by 10 percent by 2020.[22] Schwarzenegger has also pushed for more stringent regulations on the greenhouse gas emissions from passenger vehicles[23] and approved something known as a feed-in tariff, a policy proposal considered too radical even for the current Congress to consider openly.[24]

California also regulates greenhouse gas emissions through a variety of other policies, including a *de facto* ban on new coal-fired power plants, a renewable portfolio standard, and rigid appliance-efficiency standards. And California is not alone in adding regulations on top of a cap-and-trade scheme.

In almost every case in which a cap-and-trade plan has been seriously discussed, politicians have determined that the best way to set the potential cap is through political giveaways, not through market mechanics. Under some plans, emissions permits are auctioned, while other plans sell some of the permits and give away the rest, and still other plans give away all of the permits. In the end, cap-and-trade programs become incredibly complex. And that is by design. The more complex they get, the more primacy the legislature secures in determining who will win and who will not, making it easier to attract votes.

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[21] David Wessel, *Pollution Politics and the Climate-Bill Giveaway*, WALL STREET JOURNAL, May 23, 2009, http://online.wsj.com/article/SB124304449649349403.html.

[22] Cal. Exec. Order No. S-01-07 (Jan. 18, 2007), http://gov.ca.gov/executive-order/5172/.

[23] Press Release, *Governor Schwarzenegger Sends Letter to President Obama Urging Reconsideration of California's Waiver Request for Cleaner Cars*, Jan. 21, 2009, http://gov.ca.gov/press-release/11404/.

[24] Debra Kahn, *California: Schwarzenegger signs feed-in tariff, spate of enviro bills*, GREENWIRE, Oct. 12, 2009.

In 2008, the Lieberman-Warner "Climate Security Act of 2008" was 344 pages long, but the bill stalled in the Senate.[25] In 2009, when the Waxman-Markey cap-and-trade bill was unveiled, it was 648 pages. The bill then grew to 932 pages upon introduction, and eventually to 1,092 pages when it reached its committee markup. It didn't stop there. The final bill was reported out of the Rules committee at a staggering 1,201 pages in length, and a later amendment that was tacked on ran to an additional 309-pages. The legislation that passed the House this summer was 1,428 pages long. [26] We'll let you decide for yourself how many members read the bill before rendering a vote on it.

According to its supporters, cap-and-trade is supposed to be an efficient way to reduce carbon dioxide emissions. But instead of promoting a cap-and-trade only program, "cap-and-trade" bills include regulation after regulation and turn into mammoth pieces of legislation. If the promoters of cap-and-trade legislation truly believed in cap-and-trade, the additional regulations found in these huge bills would be unnecessary

REGIONAL GREENHOUSE GAS INITIATIVES—CAP-AND-TRADE AT A REGIONAL LEVEL

A number of states have joined together in regional initiatives to reduce greenhouse gas emissions. These regional initiatives include the Regional Greenhouse Gas Initiative (RGGI), the Western Climate Initiative, and the Midwest Greenhouse Gas Reduction Accord. Of these initiatives, only RGGI has binding emission limits. The Western Climate Initiative and the Midwest Greenhouse Gas Reduction Accords are essentially agreements between governors rather than agreements accepted by state legislatures. Unless the state legislatures act, the greenhouse gas caps or targets imposed under these accords between governors are not likely to be legally binding and if they were legally binding they would surely require congressional approval under the Constitution's "Compact Clause."[27] To date this requirement has not been tested.

RGGI is the oldest of the initiatives. It includes Northeastern and Mid-Atlantic states, including Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New

[25] S. 3036 (110th Congress), http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_bills&docid=f:s3036pcs.txt.pdf.
[26] Institute for Energy Research, *The Road to Energy Serfdom in 648…No, 932…Make That 1,092…Better Yet 1,201…I Meant 1,428 Short Pages*, http://www.instituteforenergyresearch.org/2009/07/14/the-road-to-energy-serfdom-in-648no-932make-that-1092better-yet-1201i-meant-1428-short-pages/.
[27] U.S. Const. Art. I, § 10. Compact Clause states, "No State shall, without the Consent of Congress, lay any duty of Tonnage, keep Troops, or Ships of War in time of Peace, enter into any Agreement or Compact with another State, or with a foreign Power, or engage in War, unless actually invaded, or in such imminent Danger as will not admit of delay."

York, Rhode Island, and Vermont. Their goal is to cap carbon dioxide emissions from power plants and reduce those emissions by 10 percent by 2018.[28]

On January 1, 2009, the RGGI regulations went into effect. But despite claims that the program will reduce greenhouse gas emissions, it has yet to prove that it will or can. According to the *New York Times*:

[28] Regional Greenhouse Gas Initiative, *About RGGI*, http://www.rggi.org/about (last visited Mar. 2, 2010).

> The program is due to get off the ground in nine days, but already there are worries that it may fail to reduce pollution substantially in the Northeast, undermining a concept that is being watched carefully by the rest of the country, by Congress and by European regulators. . . .
>
> The concept has been praised by environmentalists and state officials. But the emissions cap was based on overestimates of carbon dioxide output, which has dropped sharply from 2005 to 2006 and is on a lower trajectory than anticipated.
>
> So auction demand may be weak at the start, with millions of allowances the states planned to sell not immediately needed. And with the cap on emissions most likely to be higher, at least initially, than the plants' actual carbon-dioxide output, ***it may be many months before utilities have an incentive to cut pollution***.[29] [emphasis added]

In other words, the cap on emissions set by politicians ended up being higher than the level of emissions that actually exists. In fact, the interest group Environment Northeast reports that the cap appears to be nine percent above the 2007 emissions level.[30] This means that power plants covered by the plan likely will not have to reduce their emissions for a number of years. This is especially true because the recession has reduced electricity use and concomitant carbon dioxide emissions. In fact, an economic downturn remains the only demonstrated means of reducing GHG emissions on any sustained basis.

Political considerations are likely one reason that the cap was set higher than actual emission levels. Phil Giudice, the commissioner of the Massachusetts Department of Energy Resources told the *New York Times* that the estimate for the level of the cap "was put together a number of years ago from both an analytical aspect and, not surprisingly, a political one."[31]

Politicians do not want to be seen as having imposed on their constituents increased energy prices by an identifiable source, such as a transparent direct tax or a less transparent cap-and-trade plan. Instead, the incentive structure calls on politicians to promote cap-and-trade policies to appease base voters and then vote for a system that both fails to reduce emissions and, as a result, fails to measurably impact the price of energy—thus avoiding voter backlash.

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[29] Felicity Barringer & Kate Galbraith, *States Aim to Cut Gases by Making Polluters Pay*, N.Y. TIMES, Sept. 15, 2008, p. A17, http://www.nytimes.com/2008/09/16/us/16carbon.html?_r=1.

[30] Environment Northeast, *Emissions Trends and Inaugural Allowance Auction: Regional Greenhouse Gas Initiative*, p. 2, Sept. 3, 2008, http://www.env-ne.org/public/resources/pdf/ENE_RGGI_Emissions_and_Auction_Rpt_090308_final.pdf.

[31] Felicity Barringer & Kate Galbraith, *States Aim to Cut Gases by Making Polluters Pay*, N.Y. TIMES, Sept. 15, 2008, p. A17, http://www.nytimes.com/2008/09/16/us/16carbon.html?_r=1.

But politics is not the only possible reason the cap was set higher than actual emissions. According to an anonymous insider, the purpose of RGGI is not to reduce emissions but to get a cap-and-trade program for carbon dioxide started in America. On the *Prometheus* blog an anonymous insider wrote:

> ***I do not think RGGI*** [sic] ***cap was set to reduce emissions because that wasn't the primary purpose of RGGI***. At the start of the RGGI process there was a tacit understanding amongst the participants that the real goal of RGGI was to develop the framework for a CO_2 cap-and-trade program that could be used as a model for a national program. After all, the unstated reality is that it could never hope to actually have any impact on global warming.[32] [emphasis added]

The current economic downturn is another reason RGGI's cap-and-trade scheme will not have an impact on carbon dioxide emissions. The Energy Information Administration recently reported that U.S. carbon dioxide emissions have dramatically dropped in 2008 and 2009. According to data from the Energy Information Administration (EIA), carbon dioxide emissions from fossil fuels dropped dramatically from 2007 through 2009.[33] This drop in overall emissions means that RGGI's cap is even more ineffectual than when it was set.

The Western Climate Initiative

The Western Climate Initiative was started in February 2007 as a collaborative effort of Arizona, California, Montana, New Mexico, Oregon, Utah, Washington, and the Canadian provinces of British Columbia, Manitoba, Ontario, and Quebec. The centerpiece of the Western Climate Initiative is a regional cap-and-trade program[34] with a goal to reduce greenhouse gas emissions by 15 percent below 2005 levels by 2020.[35]

The Western Climate Initiative has a more ambitious emissions reduction target than RGGI. But unlike RGGI, the Initiative is an agreement among governors and not based on legislation passed by the legislatures of the member states and provinces. By contrast, all of the RGGI states except New York have passed laws to implement the Initiative.

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[32] Anonymous, *An Insider's View on RGGI*, Prometheus: The Science Policy Blog, Sept. 24, 2008, http://sciencepolicy.colorado.edu/prometheus/an-insiders-view-on-rggi-4585.

[33] *See* Energy Information Administration, *Short Term Energy Outlook Table Browser: Table 9a. U.s. Macroeconomic Indicators and CO_2 Emissions*, http://tonto.eia.doe.gov/cfapps/STEO_Query/steotables.cfm?tableNumber=5 . From 2007 through 2009 EIA estimates that CO_2 emissions from fossil fuels fell by over 9 percent.

[34] Western Climate Initiative, *Designing the Program*, http://www.westernclimateinitiative.org/designing-the-program (last visited Mar. 2, 2010).

[35] Western Climate Initiative, *The WCI Cap & Trade Program*, http://www.westernclimateinitiative.org/the-wci-cap-and-trade-program (last visited Mar. 2, 2010).

Of the Western Climate Initiative states, California, Oregon, and Washington have greenhouse gas caps (or at least greenhouse-gas-cap goals), but New Mexico, Arizona, Montana, and Utah have not passed laws establishing greenhouse gas caps or legislatively joining the Western Climate Initiative. Instead, the governors of New Mexico, Arizona, Utah, and Montana signed up their states for the Western Climate Initiative. But it is unlikely a governor can require his or her state to cap their carbon dioxide emissions without the legislature's passing a bill and, as noted, binding requirements traceable to such an interstate agreement surely trigger the Constitution's Compact Clause.

Thus, it appears that the Western Climate Initiative is to be binding only on Washington, Oregon, and California because of their legislatively-passed greenhouse gas caps. Until the legislatures of Arizona, New Mexico, Montana, and Utah pass greenhouse-gas-cap laws, the Western Climate Initiative will be an aspirational target only.

Some states are starting to sour on participation in the Western Climate Initiative. For example, Arizona's Governor Jan Brewer issued an executive order in February 2010 declaring that Arizona will not participate in the Western Climate Initiative's cap-and-trade system.[36] Also in 2010, the Utah House of Representatives passed a resolution calling on Utah's Governor to back out of the Initiative.[37]

The Midwestern Greenhouse Gas Accord

The Midwestern Greenhouse Gas Accord is an agreement among the governors of Kansas, Minnesota, Iowa, Indiana, Illinois, Michigan, and Wisconsin to develop a cap-and-trade scheme that will reduce greenhouse gas emissions 60 and 80 percent below current emissions levels.[38] Like the Western Climate Initiative, this is an agreement between governors, without legislative approval. As such, the agreement is unlikely to have the force of law until the state legislatures pass authorizations. For the time being, the Midwestern Greenhouse Gas Accord, like the Western Climate Initiative, is mostly aspirational.

[36] Shuan McKinnon, *Arizona quits Western climate endeavor,* THE ARIZONA REPUBLIC, Feb. 11, 2010, http://www.azcentral.com/arizonarepublic/news/articles/2010/02/11/20100211climate-brewer0211.html.
[37] Brandom Loomis, *House seeks to leave Western Climate Initiative*, THE SALT LAKE TRIBUNE, Feb. 24, 2010, http://www.sltrib.com/news/ci_14465421.
[38] Press Release, *Ten Midwestern Leaders Sign Greenhouse Gas Reduction Accord*, Nov. 15, 2007, http://www.wisgov.state.wi.us/journal_media_detail.asp?locid=19&prid=3027.

DE FACTO BANS ON COAL-FIRED POWER PLANTS

Besides cap-and-trade programs, one way that some states are trying to reduce greenhouse gas emissions is by effectively banning coal-fired power plants. It is less expensive to produce electricity from coal-fired power plants than from natural gas, nuclear, or any of the renewable sources. Using current technology, however, coal-fired electricity generation emits more carbon dioxide per megawatt hour than natural gas-fired electricity generation. As a result, many politicians and environmental groups are attempting to stop all new coal-fired electricity generation.[39]

As a part of the movement to ban inexpensive coal-fired electricity, some states have instituted regulations that effectively ban coal-fired power plants. In 2006, California passed S.B. 1368, which created a greenhouse gas performance standard for power plants.[40] The performance standard of 1,100 pounds of carbon dioxide per megawatt hour for baseload electricity generation is based on the amount of carbon dioxide emitted from a combined cycle natural gas-fired power plant.[41] To meet the standard, a coal-fired power plant would be forced to use technology that does not exist. Thus, the performance standard effectively bans new coal-fired power plants.

In 2007, Washington State passed S.B. 6001. Like California's S.B. 1368, this law sets a greenhouse gas performance standard for all new baseload electric generation of 1,100 pounds of greenhouse gases per megawatt hour.[42]

Other State Regulatory Obstacles to New Coal-Fired Power Plants

Other states are actively pursuing similar de facto bans on coal-fired power plants. On October 19, 2007, the Kansas Department of Health and Environment rejected an air-quality permit for a proposed coal-fired power plant because of carbon dioxide emissions. This was the first time a government agency had rejected an air-quality permit because of carbon dioxide emissions.[43] According to the *Washington Post*, one possible reason for Kansas's rejection was that Gov. Kathleen Sebelius was head of the Democratic Governors Association and was "believed to

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[39] *See* Sierra Club, *Move Beyond Coal*, http://www.sierraclub.org/coal/ (last visited Mar. 2, 2010).
[40] S.B. 1368 (Cal. 2006), http://www.energy.ca.gov/emission_standards/documents/sb_1368_bill_20060929_chaptered.pdf.
[41] Public Utilities Commission of the State of California, *Interim Opinion on Phase 1 Issues: Greenhouse Gas Emissions Performance Standard* at § 1.2, Decision 07-01-039, Jan. 25, 2007, http://docs.cpuc.ca.gov/word_pdf/FINAL_DECISION/64072.pdf.
[42] S.B. 6001 § 1 (Wash. 2007), http://www.leg.wa.gov/pub/billinfo/2007-08/Pdf/Bills/Senate%20Passed%20Legislature/6001-S.PL.pdf.
[43] Steven Mufson, *Power Plant Rejected Over Carbon Dioxide For First Time*, WASHINGTON POST, Oct. 19, 2007, p. A01, http://www.washingtonpost.com/wp-dyn/content/article/2007/10/18/AR2007101802452.html.

harbor aspirations for federal office."[44] President Obama tapped Gov. Sebelius to serve as his Secretary of Health and Human Services.[45]

Illinois Clean Coal Portfolio Standard

In early 2009, Illinois passed the Illinois Clean Coal Portfolio Standard Law.[46] This law requires new coal-fired power plants to capture and store 50 percent of their carbon dioxide emissions (the technology to do this does not yet exist at a reasonable price) and then requires electric utilities in the state to purchase a certain percentage of their electricity from these power plants. Illinois also provided subsidies for the first large-scale coal-fired power plant that tests carbon-capture and storage technologies.[47]

RENEWABLE PORTFOLIO STANDARDS

Renewable portfolio standards are mandates that require utilities to generate or sell a certain percentage of "renewable" electricity to their customers or buy renewable credits from other utilities. The definition of "renewable" electricity may seem straightforward, but in fact, the definition of what is "renewable" varies widely from state to state.[48] For example, many states define large hydroelectric power as renewable, but California does not.

Currently 29 states and the District of Colombia have binding renewable portfolio standards, 6 have non-binding renewable goals,[49] and 15 states do not have a renewable portfolio mandate.

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[44] *Id.*

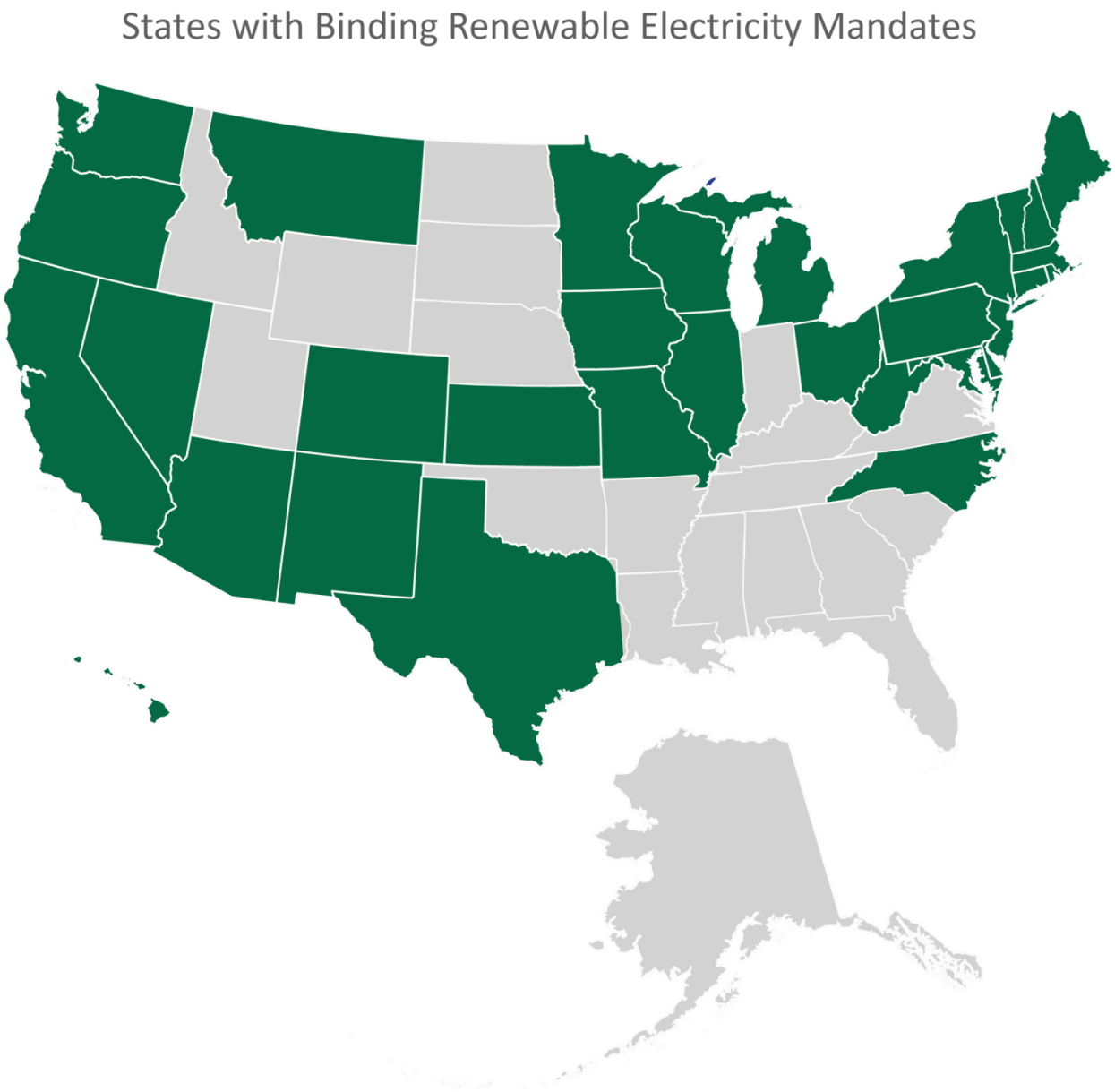
[45] Sunflower Electric Power Corporation has applied for a permit to explain its coal-fired power plant in Holcomb, Kansas, but the permit has not yet been granted. Environmental News Service, *Sunflower Electric reapplies for Coal-Fired Power Plant Expansion*, Jan. 14, 2010, http://www.ens-newswire.com/ens/jan2010/2010-01-14-092.html.

[46] S.B. 1987 (Ill. 2008), http://ilga.gov/legislation/publicacts/95/PDF/095-1027.pdf.

[47] Coal Utilization Research Council, *Illinois Clean Coal Portfolio Law*, Jan. 26, 2009, http://www.coal.org/news/article.asp?ARTICLE_ID=165&.

[48] *See* Database of State Incentives for Renewables & Efficiency, *California Incentives for Renewable Energy*, http://www.dsireusa.org/library/includes/incentive2.cfm?Incentive_Code=CA25R&state=CA&CurrentPageID=1.

[49] Database of State Incentives for Renewables & Efficiency, *Renewable Portfolio Standards,* http://www.dsireusa.org/documents/summarymaps/RPS_map.pptx.



Renewable Electricity Mandates Increase the Price of Electricity

There are many problems with renewable electricity mandates. The most obvious is that these mandates are designed to increase the cost of electricity. Currently, electricity costs are 39 percent higher in states that have binding renewable portfolio standards. (See Appendix 1).

It is not clear how much this price differential is the result of the renewable electricity mandates and how much is a function of the sources of electricity generation in states which

have chosen to impose these mandates. What is clear is that states which generate a majority of their electricity from coal or hydro has the lowest electricity prices. In fact, of the top 15 states with the lowest electricity prices only two do not generate a majority of their electricity from coal or hydro.[50] Conversely, renewable portfolio mandates discriminate against coal-fired electricity and some do not count hydroelectricity as a renewable source of electricity.[51] By shifting electricity generation away from coal and conventional hydroelectricity toward more expensive technologies, electricity prices will increase.

Economist Gilbert Metcalf of Tufts University compiled the table below comparing the cost of electricity from various sources.[52] The column titled "Current Law" shows the price of electricity under current tax law, which provides for differing treatment for each source of electricity. To cancel out the different tax treatments for the different sources of electricity, Metcalf calculated the column titled "level playing field," which shows the cost of electricity assuming all of the sources were treated equally by the tax code. The last column shows the price if there were no taxes.

Real Levelized Costs of Electricity			
Technology	**Current Law**	**Level Playing Field**	**No Tax**
Nuclear	4.31	5.94	4.57
Conventional Coal	3.53	3.79	3.10
"Clean Coal" (IGCC)	3.55	4.37	3.53
Natural Gas	5.47	5.61	5.29
Biomass	5.34	5.95	4.96
Wind	5.70	6.64	4.95
Solar Thermal	12.25	18.82	13.84
Solar Photovoltaic	22.99	37.39	26.64

Source: Gilbert Metcalf, *Federal Tax Policy Toward Energy*, p. 22 (Oct. 2007)
http://web.mit.edu/globalchange/www/MITJPSPGC_Rpt142.pdf
Note: All costs are per kWh at year 2004 prices.

Metcalf explains that the costs of wind and solar shown here are actually too low because the cost does not reflect the fact that solar and wind work only intermittently. People demand access to electricity 24 hours a day. People can be frustrated and they can suffer real harm,

[50] The only two states in the top 15 states with the lowest electricity prices that do not generate a majority of their electricity from coal or hydro are Oklahoma and Louisiana. *See* EIA, Electric Power Monthly, Table 5.6.B., Average Retail Price of Electricity, Dec. 2009, Released Mar. 15, 2010, http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html.

[51] *See* Database of State Incentives for Renewables & Efficiency, *California Incentives for Renewable Energy*, http://www.dsireusa.org/library/includes/incentive2.cfm?Incentive_Code=CA25R&state=CA&CurrentPageID=1.

[52] Gilbert Metcalf, *Federal Tax Policy Toward Energy* 22 (Oct. 2007) http://web.mit.edu/globalchange/www/MITJPSPGC_Rpt142.pdf.

both economic and physical, when the lights go off, even for a short period. To have electricity at night when the sun does not shine or when the wind is not blowing requires stand-by power that can produce electricity when the renewables are not available.

Metcalf notes that the Royal Academy of Engineering has calculated that the stand-by reserves required by wind power increases the real cost of wind power by nearly 50 percent.[53] Thus, wind costs 60 percent more than conventional coal, but because wind power necessitates back-up generation, its true cost under current law is 142 percent greater. And if there were a "level playing field" with respect to tax treatment between different forms of electricity production, the true cost of wind would be 163 percent greater than the cost of coal.

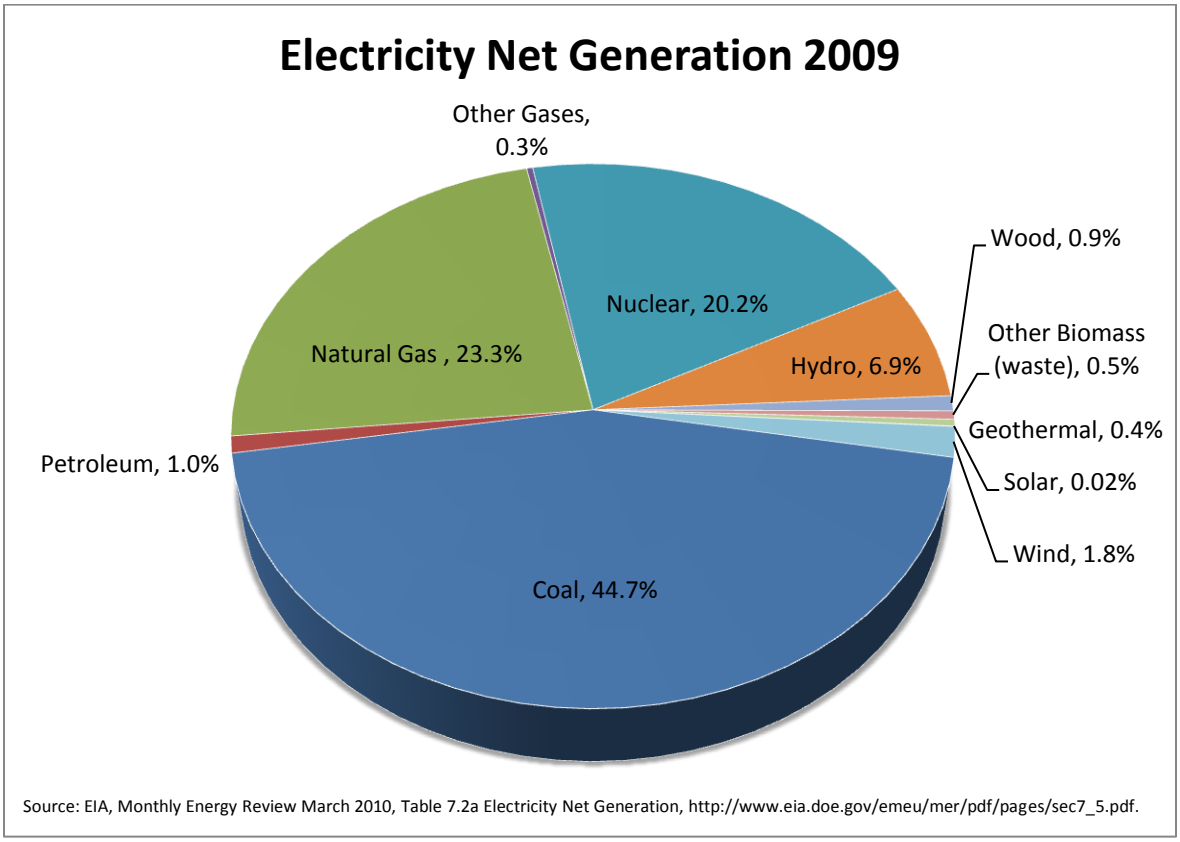
Regardless of tax treatment, mandating the use of wind and solar through renewable portfolio standards increases electricity costs for consumers.

[53] Gilbert Metcalf, Federal Tax Policy Toward Energy 22 (Oct. 2007) http://web.mit.edu/globalchange/www/MITJPSPGC_Rpt142.pdf citing PB Power, *The Cost of Generating Electricity*, (2004) http://www.raeng.org.uk/news/publications/list/reports/Cost_of_Generating_Electricity.pdf.

Renewable Electricity Mandates Do Nothing to "Strengthen Energy Security"

Some proponents of renewable portfolio standards argue that these mandates "strengthen our energy security."[54] This is not true. Imported energy sources hardly contribute to our electricity generation.

The graphic below shows the sources of electricity generation in the United States.[55]



Almost 100 percent of these sources of electricity are domestic. We import a large portion of our oil supplies but, as this graph shows, only 1 percent of our electricity was produced by petroleum in 2009.

What the proponents of renewable electricity mandates do not mention is that mandating the use of wind and other intermittent forms of energy could lead to less energy security. As noted above, wind, solar, and other intermittent forms of energy need stand-by power, to generate

[54] *See* American Wind Energy Association, *State-Level Renewable Energy Portfolio Standards*, http://www.awea.org/legislative/pdf/RPS_Fact_Sheet.pdf (last visited Mar. 2, 2010).
[55] Energy Information Administration, *Monthly Energy Review, Table 7.2a Electricity Net Generation: Total (All Sectors),* May 2010, http://www.eia.doe.gov/emeu/mer/pdf/pages/sec7_5.pdf.
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electricity if the wind stops blowing or clouds block the sun. Generally this stand-by power is generated by natural gas. If federal and state regulators limit natural gas production, that would cause the United States to import more natural gas. This is precisely what Spain's aggressive renewable mandate produced: massive reliance on foreign gas supplies. The countries with the largest natural gas reserves are Russia, Iran, Qatar, Saudi Arabia, and the United Arab Emirates. Russia just completed the Sakhalin II liquefied natural gas project under the assumption that it will have the opportunity in the future to provide natural gas to the Americas.[56]

In short, renewable portfolio standards help increase the price of electricity and contribute to the diminution of U.S. energy security. Adding these programs on top of cap-and-trade is unlikely to produce appreciable additional emission reductions. Indeed, when the question was assessed in Germany, additional greenhouse gas reductions were identified as being essentially zero.[57]

GREENHOUSE GAS REGULATION OF MOTOR VEHICLES AND MOTOR VEHICLE FUEL

There are two ways states are attempting to reduce carbon dioxide emissions from automobiles and trucks—reducing the amount of carbon contained in the fuels and mandating increased fuel efficiency standards for the vehicles themselves.

Renewable Fuel Mandates

Just a few years ago, ethanol was hailed by some as a savior.[58] Allegedly, ethanol production would reduce the carbon dioxide emissions from transportation fuels and reduce dependence on imported oil. As U.S. House Speaker Nancy Pelosi put it, "Our plan will send our energy dollars to the Midwest, not the Middle East."[59] In 2007, at the behest of President Bush, Congress passed a renewable fuels mandate that required increasing corn ethanol each year

[56] *See* Catherine Belton & Mure Dickie, *Russia opens new energy supply front to Asia*, FINANCIAL TIMES, Feb. 19, 2009, http://www.ft.com/cms/s/0/5040684a-fe25-11dd-932e-000077b07658.html.
[57] Manuel Frandel et. al., Economic impacts from the promotion of renewable energies: The German experience, Rheinisch-Westfälisches Institut für Wirtschaft sforschung, Oct. 2009, http://www.instituteforenergyresearch.org/germany/Germany_Study_-_FINAL.pdf.
[58] *See* Clifford Krauss, *Ethanol, Just Recently a Savior, Is Struggling*, N.Y. TIMES, Feb. 11, 2009, p. A1, http://www.nytimes.com/2009/02/12/business/12ethanol.html.
[59] Congresswoman Nancy Pelosi, *Pelosi: Energy Bill Will Be 'Shot Heard 'Round the World' for Energy Independence for America*, Dec. 6, 2007, http://www.house.gov/pelosi/press/releases/Dec07/EnergyBill.html.

until it reached 15 billion gallons by 2015 and 21 billion gallons of advanced biofuels, of which 16 billion gallons must be cellulosic biofuel by 2022.[60]

Many states have also passed renewable fuel mandates. California, Florida, Hawaii, Iowa, Louisiana, Minnesota, Missouri, Montana, New Mexico, and Oregon all have laws that require a certain percentage of ethanol be included in gasoline. These requirements range from two percent in Louisiana to 20 percent in Minnesota.[61]

But the ethanol industry is facing hard times on the policy and economic front. More and more scientific research argues that corn-based and other forms of ethanol production increases carbon dioxide emissions rather than reducing them. According to a study published in *Science* by the Nature Conservancy and the University of Minnesota, many biofuels emit more greenhouse gases than gasoline. According to the researchers, these biofuels may produce "17 to 420 times more carbon dioxide than the fossil fuels they replace."[62] Other research has come to similar conclusions. The Energy and Resources Group of the University of California, at Berkeley, found that "if indirect emissions [resulting from the production of ethanol] are applied to the ethanol that is already in California's gasoline, the carbon intensity of California's gasoline increases by 3% to 33%."[63] Not only does ethanol production appear to produce more greenhouse gas emissions than petroleum production, but ethanol production and combustion may lead to worse air quality than petroleum production.[64]

Besides ethanol's checkered environmental record, or perhaps directly because of it, ethanol producers are struggling financially. Even though federal law creates a guaranteed market for billions of gallons of ethanol, many ethanol plants have recently closed. As Rice University energy policy analyst Amy Myers Jaffe told the *New York Times*, "The ethanol industry is on its back despite the billions of dollars they have gotten in taxpayer assistance, and a guaranteed market."[65] Ethanol production was economic when oil prices were over $100 a barrel, but when the oil price fell, ethanol production became only marginally economic.

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[60] Energy Independence and Security Act of 2007, Pub. L. No. 110-140 (2007), http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_public_laws&docid=f:publ140.110.pdf

[61] LA. CIV. CODE § 3:4674, MINN. STAT. § 239.791. *See also* The National Agricultural Law Center, *States' Biofuel Statutory Citations*, http://www.nationalaglawcenter.org/assets/biofuels/index.html, last visited Mar. 16, 2009.

[62] Joseph Fargione et al., *Land Clearing and the Biofuel Carbon Debt*, 319 SCIENCE 1235 (2008), available at http://www.sciencemag.org/cgi/content/abstract/1152747.

[63] Alex Farrell & Michael O'Hare, *Greenhouse gas (GHG) emissions from indirect land use change (LUC)*, Energy & Resources Group University of California Berkley, Jan. 12, 2008, http://www.arb.ca.gov/fuels/lcfs/011608ucb_luc.pdf.

[64] Jason Hill et al., *Climate change and health costs of air emissions from biofuels and gasoline*, 106 PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES 2077 (2009) available at http://www.pnas.org/content/106/6/2077.full.pdf+html.

[65] Clifford Krauss, *Ethanol, Just Recently a Savior, Is Struggling*, N.Y. Times, Feb. 11, 2009, p. A1, http://www.nytimes.com/2009/02/12/business/12ethanol.html.

There is yet another downside to large amounts of ethanol production—ethanol diverts crops from food production into fuel production. This increases the price of food, which is why the UN special rapporteur on the right to food has called biofuels a "crime against humanity." [66]

To say the least, ethanol mandates have not lived up to their promise. Ethanol does not achieve its environmental goals; ethanol producers are struggling, even with billions of dollars in subsidies and a government-mandated market; and ethanol is making life more difficult for the world's poor.

Low-Carbon Fuel Standards

Instead of learning the lessons about the unintended (though easily foreseeable) consequences of ethanol mandates, people are now promoting a related mandate—low-carbon fuel standards (LCFS). The goal of LCFS is to reduce the carbon dioxide emissions associated with transportation fuels' production (including land use changes), manufacture, transportation and combustion. In reality, this amounts to a new tax on gasoline and diesel.

Low-carbon fuel standards are a relatively new regulatory invention. The first LCFS was created in 2007 when Gov. Schwarzenegger signed an executive order to establish a low-carbon fuel standard in California.[67] In April 2009, the California Air Resources Board required a ten percent reduction in greenhouse gas emissions from transportation fuels by 2020.[68] In late 2008, following California's lead, representatives of the states in the Regional Greenhouse Gas Initiative signed an agreement to pursue a region-wide low-carbon fuel standard.[69]

LCFS are based on the "Field of Dreams" principle—if you mandate it, it will come. At present it is not clear what low-carbon fuels really are or how to achieve them. For example, California provides a few examples of how to meet low-carbon mandates.[70] According to the State of California, fuel providers can: [71]

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[66] Grant Ferrett, *Biofuels 'Crime against humanity*, BBC News, Oct. 27. 2007, http://news.bbc.co.uk/2/hi/americas/7065061.stm.

[67] The California Energy Commission, *Low Carbon Fuel Standard*, http://www.energy.ca.gov/low_carbon_fuel_standard/ (last visited Mar. 4, 2009).

[68] California Air Resources Board, *California Adopts Low Carbon Fuel Standard*, press release, Apr. 23, 2009, http://www.arb.ca.gov/newsrel/nr042309b.htm.

[69] *See* State of Massachusetts, *11 States Agree to Work Together to Reduce Greenhouse Gas Emissions from Vehicle Fuels*, Jan. 5, 2009, http://www.mass.gov/?pageID=eoeeapressrelease&L=1&L0=Home&sid=Eoeea&b=pressrelease&f=090105_pr_lcfs&csid=Eoeea. These 11 states are Connecticut, Delaware, Maine, Maryland, Massachusetts, New York, New Hampshire, New Jersey, Pennsylvania, Rhode Island, and Vermont.

[70] California Office of the Governor, *White Paper: The Role of a Low Carbon Fuel Standard in Reducing Greenhouse Gas Emissions and Protecting Our Economy,* Jan. 8, 2007, http://gov.ca.gov/index.php?/fact-sheet/5155/.

[71] *Id.*

- Produce E10 (up to 10 percent ethanol, 90 percent gasoline) or E85 (up to 85 percent ethanol, 15 percent gasoline);
- Switch to "low-carbon ethanol";
- Buy credits from people who use electric vehicles, hydrogen-powered cars, compressed natural gas, or other biomass-based fuels;
- Employ "future strategies to be developed by fuel providers and outside innovators."

None of California's suggested strategies, however, work on a commercial scale at a reasonable price. When California started developing their low-carbon fuel standard two years ago, it was not clear if ethanol had higher or lower carbon dioxide emissions than petroleum. As noted above, recent science argues that ethanol production causes more carbon dioxide emissions than petroleum production. Therefore, California's strategies of using E10 or E85 will not achieve their goal of reducing carbon dioxide emissions. And the government knows it.

Alternatively, California suggests that fuel producers can "switch to low-carbon ethanol," which is made of cellulosic materials (the non-edible parts of plants, woods, and grasses). The problem with that strategy is, once again, the technology does not exist to make ethanol from cellulosic material at a commercial scale for a reasonable price. The absence of cost-effective technology has not been caused by a lack of trying. The first attempt at commercial cellulosic ethanol production occurred in Germany in 1898, and there were two cellulosic plants operating in the southeastern United States during World War I.[72]

One option for achieving California's low-carbon fuel mandate is for fuel producers to buy credits from people who drive electric cars. But this assumes a large number of people will drive electric cars. Electric cars have long history; the first crude electric carriage was invented in the 1830s.[73] Despite this long history, however, electric cars are niche products. One of the few electric cars produced today is the $109,000 Tesla Roadster.[74] Not enough people are able to spend $109,000 on a car to generate sufficient credits to make a low-carbon fuel standard work.

Car companies have been reluctant to build purely electric vehicles because there are serious limitations in the distance the car can travel on a single charge. Prototypes like the Chevy Volt are attempting to overcome these challenges. But General Motors has not yet produced the

[72] U.S. Department of Energy, *Dilute Acid Hydrolysis*, Mar. 15, 2007, http://www1.eere.energy.gov/biomass/printable_versions/dilute_acid.html.
[73] The History of Electric Vehicles, About.com, http://inventors.about.com/library/weekly/aacarselectrica.htm.
[74] Liane Yvkoff, *Tesla Motors: We're not dead yet*, CNET NEWS, GREEN TECH, Feb. 13, 2009, http://news.cnet.com/8301-11128_3-10163655-54.html.

Volt and, when it does, the Volt will not likely be profitable for GM,[75] even though a Volt will likely cost $40,000.[76]

Only time will tell if many people will drive electric cars, but it is folly for the success of a program like a low-carbon fuel standard to rely on what is a currently unprofitable niche product like electric cars.

Hydrogen power cars are a possible way to meet the low-carbon fuel standard, but so far hydrogen is very expensive to produce and car companies have not overcome the technical challenges of cost-effectively producing hydrogen-fueled cars. Compressed natural gas cars are also possible, but they are expensive because they require costly tanks.

Complying with California's low-carbon fuel standard will be difficult. The possible methods of complying with the standard rely on expensive or commercially unavailable technologies for producing low-carbon fuels. As a result, low-carbon fuel mandates are nothing but new taxes, because fuel providers will have to buy credits from somewhere in order to remain in compliance.

One thing that is clear about low-carbon fuels mandates is that they discriminate against stable North American sources of energy. The United States gets more oil from Canada than from any other foreign country,[77] and much of Canada's oil production comes from oil sands. Yet an LCFS discriminates against oil production from Canada and favors Middle Eastern oil because the production of oil from oil sands requires more energy (and thus carbon dioxide emissions) than the production of light, sweet crude in the Middle East.

Low-carbon mandates also discriminate against coal-to-liquids technology and oil shale technologies because these require more energy to produce than oil production in the Middle East. But the United States has vast reserves of coal and oil shale. These sources are not yet economically competitive with other sources of oil, but if prices were to return to 2008's highs, the technologies could be cost-competitive.

Discriminating against oil shale and coal-to-liquids technology limits access to incredibly vast domestic sources of energy. The United States has the world's largest reserves of coal.[78] At

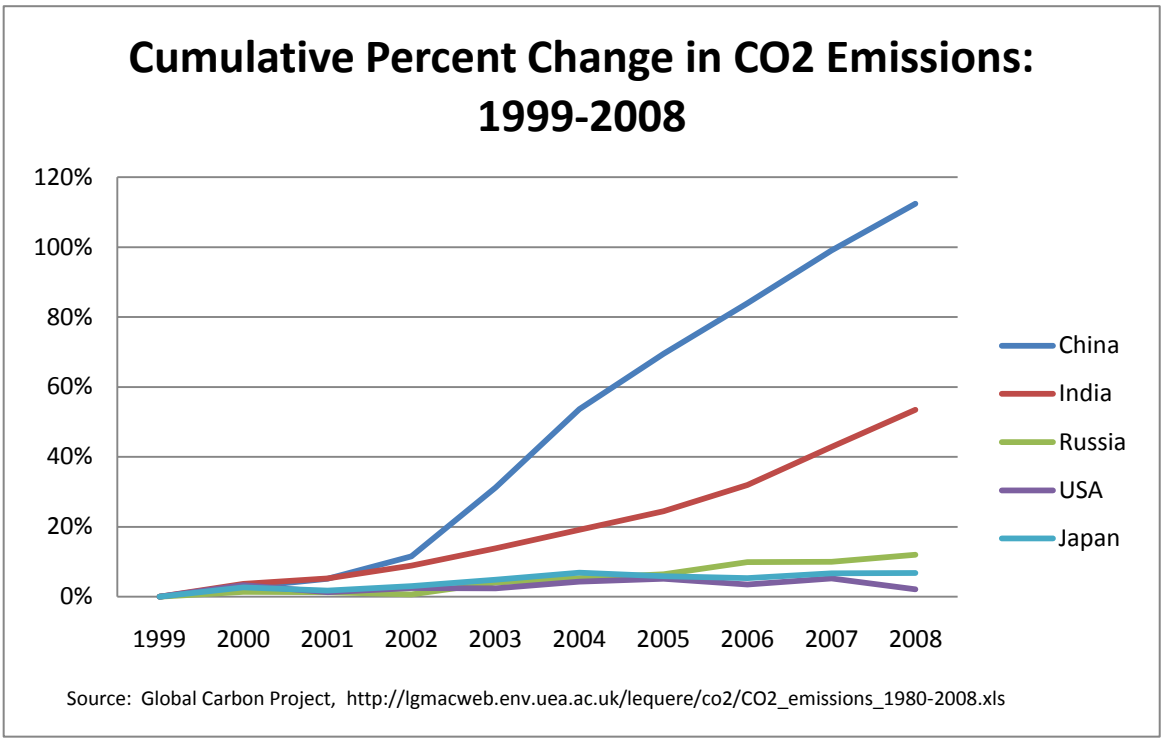
[75] Alex Taylor III, *Will the Chevy Volt Save the world? Fortune*, Sept. 23, 2008, http://money.cnn.com/2008/09/22/news/companies/taylor_volt.fortune/index.htm.
[76] Mike Connor, *Could the EPA cripple the Chevy Volt*, Motor Trend, Sept. 5, 2008, http://blogs.motortrend.com/6293345/government/could-the-epa-cripple-the-chevy-volt/index.html.
[77] Energy Information Administration, *Crude Oil and Total Petroleum Imports Top 15 Countries*, Dec. 30, 2009, http://www.eia.doe.gov/pub/oil_gas/petroleum/data_publications/company_level_imports/current/import.html.
[78] Energy Information Administration, *Coal Explained: How Much Coal is Left*, July 15, 2009, http://tonto.eia.doe.gov/energyexplained/index.cfm?page=coal_reserves.

current usage rates, the United States has 200–250 years of demonstrated coal reserves.[79] Coal-to-liquids could give the United States much larger reserves of petroleum fuels. The United States also has massive reserves of oil locked in oil shale—at least 800 billion recoverable barrels of oil.[80] This is nearly three times as much oil as Saudi Arabia has in its proven reserves.

As for the environmental benefit of these low-carbon fuel standards, there is little to none. Global warming is, as we know, global. Unilateral changes by the United States cannot, by themselves, have the kind of impact needed to fundamentally change the earth's climate, especially if the reductions in carbon dioxide are very small and limited to a single sector.

This is especially true when one considers that developing countries have dramatically increased their carbon dioxide emissions while the United States is producing a smaller and smaller share of total greenhouse gas emissions.[81] For example, according to data from the Global Carbon Project, global carbon dioxide emissions increased 32 percent from 1999 through 2008,[82] U.S. carbon dioxide emissions only increased 2 percent. During that period, China's carbon dioxide emissions increased 112 percent, India's increased 53 percent, and Russia's increased 12 percent. Even Japan, the country in which the Kyoto Protocol was signed saw its carbon dioxide emissions increase nearly 7 percent. [83]

[79] Energy Information Administration, International Energy Outlook p. 59, (May 2009), http://www.eia.doe.gov/oiaf/ieo/pdf/0484%282009%29.pdf.
[80] Task Force of Strategic Unconventional Fuels, *Development of America's Strategic Unconventional Fuel Resources* p. 5, Sept. 2006, http://www.fossil.energy.gov/programs/reserves/npr/publications/sec369h_report_epact.pdf.
[81] According to the Global Carbon project in 2007, China emitted 21 percent of the world's carbon equivalent and the U.S. emitted 19 percent.
[82] Global Carbon Project, *CO2 emissions from fossil fuels and cement*, (Oct. 2009), http://lgmacweb.env.uea.ac.uk/lequere/co2/CO2_emissions_1980-2008.xls.
[83] Global Carbon Project, *CO2 emissions from fossil fuels and cement*, (Oct. 2009) http://lgmacweb.env.uea.ac.uk/lequere/co2/CO2_emissions_1980-2008.xls.



Because of these increases from developed and developing countries, unilateral actions by the United States will have little to no effect on the global climate. For example, if the United States somehow complied with a nationwide LCFS of 10 percent today, the American reduction in emissions would be offset by emissions increases from the rest of the world in just over 68 days.[84] Obviously, actions taken by California or 11 Northeastern states would have even less impact.

In sum, the technology to implement an LCFS does not currently exist. But were an LCFS to be imposed, either nationwide or at the state level, it would damage the U.S. economy without having a meaningful or measureable impact on global temperatures. Worse still, an LCFS would favor Middle Eastern oil over Canadian and domestic fuels. Were such an LCFS to result in increased biofuel use, it would further increase the cost of food, harming the world's poor economically and, as we have already seen, even many American families.

[84] Calculated using the emissions data from the Global Carbon Project. *CO2 emissions from fossil fuels and cement*, (Oct. 2009) http://lgmacweb.env.uea.ac.uk/lequere/co2/CO2_emissions_1980-2008.xls. According to EPA, the GHG emissions from the transportation sector total 28 percent of total U.S. emissions in 2006. Environmental Protection Agency, *Regulating Greenhouse Gas Emissions Under the Clean Air Act; Proposed Rule*, 73 Fed. Reg. 44354, 44403 (July, 30, 2008). Twenty-eight percent of the U.S.'s 2006 carbon dioxide emissions are 439,266 MtC. A nationwide LCFS for the entire transportation sector, if it followed California's example, would reduce transportation emissions by 10 percent, or 43,927 MtC per year. This decade, the world's carbon dioxide emissions increased by an average of 234,000 MtC per year. At this rate of change, the 10 percent LCFS-forced reduction in U.S. transportation emissions would be replaced in the atmosphere in just over 68 days by the increase in emissions from the rest of the world.

California's Greenhouse-Gas Emission Mandates for Automobiles

Reducing the amount of carbon dioxide emissions associated with fuel, as low-carbon fuel mandates attempt to do, is one way to reduce carbon dioxide emissions from motor vehicles. Another way is to regulate the fuel economy of the vehicles themselves. In 2002, California passed A.B. 1493 requiring the California Air Resources Board to regulate the greenhouse gas emissions from motor vehicles.[85] Because the technology does not exist to capture carbon dioxide emissions from the combustion of fossil fuels in motor vehicles, the regulation of greenhouse gas emissions from motor vehicles is *de facto* a fuel-economy regulation. As the *New York Times* reported:

> [California's plan] would require manufacturers to start reducing carbon dioxide emissions in the 2009 model year with the aim of achieving a 30 percent reduction by 2015. Since carbon dioxide and other gases linked to global warming cannot be filtered in the same way that catalytic converters filter out harmful smog-forming particles, the only way to cut global warming emissions is to reduce fuel use. That means making more fuel-efficient cars.[86]

California regulators are careful to claim that they want to regulate greenhouse gas emissions instead of setting fuel economy standards. That is because federal law prohibits the states from regulating fuel economy.[87] The Clean Air Act, however, permits California to promulgate California-specific motor vehicle pollution standards if California receives a waiver from the Environmental Protection Agency (EPA). During the Bush Administration, California petitioned EPA for a waiver, but EPA denied the waiver based on the fact that greenhouse gas levels, unlike smog and regional pollution, is a global issue not a regional issue that uniquely impacts California.[88]

EPA also denied the waiver because Congress had recently increased fuel-economy standards for automobiles in the Energy Independence and Security Act of 2007 (EISA). This law increased

[85] Cal. Health & Safety Code § 43018.5.
[86] N.Y. Times, *California Leads on Warming*¸ June 15, 2004, http://query.nytimes.com/gst/fullpage.html?res=9906E0DF1130F936A25755C0A9629C8B63.
[87] 49 U.S.C. § 32919(a).
[88] *See* EPA, *America Receives a National Solution for Vehicle Greenhouse Gas Emissions*, press release, Dec. 19, 2007, http://yosemite.epa.gov/opa/admpress.nsf/d0cf6618525a9efb85257359003fb69d/ 41b4663d8d3807c5852573b6008141e5!OpenDocument.

fleet-wide fuel economy standards to 35 miles per gallon by 2020.[89] The proposed federal fuel economy regulations in EISA were actually higher than California's proposal.[90]

After President Obama was inaugurated, California re-petitioned EPA, hoping a change in administration would yield a different result. It did. In June, the Obama EPA granted the waiver for California to create its own carbon dioxide regulations for automobiles.[91]

Not only does California want to regulate automobile fuel economy, but a number of states are poised to adopt California's regulations. Oregon, Washington, Arizona, New Mexico, Maryland, New Jersey, New York, Vermont, Connecticut, Massachusetts, Rhode Island, and Maine are all poised to follow suit.[92] These states represent over 40 percent of all car sales in the United States.[93]

At the same time as granting California's waiver, the Obama Administration also announced new federal fuel economy standards, pushing forward the previous standards by four years. Previously, Congress required average fuel economy of 35 mpg by 2020, but the new standards require average fuel economy of 35.5 by 2016.[94] Not only will automakers have to comply with the new federal standards, but automakers who sell cars in California, and the states which follow California's automobile regulations, will also have to comply with California's standards as well.[95]

Needless to say, the difficulty and expense involved in complying with California's (and the new federal) greenhouse gas regulations for vehicles will be a tremendous burden on American automobile manufacturers. According to the California Air Resources Board, it will cost $1050 per car,[96] but this estimate is undoubtedly low.[97] The carmakers, for example, estimate the

[89] Pub. L. No. 110-140, 121 Stat. 1492 (2007) § 101(b)(2)(A).
[90] *See* National Automobile Dealers Association, Patchwork Proven, p. 9, http://www.nada.org/NR/rdonlyres/DBCC625E-2E8E-4291-8B23-B94C92AFF7C4/0/patchworkproven.pdf.
[91] Environmental Protection Agency, *EPA Grants California GHG Waiver*, press release, June 6, 2009, http://bit.ly/2UAtjG.
[92] *See* National Automobile Dealers Association, Patchwork Proven, p. 32–34, http://www.nada.org/NR/rdonlyres/DBCC625E-2E8E-4291-8B23-B94C92AFF7C4/0/patchworkproven.pdf.
[93] *Id.* at 3.
[94] The White House: Office of the Press Secretary*, President Obama Announces National Fuel Efficiency Policy*, May 19, 2009, http://www.whitehouse.gov/the_press_office/President-Obama-Announces-National-Fuel-Efficiency-Policy/.
[95] California's "Clean Car Standards" are available here: http://www.arb.ca.gov/cc/ccms/ccms.htm.
[96] California Air Resources Board, *ARB Approves Greenhouse Gas Rule*, Sept. 24, 2004, http://www.arb.ca.gov/newsrel/nr092404.htm.
[97] The California Air Resources Board has a bad track record on economic analysis. For example, the Air Resources Board Economic Analysis of actions under the Global Warming Solutions Act was so deficient, Robert Stavins the Director of Harvard's Environmental Economics Program and supporter of a cap-and-trade generally was moved to state: "I have come to the inescapable conclusion that the economic analysis is terribly deficient in critical ways

regulations will increase the cost of a new car by $3000, and not all cars would be upgraded, especially larger ones.[98]

While California's regulation of carbon dioxide emissions would amount to a tax of $1000 to $3000 per car, it would have an undetectable environmental impact. If every car and truck currently on the road complied and became almost 30 percent more fuel efficient over night (in other words, if every car and truck suddenly complied with California's regulation today), U.S. total greenhouse gas emissions would decrease by five percent overnight.[99] But these greenhouse gas emissions would be quickly replaced by increases from the rest of the world. Emissions from the rest of the world are increasing so dramatically that a five percent reduction in total greenhouse gas emissions from the United States would be replaced by emissions increases from the rest of the world in only 134 days, rendering the U.S. reduction climatically meaningless.[100]However, the 5 percent reduction could not occur overnight. It would happen gradually beginning in 2016 when the federal standard goes into effect and as drivers replace their vehicles, which on average are kept on the road for 10 years.

These are not the only problems with California's potential automobile fuel economy standards. If imposed, California's regulations would create a regulatory patchwork of state and federal fuel economy regimes.[101] Cars would be regulated by a federal standard and then by a

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and should not be used by the state government or the public for the purpose of assessing the likely costs of CARB's plans." Debra Kahn, *EDF tells California to ignore economists' criticism of its climate plan*, CLIMATEWIRE, Dec. 8, 2008.

[98] E.J. Schultz, *California sues feds over emissions,* Fresno Bee, Nov. 9, 2007, http://www.fresnobee.com/local/politics/story/187080.html.

[99] According to the Energy Information Administration report *Emissions of Greenhouse Gases in the United States 2007*, http://www.eia.doe.gov/oiaf/1605/ggrpt/pdf/0573(2007).pdf p. 5, U.S. transportation emissions account for 28 percent of total U.S. carbon dioxide emissions. According to p. 19 of the same report, motor gasoline accounts for 59% of the total U.S. transportation emissions. The California regulations will reduce greenhouse gas emissions from cars and light trucks by about 30 percent. *See* California Air Resources Board, *ARB Approves Greenhouse Gas Rule*, Sept. 24, 2004, http://www.arb.ca.gov/newsrel/nr092404.htm. Thirty percent of 59 percent of 28 percent is 5 percent of the total.

[100] Calculated using the emissions data from the Global Carbon Project. *CO2 emissions from fossil fuels and cement*, (Oct. 2009) http://lgmacweb.env.uea.ac.uk/lequere/co2/CO2_emissions_1980-2008.xls. According to EIA, the GHG emissions from the transportation sector total 28% of total U.S. emissions in 2007. Twenty-eight percent of the U.S.'s 2007 carbon dioxide emissions are 446,568 MtC. The burning of motor gasoline accounts for 59% of the total transportation emissions. Fifty-nine percent of 446,568 MtC is 263,475 MtC. California's regulations would reduce this amount by 30% or 79,042 MtC. This decade, the world's carbon dioxide emissions increased by an average of 234,000 MtC per year. At this rate of change, the reductions brought about by applying California's regulation to the entire transportation system today would be replaced in 123 days by the increase in emissions from the rest of the world.

[101] *See* National Automobile Dealers Association, *Patchwork Proven*, http://www.nada.org/NR/rdonlyres/DBCC625E-2E8E-4291-8B23-B94C92AFF7C4/0/patchworkproven.pdf.

separate state standard.[102] Worse, vehicles delivered for sale might meet the federal standard but not the individual state standard in the markets in which they're sold. That is because the mix of cars is different in each state. Trucks, for example, are more popular in states like Arizona than in Rhode Island. California's standard would depend on the particular mix of vehicles delivered for sale in that particular state, regardless of whether they met the federal standard or the standards in other states. This means it will be hard for car makers to meet the standards in Arizona because consumers use more trucks there. One possibility is that car makers will deal with these regulatory and cost increases by limiting consumers' automobile choices.

This example again shows the problems with energy regulation at the state level. California is asking the EPA to allow it to impose what amounts to a tax of somewhere between $1000 and $3000 per car. The environmental benefit, in return, would be negligible. Because of these problems, there is some pushback in certain states. Arizona's new governor has moved to stop the state from implementing the California greenhouse gas regulations for cars in Arizona.[103]

STATE ENERGY EFFICIENCY REGULATIONS

States have recently become more involved in regulating energy efficiency standards. Their biggest efforts to date deal with regulating the energy efficiency of buildings or imposing "Green Building" standards.

Green Buildings

Thirty-eight states have requirements that new state government buildings must meet certain energy efficiency standards. Many states—such as Arizona, California, Hawaii, Indiana, and others—require that state government buildings meet LEED, Energy Star, Green Globes, or some other Green Building standard.

LEED is short for Leadership in Energy and Environmental Design, developed by the U.S. Green Building Council. LEED certification is awarded on a points system that does not require actual, measurable improvements to energy efficiency. According to an environmentalist critical of the

[102] Usually, the federal standards would predominate, but in this case there would be both a federal standard and a state standard. *See* National Automobile Dealers Association, *Patchwork Proven*, http://www.nada.org/NR/rdonlyres/DBCC625E-2E8E-4291-8B23-B94C92AFF7C4/0/patchworkproven.pdf.
[103] Howard Fischer, *Brewer may block Napolitano's air rules*, AZ Central.com, Feb. 12, 2009, http://www.azcentral.com/business/abg/articles/2009/02/12/20090212abg-airquality0212.html.

LEED system, "Installing a $395 bike rack is worth the same under the LEED checklist system as installing a $1.3 million environmentally sensitive heating system."[104]

As a result of the way the LEED system works, LEED certified buildings do not necessarily translate into actual improvements in energy efficiency. In 2005, Washington State passed legislation requiring all new schools to be LEED certified. At the time, proponents of this regulation claimed it would save schools 30 to 50 percent a year in energy costs.[105] But these energy savings have not occurred.

Washington built several pilot schools to test the effectiveness of their strategies. But an analysis of Washington's green school program shows:[106]

- Green schools are not the most energy-efficient in the school district.
- Green schools are not 30 percent more energy efficient than comparable schools as asserted by the proponents of green buildings.
- Green schools are more costly than "nongreen" buildings.

Energy efficiency is a legitimate concern for state officials when it comes to the construction and maintenance of taxpayer-owned buildings. But energy efficiency programs should be based on achieving real results, not merely satisfying a checklist, as is permissible with the LEED program.

Appliance and Equipment Standards

A number of states have implemented efficiency mandates for appliances and electrical equipment. In 2005, New York passed a law requiring energy efficiency performance standards for commercial washing machines, torchiere lighting fixtures, icemakers, commercial refrigerators, ceiling fans, and other equipment.[107] Currently, 11 states have their own appliance and equipment energy efficiency standards that surpass federal law.

Energy efficiency mandates are based on the premise that Americans consumers do not make wise choices about energy efficiency without the government forcing them to make "good" choices. It is a dubious claim. Consumers pay attention to their electric bill, and that is especially the case with commercial users of appliances.

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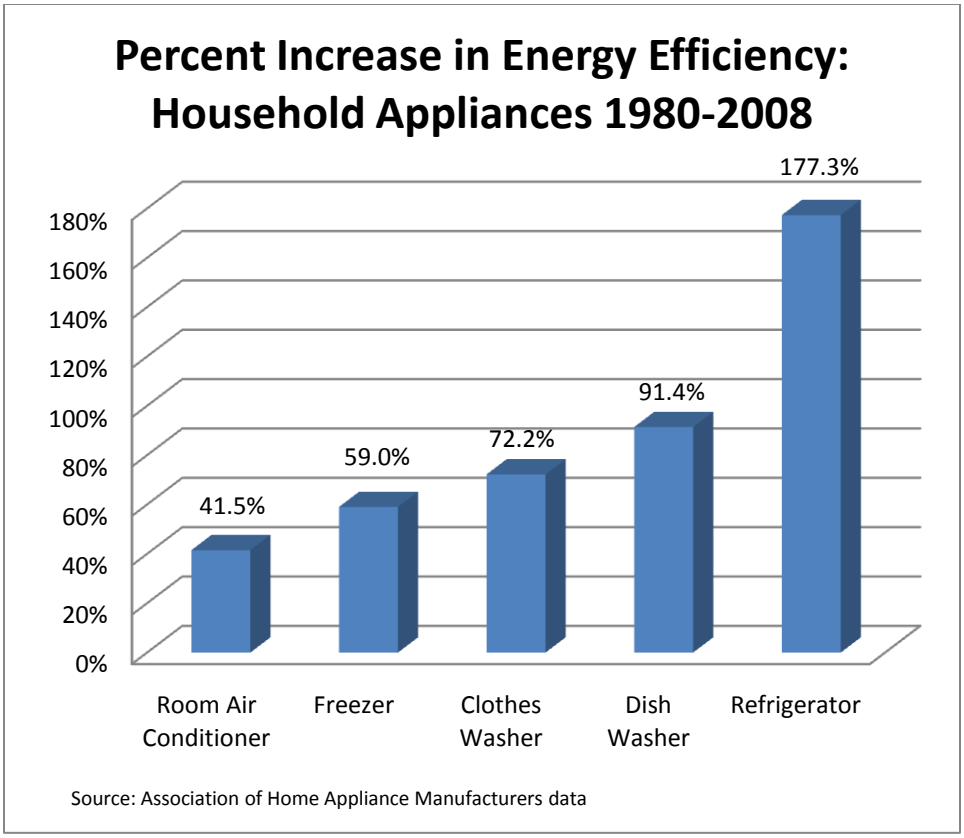
[104] Daniel Brook, *It's Way Too Easy Being Green*, SLATE, Dec. 26, 2007, http://www.slate.com/id/2180862.
[105] Todd Myers, *Green Schools Don't Make the Grade*, National Center for Policy Analysis: Brief Analysis, Aug. 5, 2008, http://www.ncpa.org/pub/ba/ba622/.
[106] *Id.*
[107] New York State Department of Environmental Conservation, *Law Signed to Improve Energy Efficiency of* Appliances and Electronics, Sept. 2005, http://www.dec.ny.gov/environmentdec/19124.html.

Mandating greater energy efficient makes the appliances and equipment more expensive. In 2006, the *Consumer Reports* Best Buy for top-load washing machines only cost $380.[108] That was before the federal energy efficiency mandate for washing machines. In 2007, when washing machines had to comply with the new energy efficiency mandate, *Consumer Reports* said that "we can't call any washer a Best Buy because models that did a very good job getting laundry clean cost $1,000 or more."[109]

Since then, washing machines have improved—but the energy efficiency mandates still make them more expensive than they would otherwise be. The least expensive washing machine Consumer Reports recommends still costs $480[110] and the next lowest-priced recommended washing machine costs $650.[111] If a consumer saves $15 a year[112] in energy costs by using one of these more efficient washers, it takes nearly 5 years to recoup the extra costs of the $480 model and over 16 years to recoup the extra cost of the $650 model (even adjusting for inflation from 2006 to 2010).[113]

Federal officials who desire to mandate energy efficiency standards apparently assume that households and businesses are not making smart choices about energy efficient appliances. This is not borne out by actual data. According to data from the Association of Home Appliance Manufactures, household appliances are becoming much more efficient. Between 1980 and 2008, air conditioners became 41.5 percent more energy efficient, dishwashers became almost twice as energy efficient, and refrigerators became nearly three times as energy efficient.[114] The graph below shows the percent improvement in energy efficiency of standard household appliances:

[108] Consumer Reports, *Washers & Dryers: Savings at a Price*, Mar. 2006 p. 44.
[109] *Consumer Reports Annual Buying Guide*, Jan. 1, 2008, available at http://www.accessmylibrary.com/coms2/summary_0286-34226514_ITM.
[110] Consumer Reports, *Washers & Dryers*, Feb. 2010 p. 47. The model is a GE WJRE5500G.
[111] *Id.* at 46. The model is a Frigidaire Gallery GLTF2940F.
[112] In 2009, *Consumer Reports* noted online, in subscriber only section of their website, that "Each improvement in energy-efficiency scores, from good to very good, for instance, cuts an average of $10 to $20 from your annual energy expenditures." The 2010 washing machines are rated at "Very Good" for energy efficiency, while the 2006 washer was rated as "Good" on energy efficiency.
[113] According to the Bureau of Labor Statistics Inflation Calculator, $380 in 2006 dollars is $409 in 2010. http://data.bls.gov/cgi-bin/cpicalc.pl.
[114] Data from the Association of Home Appliance Manufactures, cited by Mark J. Perry at http://mjperry.blogspot.com/2009/10/chart-above-shows-significant-increases.html.



Americans are intimately aware of the costs of their utility bills and are always looking for ways to balance the convenience of their appliances with energy savings. When federal regulators step in and mandate energy efficiency improvements, the mandate increases the price of appliances and limits Americans' choices. Actual data shows that appliances are becoming more energy efficient over time without new regulations and mandates.

Electricity Revenue Decoupling

Another way some states are trying to mandate energy efficiency is through electric revenue decoupling. Electric revenue decoupling is a fundamental change in the way electric (and sometimes natural gas) utilities earn profits. Currently, most state regulatory commissions grant electric utilities territorial monopolies. The commissions allow utility companies to recover no more than their prudently incurred costs and a "fair" percentage of profits for investors. The percentage limit means that utilities can earn more dollars of profit only if they invest more heavily in generation and transmission. The regulatory system thus gives electricity providers an incentive to sell as much electricity as they can.

California introduced decoupling in 1983, and a handful of other states have since joined. Traditionally, electricity utilities make more money when they sell more electricity. Thus, if a

utility's conservation programs are successful, it might no longer earn its allowed profit because it would sell less electricity. Decoupling rewards utilities for selling less electricity, by decoupling the utility's revenue from its sale of electricity. Under decoupling, the company can generate the same profits without generating and selling as much electricity.

But decoupling aggravates well-known defects in the existing regulatory system. For example, the implicit profit guarantees to companies have long posed problems in providing the proper incentives for utility companies to monitor their costs. If the government eliminates even more downside risk, it will provide shareholders with even surer returns and consumers with even higher electricity bills. Further inequities and perverse incentives abound. If decoupling raises rates per kilowatt-hour actually used, it decreases customers' motivation to conserve, as they continue to see their bills rise regardless of their efforts.

If federally mandated programs, such as discounts for politically favored industrial customers or mandatory protections for migrating animals, impose costs or cuts revenues, state regulators will not be able to question the utility's rights to recovery. In some areas, utilities already incur substantial costs for activities that bear little relation to the production and distribution of power.

California includes numerous adjustment and balancing provisions in Pacific Gas & Electric's (PG&E's) bills to its customers. These include a "Public Purpose Programs Revenue Adjustment Mechanism" for low-income relief, as well as some research activities and expenses on renewables. The state also allows "California Alternative Rates for Energy" (another low-income program), a "Procurement Energy Efficiency Revenue Adjustment Mechanism," a "Distribution Revenue Adjustment Mechanism" (with an allowance for franchise fees and uncollectibles), and a "Utility Generation Balancing Account." These and other provisions will add $323 million to PG&E's approximately $9 billion of electricity bills in 2009.[115] With decoupling, an imaginative state legislature might invent many more programs for which ratepayers will have to pay, even if their state's regulators object.

Decoupling rests on the false assumption that consumers use too much electricity and cannot figure out their own ways to conserve. As anyone who has turned off a lamp or put on a sweater knows, consumers who want to conserve or save money on electricity have a variety options. This policy is a perfect illustration of unnecessary government intrusion into both the marketplace and people's homes.

[115] California Public Utilities Commission, Resolution E-4217. Pacific Gas and Electric Company, (Dec. 18, 2008) http://docs.cpuc.ca.gov/PUBLISHED/FINAL_RESOLUTION/95628.htm.

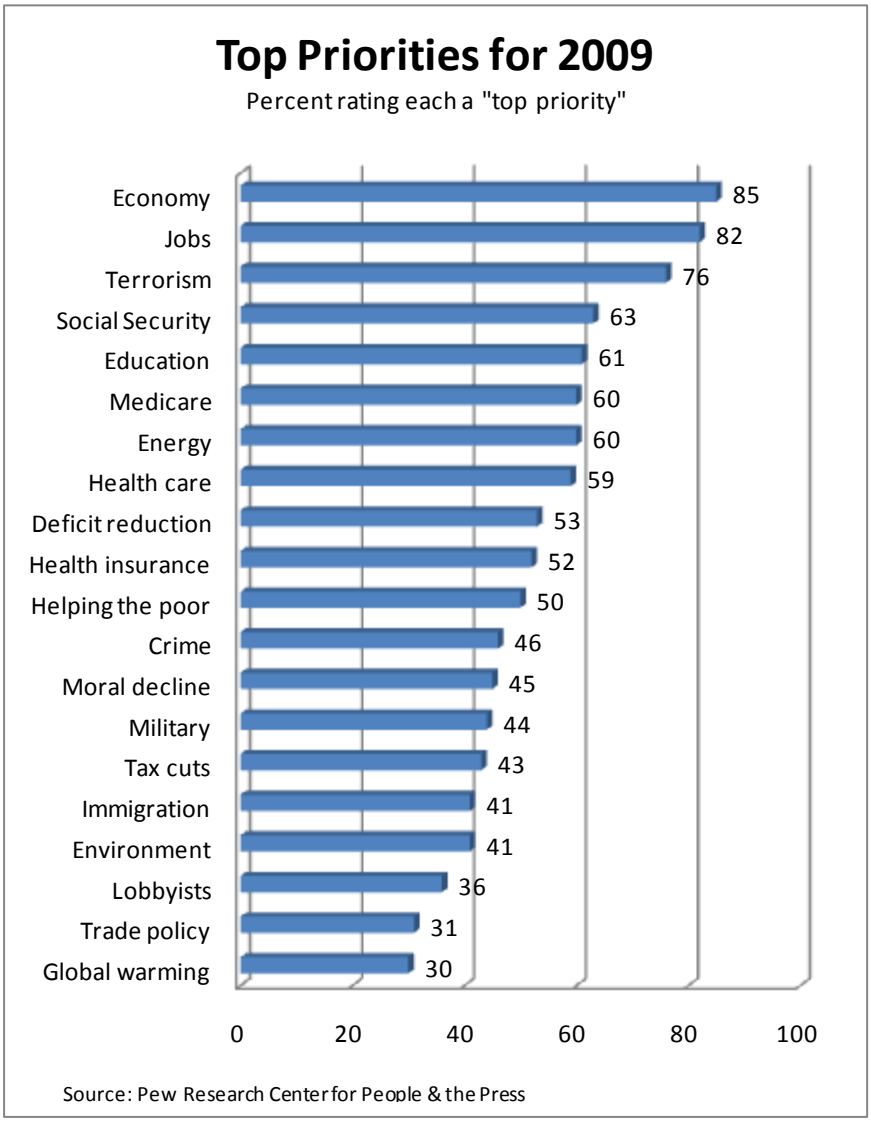
CONCLUSION

Energy is the lifeblood of the modern American economy. In these difficult economic times, it is critical that we do not unnecessarily and artificially increase the cost of energy and bring undue economic harm on the millions of Americans whose lives and livelihoods are inextricably tied to it. Unfortunately, as this report chronicles, states are implementing many new and expensive regulations that will increase the price of energy and increase the price of products that use energy—from automobiles and appliances, to buildings and light bulbs.

Not only will citizens face higher energy costs under this regime, but they will have less control and freedom to use the energy they choose in the most efficient manner for their lives. Legislators and bureaucrats are moving to limit the types of energy we can use, our supply of energy, and the manner in which we can use that energy.

But when the public understands the costs of these programs, there is pushback against expensive and inefficient plans.

One reason for this is that people are far more concerned about the economy and jobs than about global warming. The chart at the right shows the percentage of people who consider each



of the items mentioned a "top priority."[116] Concern for the economy and concern over jobs are increasing, while concern about global warming is decreasing.

There is some good news at the state level. While California and a number of other states passed a "Global Warming Solutions Act," which gives the regulatory bodies of these states greater control over energy and the economy, other states have recently taken a more circumspect view of granting expansive regulatory powers to unelected bureaucrats. States such as Florida and Maryland are requiring greenhouse gas reduction plans to be brought to the state legislature for approval, instead of allowing the regulatory agencies to produce and implement the plans on their own.

But states are still doing a number of things that increase the price of energy. California and Washington State have *de facto* bans on coal-fired electricity in place right now. This increases the cost of electricity since coal is one of the most affordable ways to produce electricity.

A number of states have joined together in regional initiatives designed to reduce greenhouse gases, but we have yet to see any real outcomes from pacts other than the Regional Greenhouse Gas Initiative in the northeastern United States. Even there, the cap on carbon dioxide emissions for electricity producers is higher than actual emissions, meaning that the cap will likely not affect emissions. That also means the cap will have only a modest effect on prices. Politicians, even in the Northeast, do not want to cause identifiable increases in energy prices as a result of climate regulations.

A troubling development is that a large number of states have imposed renewable portfolio standards on their citizenry. As a result of the electricity generation mix, as well as these and other short-sighted policies, electricity prices are 39 percent higher for electricity ratepayers in states with binding renewable portfolio standards. Naturally, that has economic impacts, such as the "leakage" of jobs to states with lower electricity prices. To combat such impacts, states with binding renewable portfolio standards are asking Congress to bail them out of a bad decision by inflicting on their neighbors what they've been previously been inflicting only on themselves.

There is a growing trend to regulate carbon dioxide emissions from vehicles. In particular, states are pushing renewable fuel mandates and low-carbon fuel standards. Renewable fuel mandates increase the price of fuel *and* food by turning food into fuel. It is no surprise that many advocates for the world's poor have a strong dislike for renewable fuel mandates. Low-carbon fuel mandates also increase the price of gasoline, and they discriminate against future domestic and Canadian sources of petroleum in favor of the Middle Eastern oil.

[116] The Pew Research Center for the People & the Press, *Economy, Jobs Trump All Other Policy Priorities In 2009*, Jan. 22, 2009, http://people-press.org/report/485/economy-top-policy-priority.

California and a number of other states are attempting to implement new mandates on greenhouse gas emissions from vehicles. This amounts to a new tax of between $1000 and $3000 per new car, even though it will not achieve any noticeable environmental benefits.

States are also imposing energy efficiency mandates on their citizens in a number of other ways, including “Green Building” standards. Increasing energy efficiency is a laudable goal, but it should be measured by demonstrable progress. The saga of “Green Schools” in Washington State shows that good intentions do not always lead to good results. This is especially true when states mandate the use of a checklist system such as LEED, instead of working to make sure real, cost-effective, verifiable improvements occur.

Electric revenue decoupling is another plan that sounds like it could produce good results, but like so many other plans, it is ripe for political manipulation. Decoupling will result in higher rates for ratepayers while the utilities make the same or even greater profit. Nevertheless, there will likely be more decoupling regulation at the state level in the near future, owing to the fact that the federal “stimulus” bill includes provisions that push states to implement decoupling regulations.

A Way Forward

The only way we can stem the assault on affordable and reliable energy is to show the many ways regulations are increasing costs across the states and some of the harmful outcomes of these policies. When people understand that jobs and the economy are being threatened by ill-considered policies, the regulations will be altered to create less economic destruction. The experience with the Regional Greenhouse Gas Initiative in the Northeast is a good example. Politicians, even in the more regulation-friendly Northeast, do not want to harm the economy and or destroy jobs through expensive and environmentally ineffectual regulation.

Appendix 2 below provides state-by-state fact sheets that provide information about energy and energy prices in each state and detail some of the costly energy regulations at the state level.

Appendix 1: Renewable Portfolio Standards

Average Price of Electricity in States Without Binding Renewable Portfolio Standards in December 2009 (Prices in cents per kilowatt hour)				
State	**Residential**	**Commercial**	**Industrial**	**All Sectors**
Alabama	10.52	10.00	6.05	8.81
Arkansas	9.32	7.62	5.85	7.70
Florida	12.31	10.74	9.18	11.43
Georgia	10.04	8.89	6.13	8.76
Idaho	7.76	6.52	5.15	6.49
Indiana	9.29	8.16	5.72	7.48
Kansas*	9.6	7.97	6.17	8.07
Kentucky	8.31	7.58	4.89	6.5
Louisiana	8.24	7.86	5.26	7.16
Mississippi	10.14	9.51	6.59	8.83
Nebraska	8.48	7.32	5.69	7.16
North Dakota	7.59	6.79	5.9	6.81
Oklahoma	8.59	6.9	4.94	7.08
South Carolina	10.17	8.64	5.74	8.28
South Dakota	8.49	7.04	5.66	7.35
Tennessee	9.31	9.54	6.74	8.66
Utah	8.5	6.97	4.8	6.78
Virginia	10.61	8.1	6.87	8.95
West Virginia**	7.89	6.77	5.23	6.64
Wyoming	8.55	7.29	4.84	6.08
Average Price	**9.19**	**8.01**	**5.87**	**7.75**
*Kansas enacted an RPS in 2009, but will not administer it until 2010.				
**West Virginia enacted an RPS in 2009, but it allows alternative technologies including certain coal technologies and natural gas.				

Average Price of Electricity in States With a Binding Renewable Portfolio Standards in December 2009 (Prices in cents per kilowatt hour)				
State	**Residential**	**Commercial**	**Industrial**	**All Sectors**
Arizona	10.74	9.38	6.62	9.57
California	15.05	13.73	10.46	13.58
Colorado	10.01	8.24	6.31	8.36
Connecticut	20.36	16.68	16.81	18.21
Delaware	14.13	11.96	9.31	12.17
Illinois	11.25	8.31	7.53	9.13
Iowa	9.87	7.45	5.17	7.29
Maine	15.39	12.54	9.94	12.89
Maryland	15.04	11.98	9.91	13.11
Massachusetts	17.01	17.8	11.61	15.53
Michigan	11.82	9.61	7.17	9.68
Minnesota	9.98	7.87	6.28	8.13
Missouri	8.39	6.88	5.32	7.24
Montana	8.88	8.2	5.63	7.44
Nevada	12.85	10.61	7.96	10.35
New Hampshire	16.39	14.74	13.51	15.2
New Jersey	16.44	14.35	11.38	14.8
New Mexico	10.09	8.55	5.81	8.2
New York	17.8	15.4	9.71	15.66
North Carolina	9.94	7.92	5.93	8.43
Ohio	10.61	9.59	6.69	8.97
Oregon	8.75	7.74	5.58	7.63
Pennsylvania	11.66	9.56	7.17	9.6
Rhode Island	15.54	13.63	12.79	14.24
Texas	12.66	9.84	6.99	10.18
Washington	7.75	7.03	4.34	6.63
Wisconsin	11.91	9.5	6.7	9.35
Average Price	**12.60**	**10.71**	**8.25**	**10.80**
Difference in Electricity Prices in States with Binding RPS Compared to States Without Binding RPS				
Percent Higher	**37.1%**	**33.7%**	**40.5%**	**39.4%**
States with Special Circumstances				
Alaska	17.2	14.65	13.38	15.24
Hawaii	24.2	21.86	18.14	21.21
Vermont*	14.9	12.89	9.29	12.75
*Vermont has a unique hybrid RPS, so it is not included in either other group.				

Source: EIA, Electric Power Monthly, Table 5.6.B., Average Retail Price of Electricity, Dec. 2009, Released Mar. 15, 2010, http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html

Appendix Two: State Energy Fact Sheets

Energy Regulation in the States: A Wake-up Call provides an overview of important trends in energy regulations in the states. This appendix provides state-by-state energy fact-sheets that provide policymakers with data about energy in their individual states.

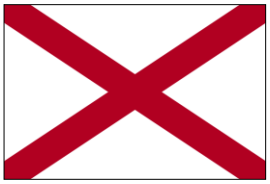
Energy prices are dependent on a number of factors, including regulations, the location of the state, and the mix of energy used in the state. The fact sheets include select economic and energy price data, data on the mix of electrical generation in the state, and a description of regulatory impediments to affordable energy. This section on regulation impediments includes both regulations that increase the price of energy and key regulations that increase the price of items that use energy such as automobiles, buildings, and appliances.

The section on regulatory impediments to affordable energy describes energy regulation using the following criteria:

- Does the state impose a cap on greenhouse gas emissions? Capping greenhouse gas emissions increases the price of using coal, oil, and natural gas because carbon dioxide is an unavoidable byproduct of the combustion of these fuels.
- Is the state a member of a regional agreement to cap greenhouse gas emissions, such as the Regional Greenhouse Gas Initiative in the northeastern United States?
- Has the state implemented a renewable electricity mandate? Twenty nine states have renewable electricity mandates, otherwise known as renewable electricity standards or renewable portfolio standards. These mandates increase discriminate against coal, most inexpensive source of electricity generation, and require states to generate or sell electricity from more expensive and inefficient sources of energy.
- Does the state require ethanol to be mixed with gasoline? Many states have renewable fuel requirements. Because gasoline is generally less expensive than ethanol, these mandates increase the price of gasoline at the pump.
- Is the state working to impose automobile fuel-economy standards? California has led a coalition of states to implement their own automobile fuel-economy standards. These economy standards will increase the price of automobiles.
- Does the state require new buildings to meet energy efficiency standards? Energy efficiency mandates increase the upfront costs of building construction. The building codes in some states require new buildings to meet energy efficiency standards such as the International Energy Conservation Code. Also, many states require state buildings to

meet certain “green building” certifications, such as the requirements of the U.S. Green Building Council.

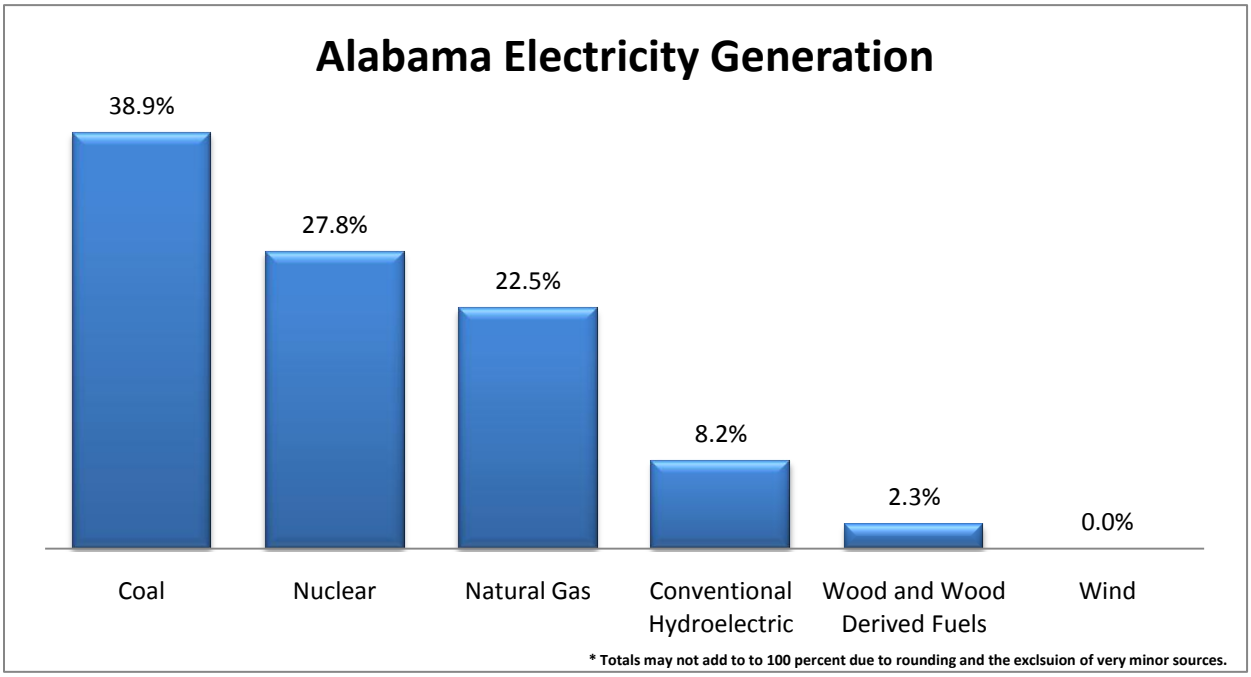
- Does the state impose state-based appliance efficiency standards? Appliance efficiency standards increase the upfront costs of appliances.
- Does the state allow utility “decoupling”? Some states try to promote energy efficiency by implementing utility decoupling. This “decouples” utility revenues from the amount of energy sold. Traditionally, utilities make more money by selling more of their products. But decoupling allows utilities to make money by selling less of their products. This means that consumers are paying more, but getting less energy.



Alabama Energy Facts

Alabama – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$29,411	7th lowest
Unemployment	11.1%	10th highest
Gasoline Price, per gallon	$2.71	13th lowest
Electricity Price, per kWh	8.81¢	25th highest

Alabama enjoys some of the most affordable gasoline prices in the country and has lower than average electricity prices. The state's gasoline prices are due in large measure to the state's many oil refineries and its proximity to the major oil producing and refining operations in the Gulf of Mexico. Almost forty percent of Alabama's electricity is generated from coal, most of which is shipped from Wyoming, Kentucky, and West Virginia. Alabama's two nuclear power plants provide more than a quarter of the state's electricity.



Alabama has substantial natural gas reserves as well as large coal deposits. The state also has significant hydroelectric potential and is one of the top hydroelectric-generating states east of the Rocky Mountains.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and

greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Alabama's regulatory environment that are likely to affect the cost of energy or the cost of using energy. Fortunately for the citizens of Alabama, the state has not imposed many of the regulations that other states have.

- **Alabama does not cap** greenhouse gas emissions.
- **Alabama is not a member** of a regional agreement to cap greenhouse gas emissions.
- **Alabama does not require** utilities to sell a certain percentage of electricity from renewable sources.
- **Alabama does not require** gasoline to be mixed with renewable fuels.
- **Alabama does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **Alabama does not require** new residential and commercial buildings to meet energy efficiency standards. New state government buildings, however, must meet the 2006 International Energy Conservation Code (IECC).[117] The IECC, developed by the International Code Council, is a model code that mandates certain energy efficiency standards.
- **Alabama does not impose** state-based appliance efficiency standards. However, all new or replacement equipment purchased by state agencies must be Energy Star certified, when cost effective.[118]
- **Alabama does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[†]Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

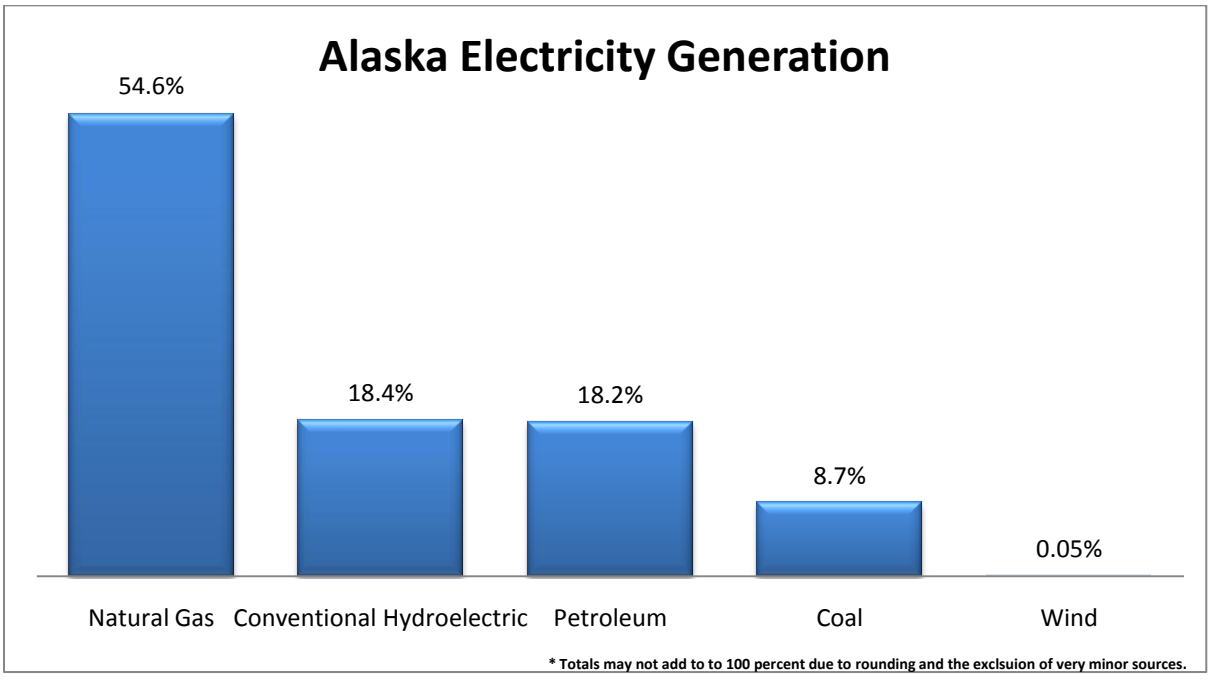
[117] Database of State Incentives for Renewables and Efficiency, Alabama State Energy Code for Buildings, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=AL03R&re=0&ee=1.

[118] Ala. Exec. Order No. 33 (May 10, 2006), http://www.governorpress.alabama.gov/pr/ex-33-2006-05-10.asp.

Alaska Energy Facts

Alaska – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$43,640	6th highest
Unemployment	8.5%	21st lowest
Gasoline Price, per gallon	$3.46	2nd highest
Electricity Price, per kWh	15.24¢	5th highest

Alaska has some of the highest electricity and gasoline prices in the country. This is not surprising because Alaska is large, remote, and sparsely populated. These factors lead to high transportation costs for both gasoline and electricity. Even though Alaska has vast coal reserves, natural gas produces the majority of the state's electricity. Alaska's rivers and mountains make it well-suited for hydropower, which produces nearly a fifth of Alaska's electricity. Alaska produces a higher percentage of its electricity from petroleum than almost any other state because many remote rural communities use diesel to generate electricity. Though Alaska is considered to have substantial wind energy potential, wind contributes minimally to the state's electricity supply currently.



Alaska is home to vast reserves of oil and natural gas. The state contains some of the largest oil fields in the country, including Prudhoe Bay, the largest conventional oil field in the United States. Excluding the federal offshore areas, Alaska is the country's second largest oil producer. The Trans-Alaska Pipeline can pump up to 2.1 million barrels of crude oil per day, more than

any other pipeline in the United States. Most of Alaska's natural gas is consumed in-state, though the state hosts the only liquefied natural gas (LNG) exporting terminal in the country, exporting LNG primarily to Japan. Alaska also has extremely large coal deposits.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Alaska's regulatory environment that are likely to affect the cost of energy or the cost of using energy. Alaska has thus far avoided many of the costly energy policies other states are implementing.

- **Alaska does not cap** greenhouse gas emissions.
- **Alaska is an observer** of the Western Climate Initiative (WCI), a regional agreement among some American governors and Canadian premiers to target greenhouse gas reductions. The central component of this agreement is the eventual enactment of a cap-and-trade scheme to reduce greenhouse gas emissions 15 percent below 2005 levels by 2020. As an observer of the WCI, Alaska would not be bound to agreements made by WCI members.
- **Alaska does not require** utilities to sell a certain percentage of electricity from renewable sources.
- **Alaska does not require** gasoline to be mixed with renewable fuels.
- **Alaska does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **Alaska requires** new residential and commercial buildings to meet energy efficiency standards. The state's Building Energy Efficiency Standards (BEES), which apply to both residential and commercial buildings, are based on the 2006 International Energy Conservation Code (IECC), with Alaskan amendments that require additional insulation in buildings in northern Alaska.[119] The IECC, developed by the International Code Council, is a model code that mandates certain energy efficiency standards.

[†]Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy

- **Alaska does not impose** state-based appliance efficiency standards.
- **Alaska does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

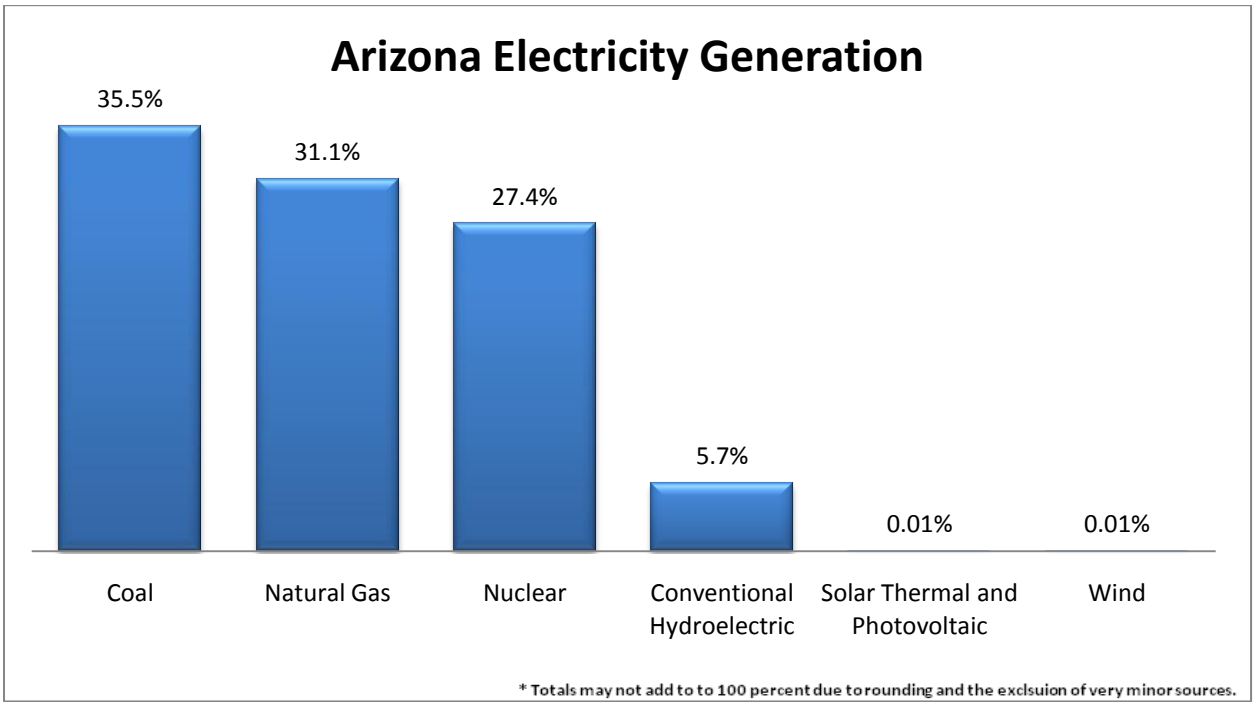
Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[119] Building Codes Assistance Project, Code Status: Alaska, http://bcap-energy.org/node/53.

Arizona Energy Facts

Arizona – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$32,343	13th lowest
Unemployment	9.5%	18th highest
Gasoline Price, per gallon	$2.85	16th highest
Electricity Price, per kWh	9.57¢	19th highest

Arizona has average energy prices. More than a third of the state's electricity is generated from coal, supplied from mines located in New Mexico and northern Arizona. Arizona's 3.87 gigawatt[120] Palo Verde Nuclear Generating Station is the country's highest capacity nuclear plant and the second-highest capacity power plant of any type. This single plant provides a quarter of Arizona's electricity. Palo Verde is the only nuclear generating facility in the world that is not located adjacent to a large body of above-ground water. Instead, it evaporates water from the treated sewage of several nearby municipalities to meet its cooling needs.



Arizona has substantial coal deposits. About two-thirds of the state's coal production goes to electricity production in-state, while the remaining one-third goes to electricity generation in Nevada. The Glen Canyon and Hoover Dams, located on the Colorado River in northern Arizona, provide some hydroelectric power. Arizona's large desert areas offer some of the highest solar

[120] Energy Information Administration, *Palo Verde Nuclear Generating Station, Arizona*, Sept. 10, 2009, http://www.eia.doe.gov/cneaf/nuclear/page/at_a_glance/reactors/palo_verde.html

power potential in the country, but solar energy currently makes a negligible contribution to the state's electricity supply.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Arizona's regulatory environment that are likely to affect the cost of energy or the cost of using energy. Arizona has enacted a number of programs that raise the price of energy, including surcharges[121] to fund renewables.

- **Arizona does not cap** greenhouse gas emissions. However, former Governor Janet Napolitano signed Executive Order 2006-13 in 2006, setting a greenhouse gas emissions goal of 2000 levels by 2020 and 50 percent below 2000 levels by 2040.[122]
- **Arizona is a member** of the Western Climate Initiative (WCI), a regional agreement among some American governors and Canadian premiers to target greenhouse gas reductions. The central component of this agreement is the eventual enactment of a cap-and-trade scheme to reduce greenhouse gas emissions 15 percent below 2005 levels by 2020.
- **Arizona requires** utilities to sell a certain percentage of electricity from renewable sources. The state's renewable portfolio standard mandates that 15 percent of retail

† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[121] Arizona Corporation Commission, *In the Matter of the Proposed Rulemaking for the Renewable Energy Standard and Tariff Rule*s, Docket No. RE-OOOOOC-05-0030, Decision No. 69127, 11, Line 19, http://images.edocket.azcc.gov/docketpdf/0000063561.pdf.

[122] Ariz. Exec. Order, No. 2006-13 (Sept. 7, 2006), http://www.azclimatechange.gov/download/EO_2006-13_090806.pdf.

electric load must be generated from renewable sources by 2025 and thereafter with 30 percent of the renewable energy derived from distributed renewable technologies.[123]

- **Arizona does not require** gasoline to be mixed with renewable fuels. However, the state requires motorists to use an oxygenated motor gasoline blend in the Tucson area during the winter and in the Phoenix metropolitan area year round.[124]
- **Arizona is working to implement** automobile fuel economy standards similar to California's, which would regulate greenhouse gas emissions from new vehicles. Executive Order 2006-13 coordinates the efforts of the Arizona Department of Environmental Quality with the Arizona Department of Transportation to adopt and implement California's vehicle emissions standards.[125]
- **Arizona does not require** new residential and commercial buildings to meet energy efficiency standards. However, state-owned and state-funded buildings must meet ASHRAE 90.1-1999. ASHRAE 90.1 is a model code that mandates certain energy efficiency standards and was developed by the American Society of Heating and Refrigeration and Air Conditioning Engineers. Former Governor Janet Napolitano issued Executive Order 2005-05, which requires Executive Branch agencies to implement a variety of standards in new state-funded buildings, to the extent possible.[126] These standards include meeting efficiency standards and acquiring at least ten percent of energy from renewable sources. The executive order also requires state-funded buildings to meet at least the silver LEED standard. The silver LEED standard is one level of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system. Arizona Revised Statute 34-451 also requires three departments to reduce energy consumption by 15 percent from 2002 levels by 2011.[127] Finally, Arizona Revised Statute 34-452 requires new state building projects over six thousand square feet to meet solar design standards.[128]
- **Arizona imposes** state-based appliance efficiency standards. These standards will affect portable electric spas, residential pool pumps, and residential pool pump motors, beginning in 2012.[129] In addition, all state department are to purchase products certified by Energy Star or the federal energy management program (FEMP), if cost effective.[130]

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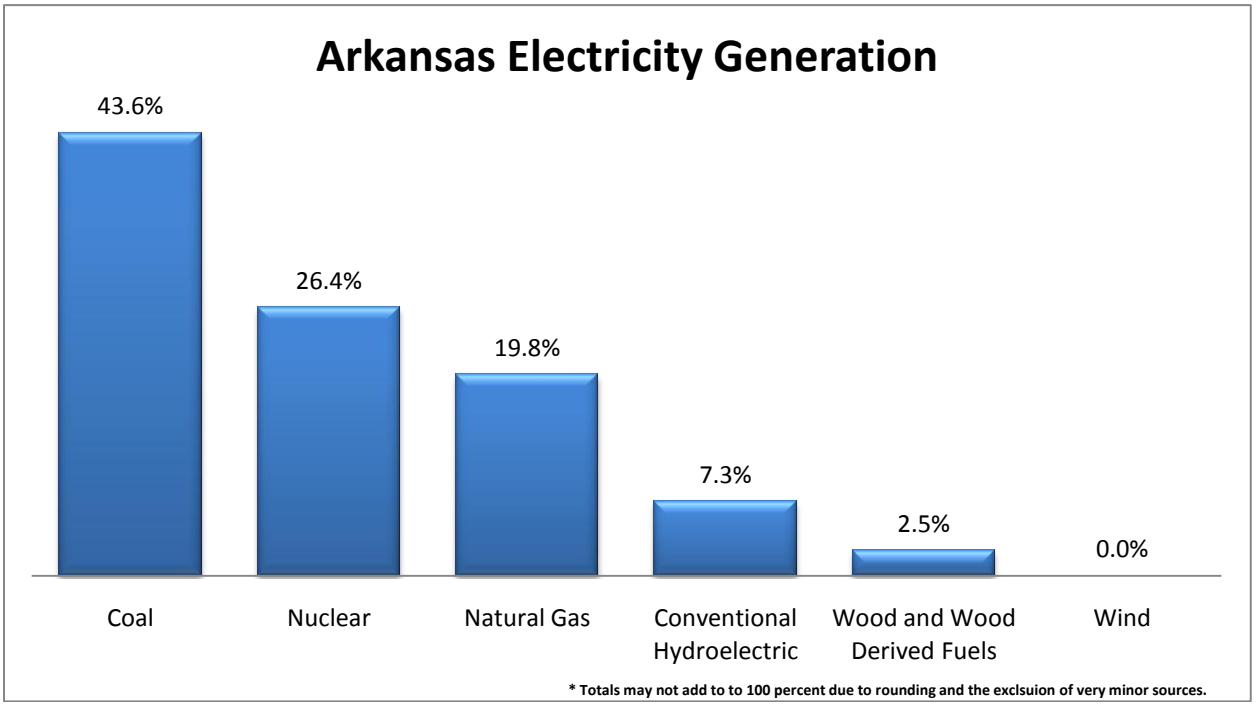
[123] Lawrence Berkeley National Laboratory, *Renewable Portfolio Standards in the United States*, http://eetd.lbl.gov/ea/ems/reports/lbnl-154e.pdf.
[124] Energy Information Administration, *Arizona*, Apr. 8, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=AZ.
[125] Ariz. Exec. Order, No. 2006-13 (Sept. 7, 2006), http://www.azclimatechange.gov/download/EO_2006-13_090806.pdf.
[126] *Id.*
[127] ARIZ. REV. STAT. 34-471, Energy Conservation Standards for Public Buildings, http://www.azleg.state.az.us/FormatDocument.asp?inDoc=/ars/34/00451.htm&Title=34&DocType=ARS.
[128] *Id.*
[129] Arizona Department of Commerce, Arizona Appliance Efficiency Program, http://www.azcommerce.com/Energy/Efficiency/AZ+Appliance+Efficiency+Program.htm.
[130] *Id.*

- **Arizona does not allow** electric utilities to “decouple” revenue from the sale of electricity, but **does allow** natural gas utilities to decouple revenue from the sale of natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity or natural gas.

Arkansas Energy Facts

Arkansas – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$27,753	3rd lowest
Unemployment	7.7%	16th lowest
Gasoline Price, per gallon	$2.67	4th lowest
Electricity Price, per kWh	7.7¢	17th lowest

Arkansas has low gasoline prices, likely because of its proximity to the Gulf of Mexico, and below average electricity prices. Over 40 percent of the state's electricity is generated from coal, which is wholly imported from Wyoming. Arkansas has one nuclear power plant, which provides about a quarter of the state's electricity. Hydroelectric power plants in the White River Basin in the north, along the Arkansas River in central Arkansas, and in the Ouachita River Basin in the south provide hydroelectricity, Arkansas' major renewable.



Despite small oil and coal deposits, Arkansas has substantial natural gas reserves. The state's natural gas production currently accounts for about one percent of national output. Companies are beginning to extract small amounts of natural gas from coalbed methane deposits in Arkansas. Arkansas has the Fayetteville shale natural gas field, which is estimated to contain 20 trillion cubic feet of natural gas.[131]

[131] OilShaleGas.com, *What is the Fayetteville Shale Area Natural Gas Field?*, http://oilshalegas.com/fayettevilleshale.html

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Arkansas' regulatory environment that are likely to affect the cost of energy or the cost of using energy. Fortunately for the citizens of Arkansas, the state has not imposed many of the regulations that other states are imposing.

- **Arkansas does not cap** greenhouse gas emissions.
- **Arkansas is not a member** of a regional agreement to cap greenhouse gas emissions.
- **Arkansas does not require** utilities to sell a certain percentage of electricity from renewable sources.
- **Arkansas does not require** gasoline to be mixed with renewable fuels.
- **Arkansas does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **Arkansas requires** new residential and commercial buildings to meet energy efficiency standards. New buildings must meet an Arkansas-specific version of the 2003 International Energy Conservation Code.[132] The IECC, developed by the International Code Council, is a model code that mandates certain energy efficiency standards. House Bill 1663, enacted in 2009, directed the Arkansas Energy Office to develop a plan to reduce energy use from 2008 levels in existing state-owned facilities larger than 20,000 square feet, by 20 percent by 2014 and 30 percent by 2017.[133] New state buildings must

† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[132] Database of State Incentives for Renewables and Efficiency, Arkansas Energy Code, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=AR08R&re=1&ee=1.

[133] An Act to Promote the Conservation of Energy and Natural Resources in Buildings Owned by Public Agencies and Institutions of Higher Education, H.B. 1663 (Ark. 2009), http://www.arkleg.state.ar.us/assembly/2009/R/Bills/HB1663.pdf.

also be at least ten percent more efficient than ASHRAE 90.1-2007.[134] ASHRAE 90.1 is a model code that mandates certain energy efficiency standards, and is developed by the American Society of Heating and Refrigeration and Air Conditioning Engineers. The 2007 code is the most recent version.

- **Arkansas does not impose** state-based appliance efficiency standards.
- **Arkansas does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

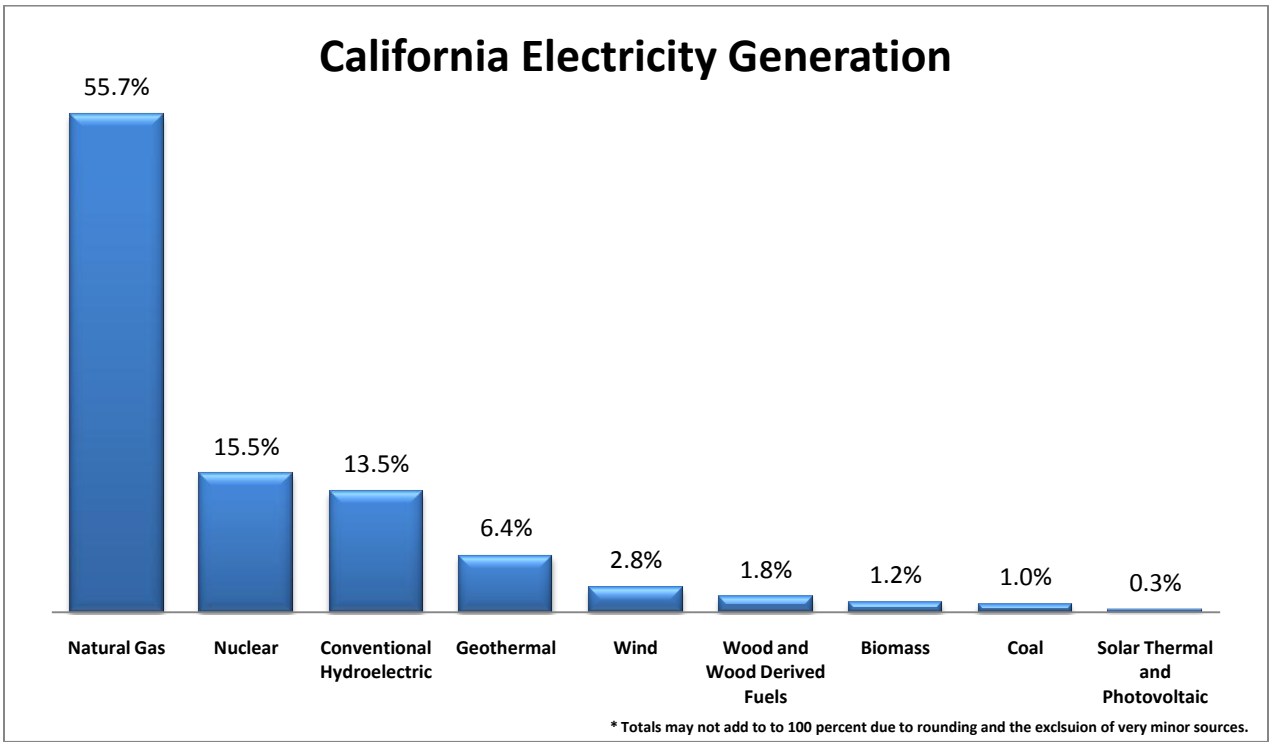
[134] Database of State Incentives for Renewables and Efficiency, Green Building Standards for State Facilities, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=AR07R&re=0&ee=1.

California Energy Facts

California – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$42,064	7th highest
Unemployment	12.5%	4th highest
Gasoline Price, per gallon	$3.10	3rd highest
Electricity Price, per kWh	13.58¢	9th highest

California is an exceptional state. California has a high per capita gross state product and high energy prices. California's climate attracts people from throughout the country, and the entertainment industry and Silicon Valley have created great economic wealth in California. But California's regulations have driven up energy prices, and the regulations will continue to help push up energy prices. For example, California motorists are required to use a special motor gasoline blend called California Clean Burning Gasoline, making California have the highest gasoline price in the lower 48 states. California has also enacted regulations to increase the price of energy in an effort to reduce carbon dioxide emissions. These excessive regulations will not help California's battered jobs outlook, nor will it help California balance its budget.

California imports more electricity than any other state. Recent state laws prohibit utilities in California from entering into long-term contracts with coal-fired power plants for electricity imports.



California has large oil deposits, and accounts for more than a tenth of the nation's oil production. The state also has more than a tenth of the nation's oil refining capacity. California has substantial natural gas reserves, though it provides less than two percent of annual production in the United States. To meet rising state demand, there are proposals to build liquefied natural gas (LNG) import terminals in the state. There are also large deposits of offshore oil and natural gas, but, although the Federal moratorium expired in 2008, the Obama Administration and the state and local governments will not allow these resources to be further developed. California's hydroelectric power provides less than fifteen percent of California's electricity. The state has substantial geothermal potential and is home to the world's largest complex of geothermal power plants. It also has wind power potential, but wind currently provides less than three percent of the state's electricity. Though California's deserts provide significant solar power potential, today only a minimal portion of the state's electricity is generated from this source (0.3 percent), even though the world's largest solar power facility is in California's Mojave Desert.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about California's regulatory environment that are likely to affect the cost of energy or the cost of using energy.

- **California caps** greenhouse gas emissions. In September 2006, the California State Legislature enacted the Global Warming Solutions Act, A.B. 32, which caps greenhouse gas emissions at 1990 levels by 2020. It was the first state program to impose a cap on greenhouse gas emissions and include enforceable penalties.[135]

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† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[135] California Global Warming Solutions Act, A.B. 32 (Cal. 2006), http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_0001-0050/ab_32_bill_20060927_chaptered.pdf.

- **California is a member** of the Western Climate Initiative (WCI), a regional agreement among some American governors and Canadian premiers to target greenhouse gas reductions. The central component of this agreement is the eventual enactment of a cap-and-trade scheme to reduce greenhouse gas emissions 15 percent below 2005 levels by 2020.
    - **California also has a de facto ban** on new coal-fired power plants. An interim greenhouse performance standard requires that all new baseload generation produce no more greenhouse gases than a combined-cycle gas turbine power plant.[136]
- **California requires** utilities to sell a certain percentage of electricity from renewable sources. The state's renewable portfolio standard requires utilities to provide 20 percent of their retail electricity sales from renewables by December 31, 2010 and 33 percent by 2020. [137] To qualify for the RPS the electricity either needs to be produced in-state, or produced out-of-state and delivered into the state. For most technologies the renewable facility had to have been constructed after September 26, 1996 to be counted towards the RPS.
    - **California imposes** a feed-in tariff for renewable energy, requiring investor-owned utilities to purchase renewable energy at an increased price. Utilities must buy all renewable generation under 3 megawatts within their service territories, until they hit a statewide total cap of 750 megawatts. Large public utilities must also set up programs to buy all renewable generation under 3 megawatts. By increasing the cost of renewable energy, this law increases electricity prices for consumers and businesses.
- **Most Californians are required** to use a special blend of gasoline called California Clean Burning Gasoline. In Imperial County, and the Los Angeles metropolitan area, motorists are required to use California Oxygenated Clean Burning Gasoline.[138] Also, **California imposes** a low carbon fuel standard (LCFS).[139] Governor Arnold Schwarzenegger issued Executive Order S-01-07, requiring a 10 percent reduction in the carbon intensity of all transportation fuels.[140] It is not clear how California will achieve this standard.
- **California imposes** automobile fuel economy standards, which are an attempt to regulate greenhouse gas emissions from new vehicles. Assembly Bill 1493, passed in 2002, allowed the California Air Resources Board to develop regulations to reduce greenhouse gas emissions from passenger vehicles, if the state received a waiver from EPA, which has been awarded to California by the Obama Administration.[141,142]

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[136] California Public Utilities Commission, *Greenhouse Gas Emissions Performance Standard,* http://www.cpuc.ca.gov/PUC/energy/Climate+Change/070411_ghgeph.htm.

[137] Lawrence Berkeley National Laboratory, *Renewables Portfolio Standards in the United States*, http://eetd.lbl.gov/ea/ems/reports/lbnl-154e.pdf.

[138] Energy Information Administration, *California*, Apr. 1, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=CA.

[139] California Air Resources Board, *The California Low Carbon Fuel Standard Regulation*, http://www.arb.ca.gov/fuels/lcfs/1208lcfsreg_draft.pdf.

[140] Cal. Exec. Order No. S-01-07 (Jan. 18, 2007), http://gov.ca.gov/index.php?/executive-order/5172/.

[141] A.B. 1493 (Cal. 2002), http://www.arb.ca.gov/cc/ccms/documents/ab1493.pdf.

- **California requires** new residential and commercial buildings to meet energy efficiency standards. The state's specific code, from Title 24, Part 6, exceeds the requirements of the 2006 International Energy Conservation Code (IECC).[143] The IECC, developed by the International Code Council, is a model code that mandates certain energy efficiency standards. A new code in California is currently under development and could be fully enacted in late 2010. This code will require all new construction to reduce energy use by 15 percent, water use by 20 percent, and water for landscaping by 50 percent. Assembly Bill 1103, passed in 2007, also requires all non-residential buildings to report their annual energy use.[144] Beginning in 2010, commercial building owners must disclose annual energy use and Energy Star ratings to potential buyers, lessees, and financiers. In 2005, Governor Arnold Schwarzenegger issued Executive Order S-20-04, requiring a 20 percent reduction from 2003 levels in grid-based energy use in state buildings by 2015.[145] New and renovated state buildings must also meet the silver LEED standard. The silver LEED standard is one level of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system. A wide variety of independent state agencies must also seek new energy efficiency standards. Lastly, Assembly Bill 532, passed in 2007, requires solar energy equipment to be installed by 2009 on any public building or facility where such an installation is cost-effective.[146]
- **California imposes** state-based appliance efficiency standards. The state's Appliance Efficiency Regulations include mandates for consumer audio and video products, metal halide lamp fixtures, pool pumps, general service incandescent lamps, water dispensers, walk-in refrigerators and freezers, hot tubs, commercial hot food holding cabinets, under cabinet fluorescent lamps, and vending machines.[147] Additionally, Assembly Bill 1109, passed in 2007, requires the California Energy Commission to impose minimum efficiency standards for all general purpose lights.[148]
- **California allows** utilities to "decouple" revenue from the sale of electricity and natural gas. By allowing utilities to decouple, California has enable utilities to increase their revenue by selling less electricity and natural gas.

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[142] Rulemaking on the Proposed Regulations to Control Greenhouse Gas Emissions from Motor Vehicles, http://www.arb.ca.gov/regact/grnhsgas/grnhsgas.htm.

[143] California Energy Commission, *California's Energy Efficiency Standards for Residential and Nonresidential Buildings*, http://www.energy.ca.gov/title24/index.html.

[144] An act to add Section 25402.10 to the Public Resources Code, relating to energy, A.B. 1103 (Cal. 2007), http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_1101-1150/ab_1103_bill_20071012_chaptered.pdf.

[145] Cal. Exec. Order No. S-20-04 (July 24, 2004).

[146] A.B. 532 (Cal. 2007), http://www.climatechange.ca.gov/publications/legislation/ab_532_bill_20071013_chaptered.pdf.

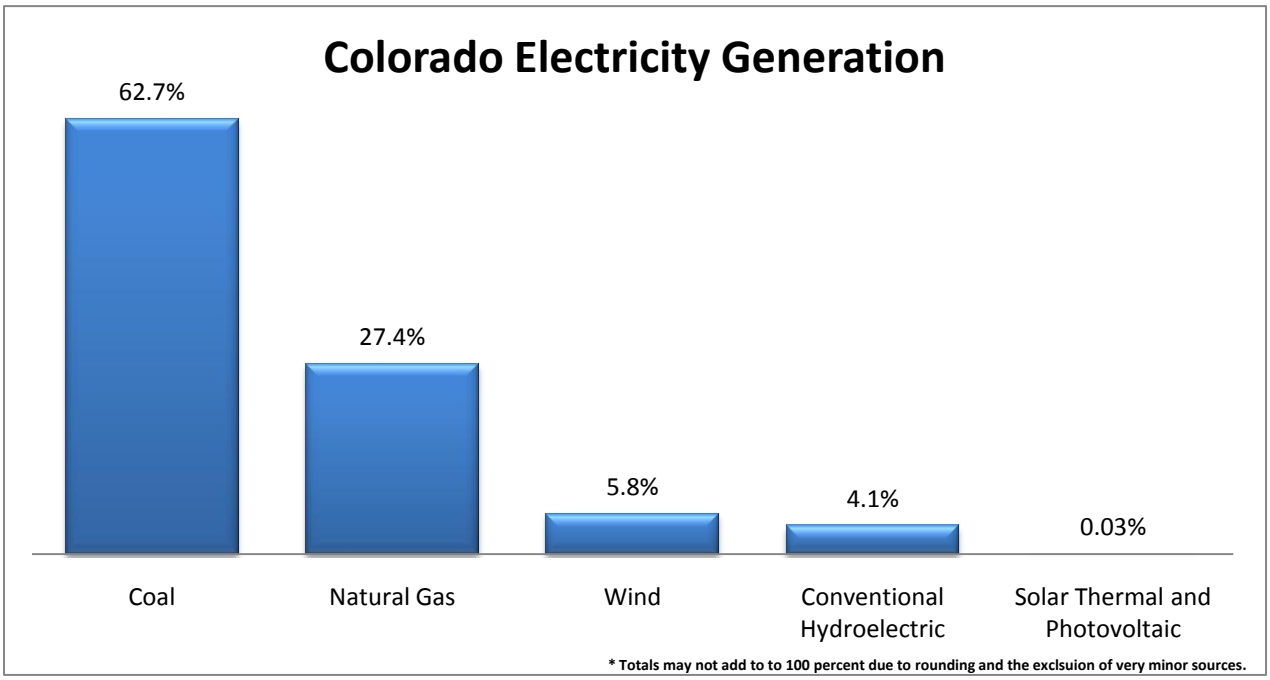
[147] California Energy Commission, *2007 Appliance Efficiency Regulations*, http://www.energy.ca.gov/2007publications/CEC-400-2007-016/CEC-400-2007-016-REV1.PDF.

[148] A.B. 1109 (Cal. 2009), http://leginfo.ca.gov/pub/09-10/bill/asm/ab_1101-1150/ab_1109_bill_20090413_amended_asm_v98.pdf.

Colorado Energy Facts

Colorado – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$41,102	10th highest
Unemployment	7.7%	16th lowest
Gasoline Price, per gallon	$2.70	12th lowest
Electricity Price, per kWh	8.36¢	22nd lowest

Colorado has moderately affordable electricity with average prices lower than the national average. Over 60 percent of Colorado's electricity is generated by coal, the most inexpensive source of electricity. About a quarter of Colorado's electricity is generated by natural gas. Hydroelectric and wind power combined account for almost 10 percent of the state's electricity generation. Major rivers flowing from the Rocky Mountains offer hydroelectric power resources.



Colorado has substantial fossil resources, with reserves of oil, coal, and natural gas. The state currently produces about 1 percent of the nation's domestic oil supply, but Colorado's oil shale deposits hold an estimated one trillion barrels of oil resources, nearly as much oil as the entire world's proven reserves. Colorado currently provides more than 5 percent of natural gas production in the United States. About half of the state's natural gas supply comes from coalbed methane, representing about a quarter of the nation's coalbed methane supply. Colorado imports coal from Wyoming, but also exports about three-quarters of its production to other states.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Colorado's regulatory environment that are likely to increase the cost of energy or the cost of using energy.

- **Colorado does not cap** greenhouse gas emissions.
- **Colorado is an observer** of the Western Climate Initiative (WCI), a regional agreement among some American governors and Canadian premiers to target greenhouse gas reductions. The central component of this agreement is the eventual enactment of a cap-and-trade scheme to reduce greenhouse gas emissions 15 percent below 2005 levels by 2020. As an observer of the WCI, Colorado would not be bound to agreements made by WCI members.
- **Colorado requires** utilities to generate a certain percentage of electricity from renewable sources. The state's renewable portfolio standard requires investor-owned utilities to provide 30 percent of their electricity sales from renewables by 2020.[149] Similarly, electric cooperatives and municipal utilities serving customers of over 40,000 must provide 10 percent of their retail electricity sales from renewables by 2020.
- **Colorado does not require** gasoline to be mixed with renewable fuels. However, the Denver/Boulder and Ft. Collins metropolitan areas must use oxygenated motor gasoline, which is a *de facto* requirement to blend ethanol with motor fuel.[150]
- **Colorado requires** new residential and commercial buildings to meet energy efficiency standards. The state mandates the 2003 International Energy Conservation Code (IECC) as the minimum energy code for any locality that has adopted a building code.[151] For

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† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[150] Energy Information Administration, *Colorado*, Apr. 1, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=CO.

[151] Database of State Incentives for Renewables and Efficiency, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=CO36R&re=0&ee=1.

localities without a building code, the 1993 Model Energy Code (MEC) is mandatory for hotels, motels, and multi-family dwellings. The IECC, like its MEC precursor, is a model code developed by the International Code Council and mandates certain energy efficiency standards. House Bill 1149, enacted in 2009, requires builders of single family homes to offer solar equipment as a standard feature to all prospective buyers.[152] Additionally, Senate Bill 51, enacted in 2007, established mandatory sustainability requirements for state-owned and state-assisted building. It also required the Office of the State Architect to adopt an energy efficiency standard.[153]

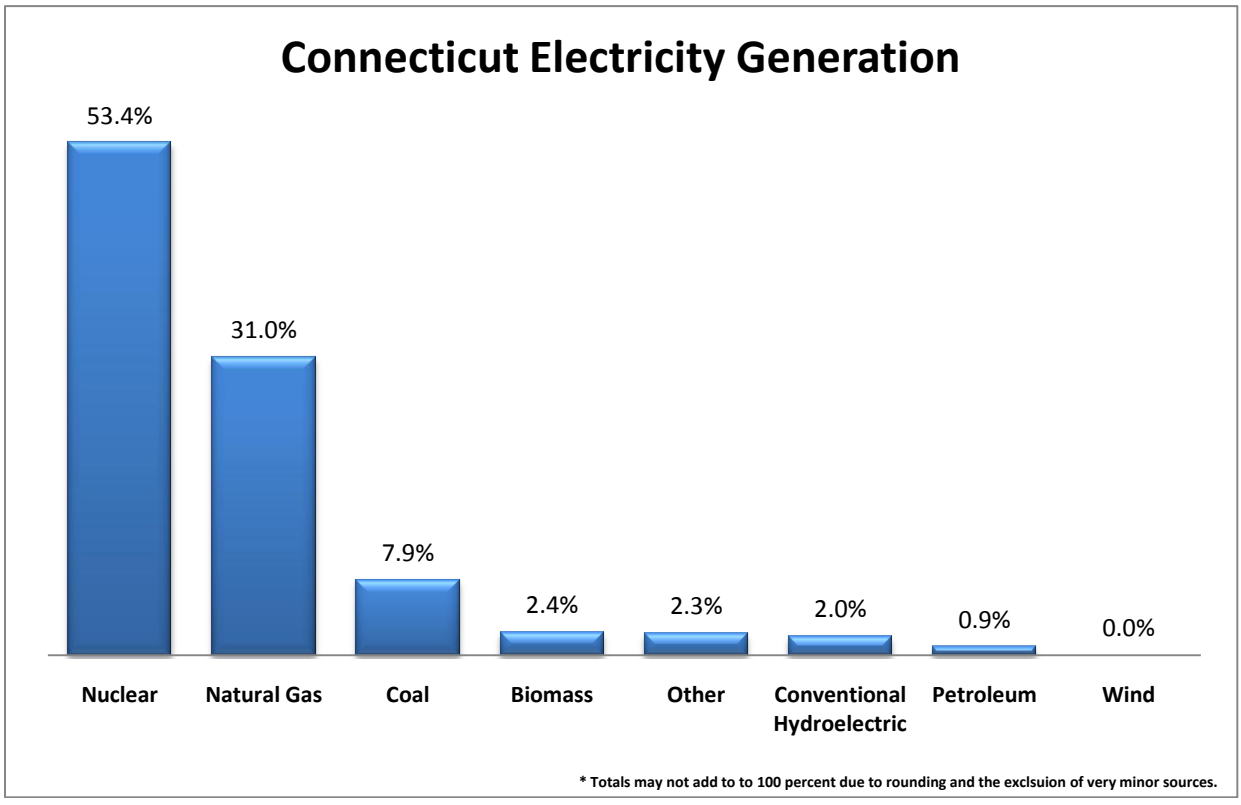
- **Colorado does not impose** state-based appliance efficiency standards. However, House Bill 1207, enacted in 2008, implemented a purchasing preference for "environmentally preferable" products for state agencies.[154] State agencies must purchase Energy Star equipment when it is available.
- **Colorado does not allow** electric utilities to "decouple" revenue from the sale of electricity but **does allow** natural gas utilities to decouple revenue from the sale of natural gas. Decoupling allows utilities to increase their revenue by selling less electricity and natural gas.

[152] H.B. 09-1149 (Colo. 2009), http://www.leg.state.co.us/Clics/CLICS2009A/csl.nsf/fsbillcont3/56DAD78B9D26BD5187257539006E7FF9?Open&file=1149_01.pdf.
[153] S.B. 07-51 (Colo. 2007), http://www.colorado.gov/energy/images/uploads/pdfs/SB0751.pdf.
[154] H.B. 08-1207 (Colo. 2008), http://www.colorado.gov/energy/images/uploads/pdfs/HB1207.pdf.

Connecticut Energy Facts

Connecticut – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$50,758	2nd highest
Unemployment	9.1%	25th highest
Gasoline Price, per gallon	$2.91	10th highest
Electricity Price, per kWh	18.21¢	2nd highest

Connecticut has some of the most expensive energy prices in the United States. Like most of the states in the Northeast, Connecticut's electricity prices are among the highest in the country and are second only to Hawaii. More than half of the state's electricity is produced from the state's largest-capacity power plant, the 2 gigawatt Millstone Nuclear Power Station[155]. Natural gas provides over 30 percent of the state's supply and coal contributes 8 percent.



Connecticut has no fossil fuel reserves. Natural gas for electricity production is primarily provided by pipelines from the Gulf Coast and Canada.

[155]Energy Information Administration, *Millstone Nuclear Power Station, Connecticut*, Sept. 10, 2009, http://www.eia.doe.gov/cneaf/nuclear/page/at_a_glance/reactors/millstone.html

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Connecticut's regulatory environment that are likely to affect the cost of energy or the cost of using energy. One of the reasons Connecticut has the most expensive electricity in the continental United States is because of the regulations it has enacted.

- **Connecticut imposes** a goal of capping greenhouse gas emissions. In 2008, Connecticut passed Public Act No. 08-98,[156] which has the goal of limiting greenhouse gases to 10 percent below 1990 levels by 2020 and 80 percent below 2001 levels by 2050.
- **Connecticut is a member** of the Regional Greenhouse Gas Initiative (RGGI), a regional agreement among ten Northeast states to limit greenhouse gas emissions. This agreement requires states to cap carbon dioxide emissions from the electrical generation sector and to reduce those emissions by 10 percent by 2018 through a cap-and-trade scheme.
- **Connecticut requires** utilities to sell a certain percentage of electricity from renewable sources. The state's renewable portfolio standard requires utilities to provide 27 percent of electricity generation from renewables by 2020.[157] Connecticut's renewable portfolio standard requires each electric supplier and each electric distribution company wholesale supplier to obtain at least 23 percent of its retail load from renewable energy by January 1, 2020 and it requires each electric supplier and each electric distribution company wholesale supplier to obtain at least 4 percent of its retail load by using combined heat and power systems and energy efficiency by 2010.[158]

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† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[156] Public Act No. 08-98 (Conn. 2008), http://www.cga.ct.gov/2008/ACT/PA/2008PA-00098-R00HB-05600-PA.htm.

[157] Connecticut Department of Public Utility Control, *Connecticut Renewable Portfolio Standards Overview*, http://www.ct.gov/dpuc/cwp/view.asp?a=3354&q=415186 (last visited Mar. 5, 2010).

[158] Database of State Incentives for Renewables and Efficiency, Connecticut Incentives/Policies for Renewables & Efficiency, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=CT04R&re=1&ee=1.

- **Connecticut requires** the use of reformulated gasoline blended with ethanol.[159]
- **Connecticut imposes** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from vehicles. In May 2004, Connecticut passed the Clean Car Act, Public Act 08-98.[160] This applies to 2008 models onward and adopts California's vehicle emissions standards.
- **Connecticut requires** new residential and commercial buildings to meet energy efficiency standards. The state mandates the 2006 International Energy Conservation Code (IECC) for both residential and commercial buildings.[161] The IECC, developed by the International Code Council, is a model code that mandates certain energy efficiency standards. New construction greater than $5 million and renovations greater than $2 million, except for residential buildings with less than five units, must meet the silver LEED standard or an equivalent standard.[162] The silver LEED standard is one level of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system. Public Act 09-192, enacted in 2009, mandates the incorporation of the 2012 IECC within 18 months of its publication.[163] In addition, Public Act 06-187 requires state facilities to meet the silver LEED standard or an equivalent standard.[164] The minimum energy performance for state building projects must be 21 percent better than the Connecticut State Building Code or ASHRAE 90.1-2004, whichever is stricter.[165] These regulations apply to new construction greater than $5 million and renovations greater than $2 million.
- **Connecticut imposes** state-based appliance efficiency standards. The state mandates efficiency standards for commercial refrigerators and freezers, bottle-type water dispensers, large packaged air conditioning equipment, commercial hot food holding cabinets, hot tubs, and swimming pool pumps.[166] In addition, Public Act 07-242 established mandatory efficiency requirements for state-purchased residential furnaces and boilers. It also required state agencies to purchase equipment and appliances that at least meet federal Energy Star standards.[167]

[159] Energy Information Administration, *Connecticut*, Apr. 1, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=CT.
[160] Public Act No. 08-98 (Conn. 2008), http://www.cga.ct.gov/2008/ACT/PA/2008PA-00098-R00HB-05600-PA.htm.
[161] Office of State Building Inspector, State Building Code –2005 Connecticut Supplement, 2009 Amendment, http://www.ct.gov/dps/lib/dps/office_of_state_building_inspector_files/2009_amendment_final_unformatted.pdf.
[162] Office of the State Building Inspector, December 5, 2008, Memorandum, http://bcap-energy.org/files/CT_memo_to_interested_parties_2009_amendment_re_pa07-242_Dec_5_08.PDF.
[163] Public Act No. 09-192 (Conn. 2009), http://bcap-energy.org/files/CT_PublicAct09-192_from-HB6284.pdf.
[164] Public Act No. 06-187 (Conn. 2006), http://www.cga.ct.gov/2006/ACT/PA/2006PA-00187-R00HB-05846-PA.htm.
[165] State of Connecticut, *The Establishment of High Performance Building Construction Standards for State-Funded Buildings*, http://www.ct.gov/opm/lib/opm/pdpd_energy/regulation_bldg_stnds_final_1.5.09.pdf.
[166] Database of State Incentives for Renewables and Efficiency, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=CT09R&re=0&ee=1.
[167] Public Act No. 07-242 (Conn. 2007), http://www.cga.ct.gov/2007/ACT/PA/2007PA-00242-R00HB-07432-PA.htm.

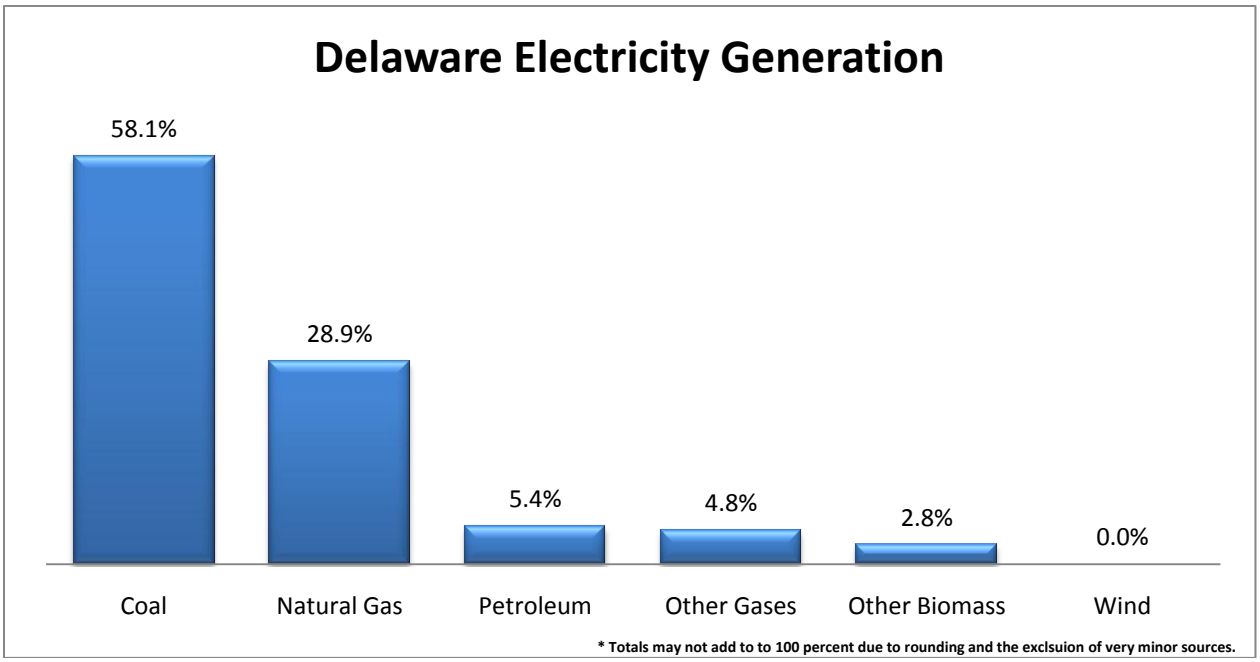
- **Connecticut allows** utilities to "decouple" revenue from the sale of electricity and natural gas. Public Act 07-242[168] requires the Department of Public Utility Control to order electric and gas decoupling, but it is not currently in effect for any utility. Decoupling allows utilities to increase their revenue by selling less electricity and natural gas.

[168] *Id.*

Delaware Energy Facts

Delaware – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$56,401	1st highest
Unemployment	9.2%	24th highest
Gasoline Price, per gallon	$2.75	22nd lowest
Electricity Price, per kWh	12.17¢	13th highest

Delaware has relatively expensive electricity prices, 23 percent higher than the national average. Coal produces almost 60 percent of Delaware's electricity, while natural gas produces about 29 percent.



Delaware has no fossil fuel resources, so its energy supplies are delivered from other states. Coal is imported from West Virginia, Kentucky, Colorado, and Virginia while natural gas is supplied via two interstate pipelines.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide

output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Delaware's regulatory environment that are likely to affect the cost of energy or the cost of using energy.

- **Delaware does not cap** greenhouse gas emissions. However, as a member of the Regional Greenhouse Gas Initiative, it has imposed a cap on greenhouse gas emissions from power plants.
- **Delaware is a member** of the Regional Greenhouse Gas Initiative (RGGI), a regional agreement between ten Northeast states to limit greenhouse gas emissions. This agreement requires states to cap carbon dioxide emissions from the electrical generation sector and to reduce those emissions by 10 percent by 2018 through a cap-and-trade scheme.
- **Delaware requires** utilities to generate a certain percentage of electricity from renewable sources. The state's renewable portfolio standard requires utilities to provide 20 percent of the electricity sold in the state from renewable sources by 2010, of which 2 percent must come from solar photovoltaics.[169] However, municipal utilities and cooperatives can opt out of the standard by establishing a green energy fund and a voluntary green power program.[170]
- **Delaware requires** the use of reformulated gasoline blended with ethanol.[171]
- **Delaware does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **Delaware requires** new residential and commercial buildings to meet energy efficiency standards. Senate Bill 306, enacted in 2004, adopted the 2000 International Energy Conservation Code (IECC) for residential buildings and ASHRAE 90.1-1999 for commercial buildings.[172] The IECC (developed by the International Code Council) and ASHRAE (developed by the American Society of Heating and Refrigeration and Air

† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[169] Lawrence Berkeley National Laboratory, *Renewables Portfolio Standards in the United States*, http://eetd.lbl.gov/ea/ems/reports/lbnl-154e.pdf.

[170] A Renewable Energy Portfolio Standards Act, Delaware Code, DEL. CODE title 26, Ch. 1, Sub. III, http://delcode.delaware.gov/title26/c001/sc03a/index.shtml.

[171] Energy Information Administration, *Delaware*, Apr. 1, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=DE.

[172] S.B. 306 (Del. 2004), http://delcode.delaware.gov/sessionlaws/ga142/chp418.shtml.

Conditioning Engineers) are model codes that mandate certain energy efficiency standards. Senate Bill 59, passed in 2009, requires the most recent version of the IECC: new residential buildings three stories or less constructed after July 1, 2010. All other construction built after that date, including high-rise residential, must meet the latest ASHRAE standard.[173]

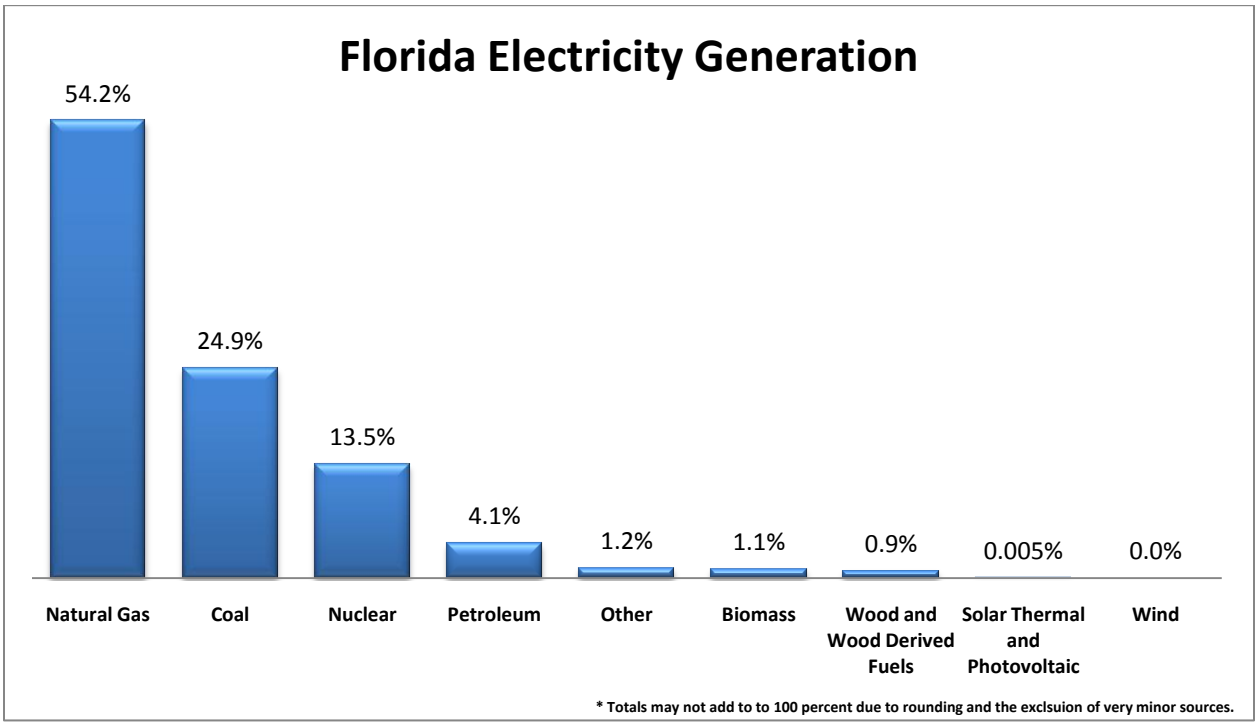
- **Delaware does not impose** state-based appliance efficiency standards. However, House Bill 434, enacted in 2004, requires state agencies to purchase Energy Star products if they are competitively available within a reasonable time frame and meet appropriate performance standards.[174]
- **Delaware does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[173] S.B. 59 (Del. 2009), http://legis.delaware.gov/LIS/lis145.nsf/vwLegislation/SB+59/$file/legis.html?open.
[174] H.B. 434 (Del. 2004), http://legis.delaware.gov/LIS/LIS142.NSF/fsHTML/?openframeset.

Florida Energy Facts

Florida – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$32,925	18th lowest
Unemployment	12.2%	6th highest
Gasoline Price, per gallon	$2.83	20th highest
Electricity Price, per kWh	11.43¢	14th highest

Florida has moderately expensive electricity, 16 percent higher than the national average. Over half of the state's electricity is generated from natural gas, while coal provides about 25 percent of Florida's electricity production. Florida generates more electricity from petroleum, in absolute terms, than any other state. The state also produces electricity from municipal solid waste and landfill gas, though these sources contribute little to the overall state electricity production. In 2009, Florida constructed a 25-megawat solar photovoltaic plant, and have several other solar plants planned.



Florida has substantial oil and natural gas reserves offshore. Due to federal and state regulations, however, these resources are currently off-limits. Most of Florida's natural gas supply is delivered from other Gulf Coast states via two major interstate pipelines, though it gets some liquefied natural gas from the terminal at Elba Island, Georgia. Some people have suggested constructing liquefied natural gas (LNG) import terminals to further supplement

Florida's natural gas supply within the state. Florida has no coal, so it imports coal from Kentucky, Illinois, and West Virginia.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Florida's regulatory environment that are likely to affect the cost of energy or the cost of using energy.

- **Florida is developing a cap** on greenhouse gas emissions. House Bill 7135, passed in 2008, authorizes the Florida Department of Environmental Protection to develop a greenhouse gas trading program.[175] After development, this program would be submitted to the state legislature for approval.
- **Florida is not a member** of a regional agreement to cap greenhouse gas emissions.
- **Florida does not require** utilities to sell a certain percentage of electricity from renewable sources. However, JEA, a municipal utility, signed a Memorandum of Understanding to generate at least 7.5 percent of its electric capacity from green energy sources by 2015.
- **Florida requires** gasoline to be mixed with renewable fuels. House Bill 7135[176] mandates that gasoline in Florida be 10 percent ethanol by December 31, 2010.
- **Florida imposes** automobile fuel economy standards that include attempts to regulate greenhouse gas emissions from new vehicles. Executive Order 07-127[177] requires the Florida Secretary of Environmental Protection to develop rules adopting California's vehicle emissions standards.

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† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[175] H.B. 7135 (Fla. 2008), http://flsenate.gov/data/session/2008/House/bills/billtext/pdf/h713503er.pdf.

[176] *Id.*

[177] Fla. Exec. Order No. 07-127 (July 13, 2007), http://www.flclimatechange.us/ewebeditpro/items/O12F15074.pdf.

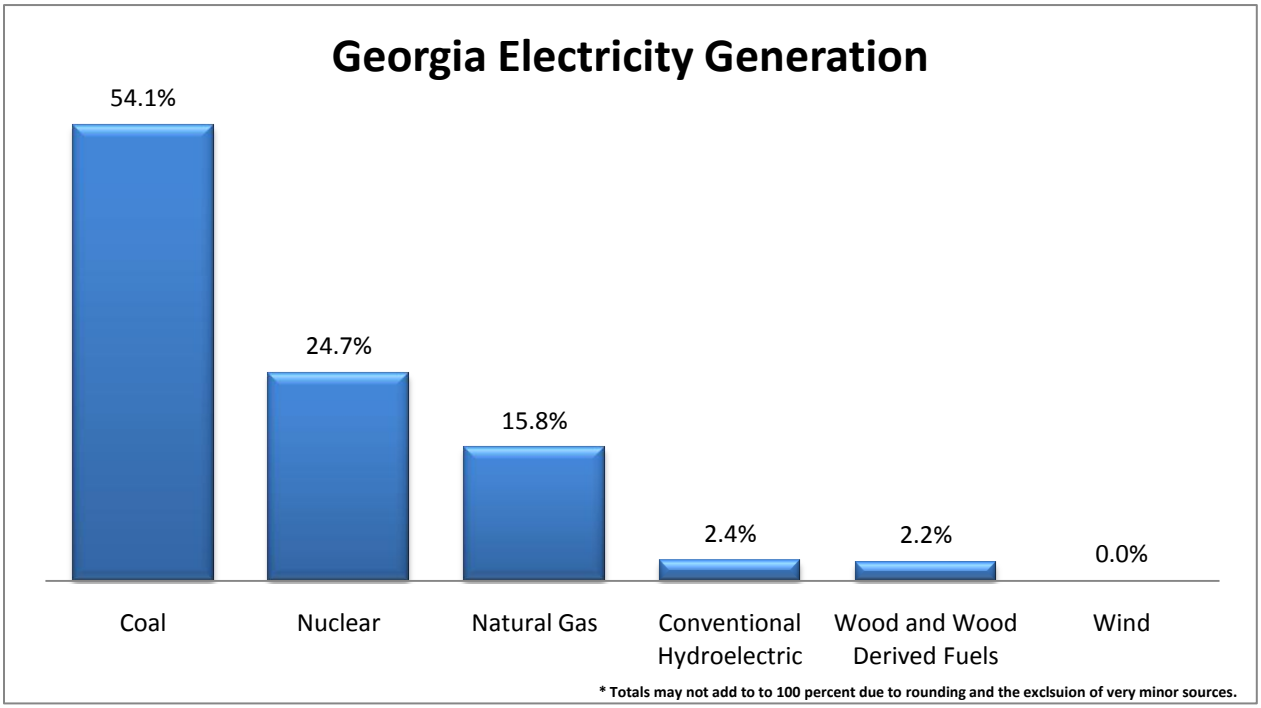
- **Florida requires** new residential and commercial buildings to meet energy efficiency standards. House Bill 697, enacted in 2008, requires the Florida Building Commission to use the current version of the International Energy Conservation Code (IECC) as a foundation code, but to amend the IECC to maintain the efficiencies of the Florida Energy Efficiency Code for Building Construction.[178] The IECC, developed by the International Code Council, is a model code that mandates certain energy efficiency standards. The Florida Energy Conservation and Sustainable Buildings Act requires the use of energy efficiency equipment and design and solar energy devices in state buildings.[179] House Bill 7135, passed in 2008, mandates that buildings constructed and financed by the state must comply with the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system, or an equivalent system. It also precludes the state from entering leasing agreements for office space that does not meet Energy Star standards.[180]
- **Florida does not impose** state-based appliance efficiency standards.
- **Florida does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[178] H.B. 697 (Fla. 2008), http://www.myfloridahouse.gov/sections/Bills/billsdetail.aspx?BillId=38094.
[179] Fla Stat. Chapter 255 (2009), http://www.leg.state.fl.us/statutes/index.cfm?App_mode=Display_Statute&URL=Ch0255/ch0255.htm.
[180] H.B. 7135 (Fla 2008), http://laws.flrules.org/files/Ch_2008-227.pdf.

Georgia Energy Facts

Georgia – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$34,017	21st lowest
Unemployment	10.5%	14th highest
Gasoline Price, per gallon	$2.70	10th lowest
Electricity Price, per kWh	8.76¢	25th lowest

Georgia has below average electricity prices. More than 50 percent of the state's electricity is generated from coal and the state's two nuclear power plants provide about a quarter of Georgia's electricity. Georgia is considered to have substantial hydroelectric potential and is one of the top hydroelectric power producers east of the Rocky Mountains, but hydroelectric provides a minimal portion of the state's electricity.



Georgia has no fossil fuel resources, so the state imports the coal and natural gas that together provide about 70 percent of the state's electricity. Georgia imports coal from Wyoming, Kentucky, and Virginia, and receives natural gas through interstate pipelines and its liquefied natural gas terminal at Elba Island.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Georgia's regulatory environment that are likely to affect the cost of energy or the cost of using energy. Fortunately for the citizens of Georgia, the state has not implemented many regulations.

- **Georgia does not cap** greenhouse gas emissions.
- **Georgia is not a member** of a regional agreement to cap greenhouse gas emissions.
- **Georgia does not require** utilities to sell a certain percentage of electricity from renewable sources.
- **Georgia does not require** gasoline to be mixed with renewable fuels.
- **Georgia does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **Georgia requires** new residential and commercial buildings to meet energy efficiency standards. The state imposes the 2006 International Energy Conservation Code (IECC) with state-specific supplements and amendments.[181] The IECC, developed by the International Code Council, is a model code that mandates certain energy efficiency standards.
- **Georgia does not impose** state-based appliance efficiency standards.
- **Georgia does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

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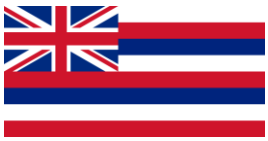
† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

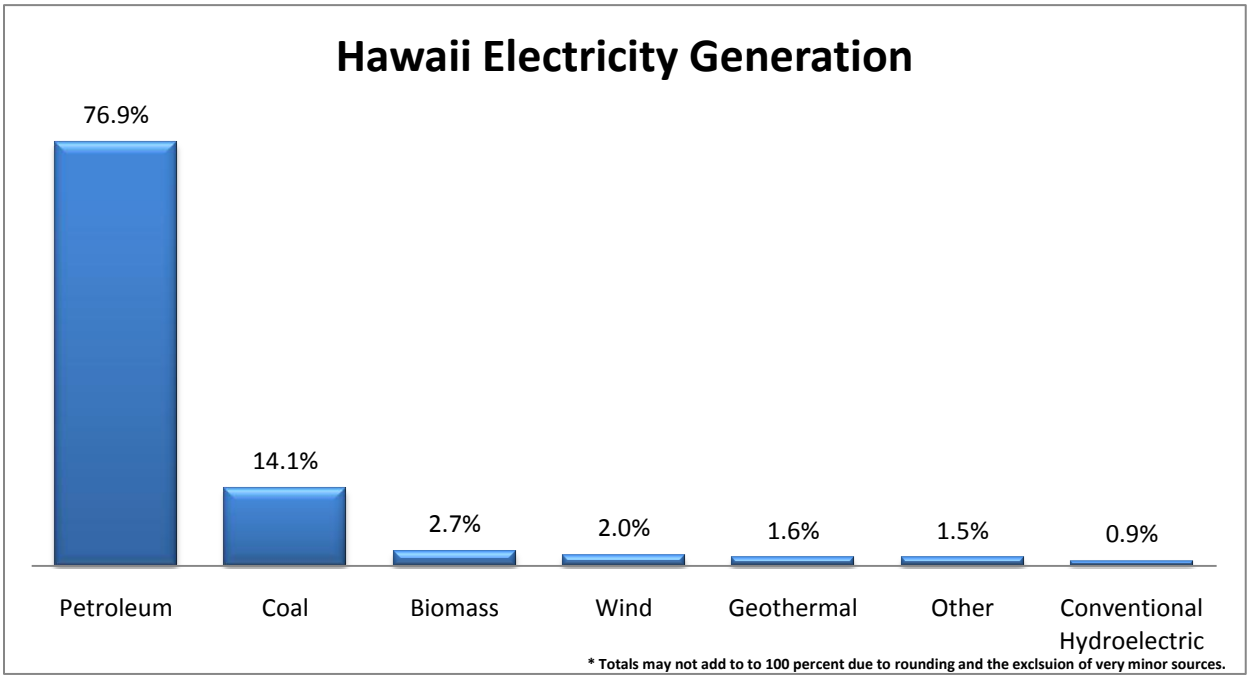
[181] Georgia State Supplements and Amendments to the International Energy Conservation Code (2006 ed.), http://laws.flrules.org/files/Ch_2008-227.pdf.



Hawaii Energy Facts

Hawaii – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$38,644	17th highest
Unemployment	6.9%	8th lowest
Gasoline Price, per gallon	$3.47	1st highest
Electricity Price, per kWh	21.21¢	1st highest

Hawaii has the most expensive energy in the country. The state's high prices are primarily due to its isolated location, separated from the U.S. mainland. Owing to the cost of transporting energy supplies to Hawaii, the state generates three-quarters of its electricity from petroleum, by far the largest proportion of petroleum-fueled electricity in the nation. Hawaii utilizes a variety of other energy sources for its remaining electricity. Hawaii is one of eight States with geothermal power generation and ranks third among them.[182]



Because of its isolated location, Hawaii imports most of its energy supplies. The state's two refineries process crude oil shipped from Alaska and foreign countries and supply petroleum products to the state. Hawaii does not have any pipelines, so its ports are critically important for transporting oil. Though it doesn't use much natural gas, Hawaii is one of just a few states that produce synthetic natural gas.

[182] Energy Information Administration, *Hawaii*, Apr. 1, 2010,http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=HI

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Hawaii's regulatory environment that are likely to affect the cost of energy or the cost of using energy. Hawaii's mandates for expensive and inefficient renewable sources will make it more difficult for the citizens of Hawaii to gain access to more affordable energy.

- **Hawaii caps** greenhouse gas emissions. Act 234, the Global Warming Solutions Act of 2007, mandates that statewide greenhouse gas emissions be reduced to 1990 levels by 2020.[183]
- **Hawaii is not a member** of a regional agreement to cap greenhouse gas emissions.
- **Hawaii requires** utilities to sell a certain percentage of electricity from renewable sources. House Bill 1464 requires public utilities to provide 25 percent of net electricity sales from renewable sources by December 31, 2020 and 40 percent of net electricity sales from renewables by December 31, 2030. [184]
    - **Hawaii allows** utilities to meet a portion of electricity demand with energy efficiency, with a goal of reducing electricity use statewide by 4,300 gigawatt-hours (GWh) by 2030.
- **Hawaii requires** at least 85 percent of gasoline to contain 10 percent ethanol.[185]
- **Hawaii does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **Hawaii requires** new residential and commercial buildings to meet energy efficiency standards. The Hawaii Model Energy Code exceeds the efficiency requirements of the 1995 Model Energy Code (MEC), superseded by the International Energy Conservation

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† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[183] H.B. 226 (Haw. 2007), http://www.capitol.hawaii.gov/session2007/bills/HB226_CD1_.htm.

[184] H.B. 1464 (Haw. 2009), http://www.capitol.hawaii.gov/session2009/bills/HB1464_CD1_.HTM.

[185] Hawaii Department of Business, Economic Development & Tourism – High Technology Development Corporation, New-Fuel.com, http://hawaii.gov/dbedt/ert/new-fuel/.

Code (IECC). The MEC and IEEC, both developed by the International Code Council, are model codes that mandate certain energy efficiency standards. House Bill 2175, passed in 2006, mandates efficiency standards for new state buildings, and requires state buildings to be designed and constructed to meet the silver LEED standard.[186] The silver LEED standard is one level of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system. House Bill 1464, enacted in 2009, imposes energy efficiency standards and requires retrofitting for existing state buildings.[187]

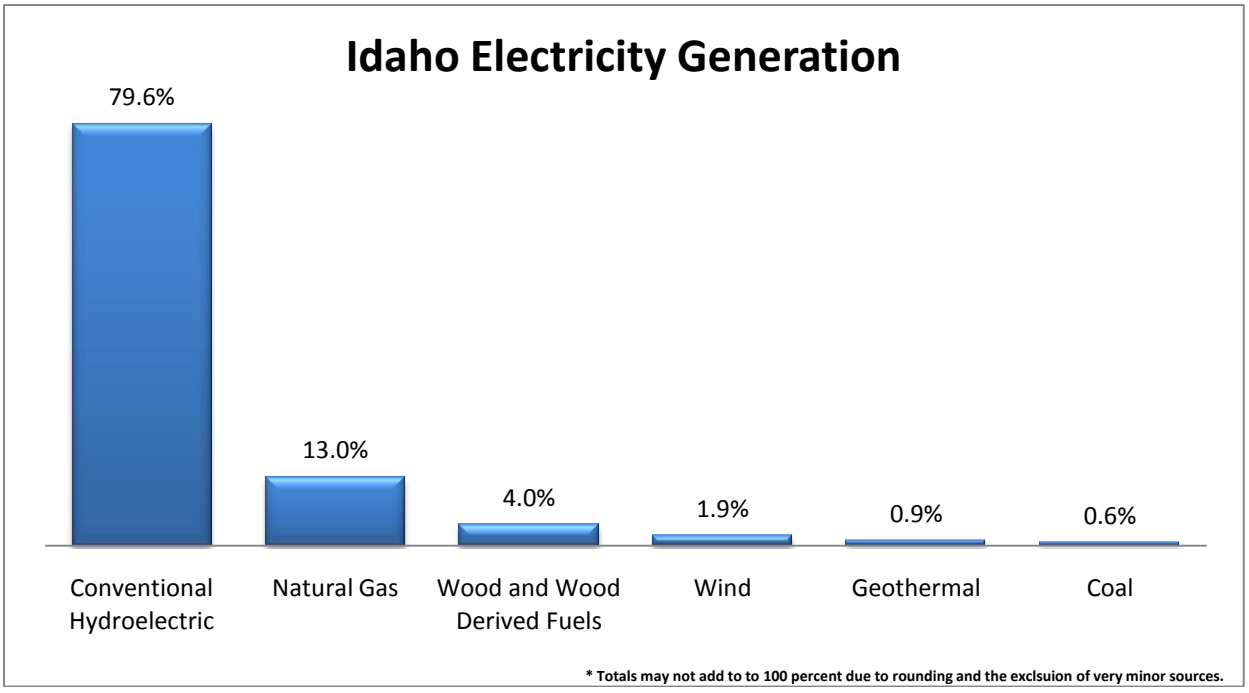
- **Hawaii requires** state agencies to purchase energy-efficient appliances. House Bill 2175 requires state agencies to use Energy Star or other efficiency standards in purchasing.[188]
- **Hawaii does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[186] H.B. 2175 (Haw. 2006), http://hawaii.gov/dbedt/info/energy/efficiency/state/Act96_reprint.pdf.
[187] H.B. 1464 (Haw. 2009), http://www.capitol.hawaii.gov/session2009/bills/HB1464_CD1_.htm.
[188] H.B. 2175 (Haw. 2006), http://www.capitol.hawaii.gov/session2006/Bills/HB2175_CD1_.htm.

Idaho Energy Facts

Idaho – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$29,890	9th lowest
Unemployment	9.5%	18th highest
Gasoline Price, per gallon	$2.95	5th highest
Electricity Price, per kWh	6.49¢	2nd lowest

Idaho has some of the most affordable electricity in the nation, in part large because 80 percent of its electricity is provided by hydroelectricity, one of the most affordable sources of electricity. A greater percentage of electricity is generated from hydroelectricity in Idaho than in any other state. Natural gas provides 13 percent of the state's electricity, with wood biomass contributing four percent of the state's supply.



Idaho has few fossil fuel reserves but enjoys abundant hydroelectric potential on the Snake River and several smaller river basins. Of Idaho's ten largest electricity facilities, six are hydroelectric. The 450-megawatt Hells Canyon Complex on the Snake River is the largest privately owned hydroelectric power complex in the nation and is one of dozens of privately owned hydroelectric power projects in Idaho.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Idaho's regulatory environment that are likely to affect the cost of energy or the cost of using energy. Thus far, Idaho has avoided imposing many regulations.

- **Idaho does not cap** greenhouse gas emissions.
- **Idaho is an observer** of the Western Climate Initiative (WCI), a regional agreement among some American governors and Canadian premiers to target greenhouse gas reductions. The central component of this agreement is the eventual enactment of a cap-and-trade scheme to reduce greenhouse gas emissions 15 percent below 2005 levels by 2020. As an observer of the WCI, Idaho would not be bound to agreements made by WCI members.
- **Idaho does not mandate** that utilities sell a certain percentage of electricity from renewable sources. However, in March 2006, Idaho established a 2-year moratorium on licensing or processing proposals for new coal-fired power plants; all subsequent proposals have been rejected.
- **Idaho does not require** gasoline to be mixed with renewable fuels.
- **Idaho does not have** fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **Idaho requires** new residential and commercial buildings to meet energy efficiency standards. Residential and commercial buildings must comply with the 2006 International Energy Conservation Code (IECC).[189] The IECC, developed by the International Code Council, is a model code that mandates certain energy efficiency standards. State buildings must also meet energy efficiency standards. House Bill 422, enacted in 2008, requires all major state projects to be designed, constructed, and

† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[189] Building Codes Assistance Project, Code Status: Idaho, http://bcap-energy.org/node/65.

certified to be at least 10 to 30 percent more efficient than comparable buildings on similar sites.[190]

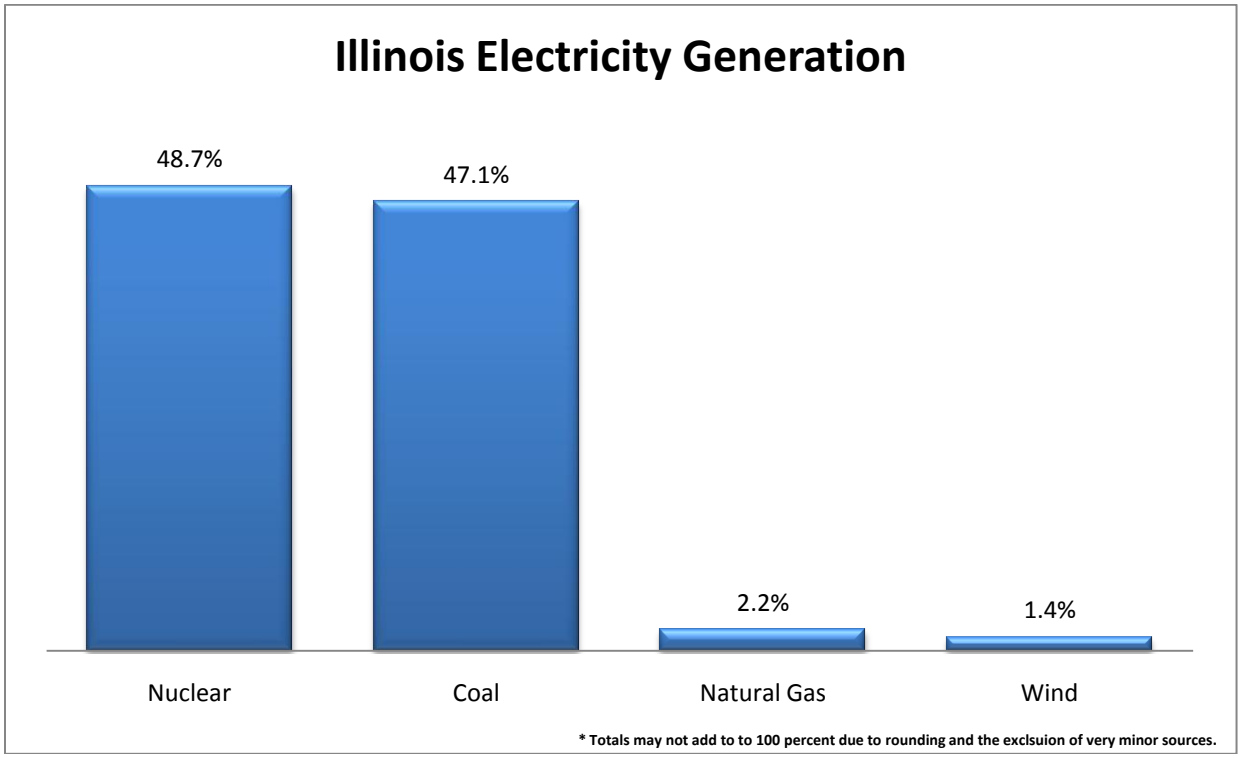
- **Idaho does not mandate** that state agencies purchase energy-efficient appliances.
- **Idaho allows** electric utilities to "decouple" revenue from the sale of electricity, but **does not allow** natural gas utilities to decouple. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[190] Idaho Code § 39-2901 et seq. (2009), http://www.legislature.idaho.gov/idstat/Title39/T39CH29.htm.

Illinois Energy Facts

Illinois – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$40,006	13th highest
Unemployment	11.4%	7th highest
Gasoline Price, per gallon	$2.93	8th highest
Electricity Price, per kWh	9.13¢	21st highest

Illinois has average electricity prices. Coal and nuclear each provide over 45 percent of the state's electricity production. Natural gas and wind contribute minimally to Illinois' electricity production. With eleven reactors at six nuclear power plants, Illinois is the nation's top nuclear generator and provides more than one-tenth of the country's total nuclear power.



Illinois has substantial fossil fuel resources, ranking third among the states in estimated recoverable coal reserves and possessing more than one-tenth of the nation's total. More than half of the state's coal is delivered to other states, while Illinois also imports coal from Wyoming. Illinois leads the Midwest in oil refining capacity. The state also plays a crucial role as a transportation hub for oil and natural gas moving throughout North America. Illinois is a leading ethanol producer, ranking second to Iowa.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Illinois' regulatory environment that are likely to affect the cost of energy or the cost of using energy. One of the reasons that Illinois energy prices are moderately high is because of the regulations that Illinois has implemented.

- **Illinois does not cap** greenhouse gas emissions. However, in 2007, former Governor Rod Blagojevich announced non-binding greenhouse gas emissions targets of 1990 levels by 2020 and 60 percent below 1990 levels by 2050.[191]
- **Illinois is a member** of the Midwestern Regional Greenhouse Gas Reduction Accord, a regional agreement among six American governors and one Canadian premier to target greenhouse gas reductions. The central component of this agreement is the eventual enactment of a cap-and-trade scheme, perhaps supported by low-carbon fuel standards and other supplemental policies.
- **Illinois requires** utilities to sell a certain percentage of electricity from renewable sources. The state's renewable portfolio standard requires utilities to provide 10 percent of electricity sold to be from renewables by June 1, 2015, and 25 percent by June 1, 2025.[192]
    - **Illinois requires** utilities to meet a portion of electricity demand with energy efficiency. Utilities must implement energy efficiency measures to meet 0.2 percent of delivered electricity in 2008 and 2 percent in 2015 and beyond.[193]

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† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[191] Illinois Governor's Office, press release: *Gov. Blagojevich sets goal to dramatically reduce greenhouse gas emissions in Illinois*, http://illinois.gov/PressReleases/ShowPressRelease.cfm?SubjectID=2&RecNum=5715.

[192] Lawrence Berkeley National Laboratory, *Renewables Portfolio Standards in the United States*, http://eetd.lbl.gov/ea/ems/reports/lbnl-154e.pdf.

[193] Public Act 095-0481 (Ill. 2007), http:/www.ilga.gov/legislation/publicacts/95/PDF/095-0481.pdf.

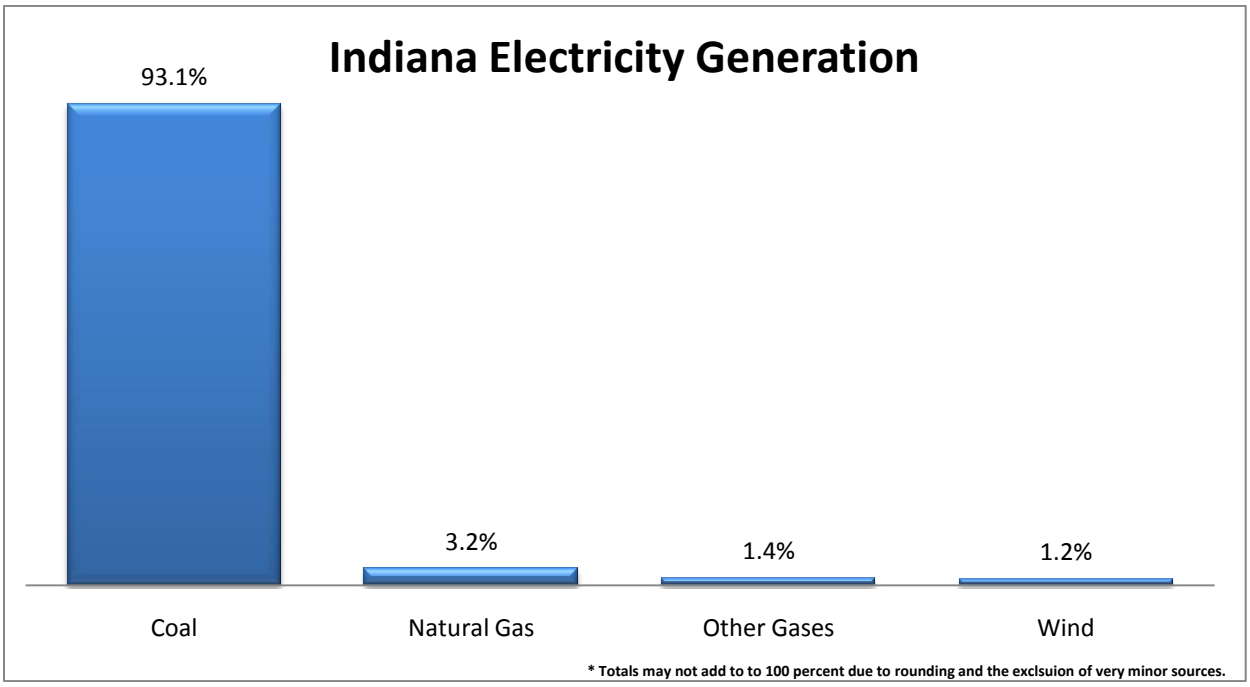
- **Illinois does not require** gasoline to be mixed with renewable fuels. However, the St. Louis metropolitan area and the Chicago metropolitan areas are required to use specially formulated motor gasoline which includes ethanol.[194]
- **Illinois does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **Illinois requires** new residential and commercial buildings to meet energy efficiency standards. Residential and commercial buildings must comply with the 2009 International Energy Conservation Code (IECC). Commercial buildings must also comply with ASHRAE 90.1-2007.[195] The IECC (developed by the International Code Council) and ASHRAE (developed by the American Society of Heating and Refrigeration and Air Conditioning Engineers) are model codes that mandate certain energy efficiency standards. State buildings must also meet energy efficiency standards. New buildings and major renovations smaller than 10,000 square feet must meet the highest practical LEED standard, while new buildings and major renovations larger than 10,000 feet must meet at least the silver LEED standard.[196] There are several levels of standards in the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system.
- **Illinois does not impose** state-based appliance efficiency standards. However, new equipment purchased by executive branch agencies must be Energy Star certified.
- **Illinois does not allow** electric utilities to "decouple" revenue from the sale of electricity but **does allow** gas utilities to decouple revenue from the sale of natural gas. Some states decouple electricity revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[194] Energy Information Administration, *Illinois*, Apr. 1, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=IL.
[195] Building Codes Assistance Project, Code Status: Illinois, http://bcap-energy.org/node/66.
[196] Illinois Capital Development Board, Green Building Resources and Energy Efficiency, http://www.cdb.state.il.us/green_initiatives.shtml.

Indiana Energy Facts

Indiana – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$32,917	17th lowest
Unemployment	9.8%	16th highest
Gasoline Price, per gallon	$2.72	18th lowest
Electricity Price, per kWh	7.48¢	15th lowest

Indiana has below average electricity rates. The state enjoys these prices in large measure because over 90 percent of its electricity is generated from coal. Natural gas meets most of the state's remaining electricity demand.



Indiana has moderate coal deposits in the southwestern part of the state but few other energy resources. The state produces about 3 percent of the nation's coal, as well as minor outputs of oil and natural gas. Indiana's coal meets only about half of its demand, so it imports more coal from Wyoming, West Virginia, and Illinois. Indiana is home is the largest petroleum refinery outside of the Gulf Coast, primarily refining oil from that region. As one of the top corn producing states, Indiana is one of the nation's largest ethanol producers.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Indiana's regulatory environment that are likely to affect the cost of energy or the cost of using energy.

- **Indiana does not cap** greenhouse gas emissions.
- **Indiana is an observer** of the Midwestern Regional Greenhouse Gas Reduction Accord, a regional agreement among six American governors and one Canadian premier to target greenhouse gas reductions. The central component of this agreement is the eventual enactment of a cap-and-trade scheme, perhaps supported by low-carbon fuel standards and other supplemental policies. As an observer of the Accord, Indiana would not be bound to agreements made by Accord members.
- **Indiana does not require** utilities to sell a certain percentage of electricity from renewable sources.
- **Indiana does not require** gasoline to be mixed with renewable fuels. However, reformulated motor gasoline blended with ethanol is required in the Chicago metropolitan area and Louisville, Kentucky metropolitan area.[197]
- **Indiana does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **Indiana requires** residential and commercial buildings to meet energy efficiency standards. Residential buildings must meet a state-developed code based on the 1992 Model Energy Code, while commercial buildings must also meet a state-developed code.[198] The Model Energy Code, developed by the International Code Council, mandates certain energy efficiency standards. State buildings must also meet energy efficiency standards. Governor Mitch Daniels issued Executive Order 08-14 in 2008,

† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

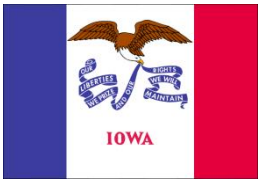
[197] Energy Information Administration, *Indiana*, Apr. 8, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=IN.

[198] Building Codes Assistance Project, Code Status: Indiana, http://bcap-energy.org/node/67.

requiring new state buildings to meet the silver LEED standard or an equivalent standard.[199] The silver LEED standard is one level of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system.

- **Indiana does not impose** state-based appliance efficiency standards.
- **Indiana does not allow** electric utilities to "decouple" revenue from the sale of electricity, but **allows** natural gas utilities to decouple revenue from the sale of natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity or natural gas.

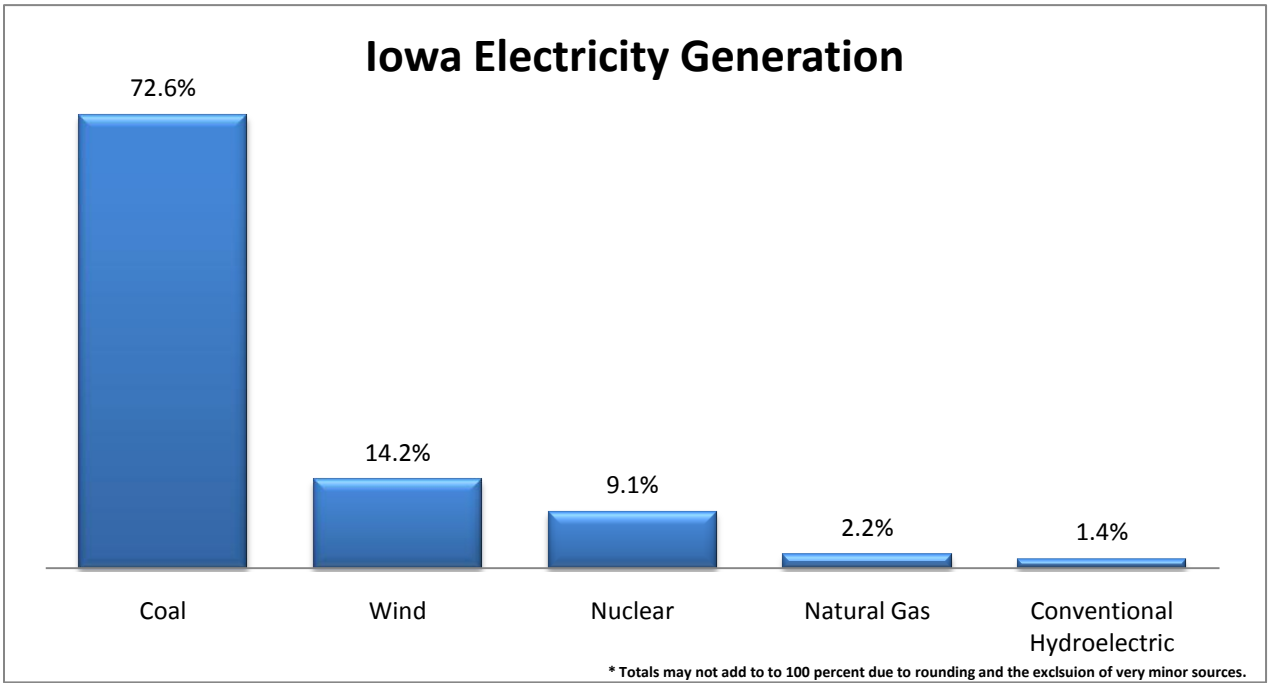
[199] Ind. Exec. Order No. 08-14 (June 24, 2008), http://www.in.gov/gov/files/EO_08_14.pdf.



Iowa Energy Facts

Iowa – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$36,773	23rd highest
Unemployment	6.7%	6th lowest
Gasoline Price, per gallon	$2.75	21st lowest
Electricity Price, per kWh	7.29¢	12th lowest

Like most states in the Midwest, Iowa has low electricity prices in large measure because the majority of its electricity is produced by coal. Natural gas provides almost one fifth of Iowa's total energy demand, but natural gas produces only 2 percent of the state's electricity. Iowa is a leading state in electricity generation from wind energy, with 14 percent of its electricity provided from wind. The state's one nuclear power plant, Duane Arnold, provides 9 percent of Iowa's electricity.



Iowa does not have fossil fuel resources, so most of its coal is shipped by rail from Wyoming and natural gas is delivered through pipelines. Iowa is the nation's largest producer of corn-based ethanol.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Iowa's regulatory environment that are likely to affect the cost of energy or the cost of using energy. Iowa's large number of subsidies, standards, and tax credits make energy more expensive than it would be otherwise.

- **Iowa does not cap** greenhouse gas emissions. However, legislation adopted in April 2007 directs the Climate Change Council to establish a system for reporting and monitoring greenhouse gas emissions.[200] The Iowa General Assembly created the Climate Change Advisory Council in April 2007, which was charged with developing scenarios that include 50 percent greenhouse gas cuts by 2050.[201]
- **Iowa is a member** of the Midwestern Regional Greenhouse Gas Reduction Accord, a regional agreement among six American governors and one Canadian premier to target greenhouse gas reductions. The central component of this agreement is the eventual enactment of a cap-and-trade scheme, perhaps supported by low-carbon fuel standards and other supplemental policies.
- **Iowa requires** utilities to sell a certain amount of electricity from renewable sources. Iowa requires its two investor-owned utilities—MidAmerican Energy and Alliant Energy Interstate Power and Light (IPL)—to own or to contract for a combined total of 105 megawatts (MW) of renewable generating capacity and associated energy production, which can include small hydropower facilities.[202]
- **Iowa requires** gasoline to be mixed with renewable fuels. House File 2754, passed in 2006, mandates that 25 percent of motor fuel come from renewable sources (E10, E85, biodiesel) by 2020.

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† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[200] S.F. 485 (Iowa 2007), http://www.iowadnr.com/air/prof/ghg/files/SF485.pdf.

[201] Iowa Climate Change Advisory Council, Final ICCAC Report, http://www.iaclimatechange.us/capag.cfm.

[202] Lawrence Berkeley National Laboratory, *Renewables Portfolio Standards in the United States*, http://eetd.lbl.gov/ea/ems/reports/lbnl-154e.pdf.

- **Iowa does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **Iowa requires** new residential and commercial buildings to meet energy efficiency standards. Residential and commercial buildings must meet the 2006 International Energy Conservation Code (IECC).[203] The IECC, developed by the International Code Council, is a model code that mandates certain energy efficiency standards. Executive Order 6, issued by Governor Chester Culver in 2008, creates a goal of decreasing the use of electricity, natural gas, fuel oil, and water in all state office buildings by at least 15 percent over the next 5 years.[204]
- **Iowa does not impose** state-based appliance efficiency standards.
- **Iowa does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

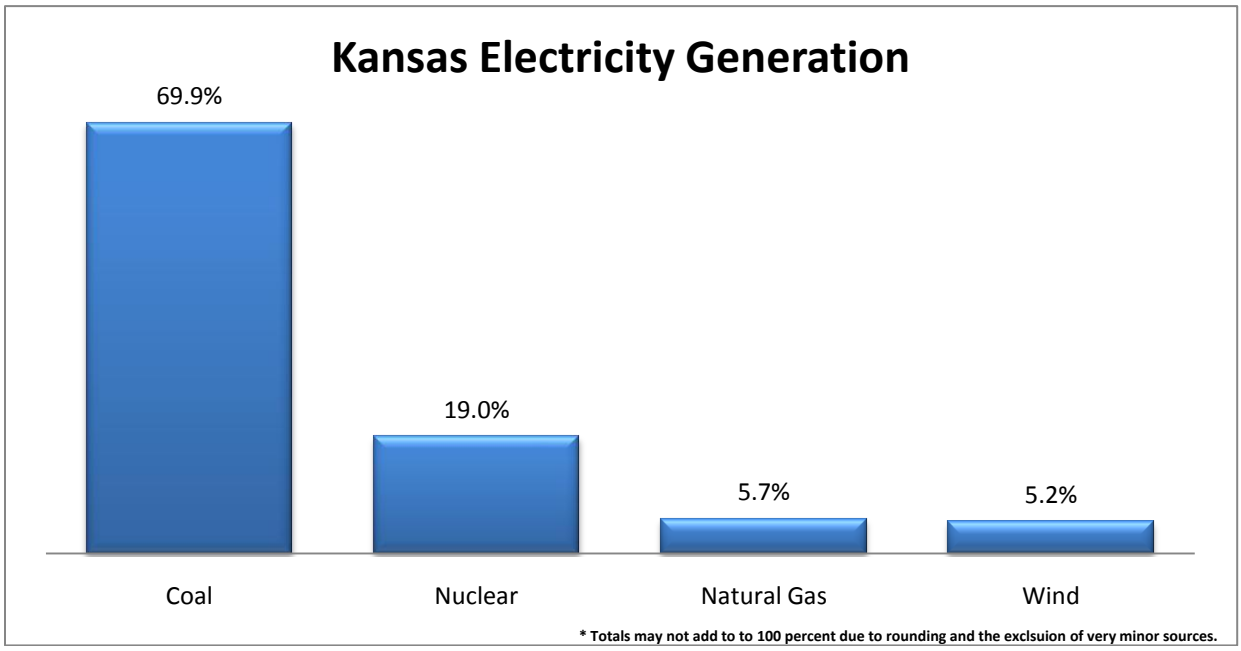
[203] Building Codes Assistance Project, Code Status: Iowa, http://bcap-energy.org/node/68

[204] Iowa Exec. Order No. 6 (Feb. 21, 2008), http://publications.iowa.gov/6275/1/06-080221%5B1%5D.pdf.

Kansas Energy Facts

Kansas – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$35,013	23rd lowest
Unemployment	6.5%	4th lowest
Gasoline Price, per gallon	$2.71	14th lowest
Electricity Price, per kWh	8.07¢	18th lowest

Kansas has moderately low electricity prices, 18 percent below the national average. In large measure, this is because about 70 percent of Kansas's electricity is produced from coal, the most inexpensive source of electricity. Kansas, however, has enacted several policies, including a renewable portfolio standard, which could increase the cost of electricity. Renewables currently produce almost 6 percent of the state's electricity. The state's single-unit Wolf Creek nuclear plant meets most of the state's remaining electricity demand.



Kansas produces substantial quantities of natural gas. It contains the Hugoton Natural Gas Area, the fifth-largest natural gas field and one of the top-producing natural gas fields in the country. In addition, natural gas production from coalbed methane is rapidly expanding in the Cherokee Platform, where reserves have become economically recoverable. The state's infrastructure serves as a transportation hub for natural gas supplies moving across the country. Kansas is also one of the top ten oil-producing states in the nation, producing about 2 percent of the country's output, and is also a major oil refining state.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Kansas's regulatory environment that are likely to affect the cost of energy or the cost of using energy.

- **Kansas does not cap** greenhouse gas emissions.
- **Kansas is a member** of the Midwestern Regional Greenhouse Gas Reduction Accord, a regional agreement among six American governors and one Canadian premier to target greenhouse gas reductions. The central component of this agreement is the eventual enactment of a cap-and-trade scheme, perhaps supported by low-carbon fuel standards and other supplemental policies.
- **Kansas is an observer** of the Western Climate Initiative (WCI), a regional agreement among some American governors and Canadian premiers to target greenhouse gas reductions. The central component of this agreement is the eventual enactment of a cap-and-trade scheme to reduce greenhouse gas emissions 15 percent below 2005 levels by 2020. As an observer of the WCI, Kansas would not be bound to agreements made by WCI members.
- **Kansas requires** utilities to sell a certain percentage of electricity from renewable sources. The state's renewable portfolio standard requires utilities to provide 20 percent of peak demand capacity based on the average demand from the previous three years from renewables by 2020 and beyond.[205] Also, in 2007 Gov. Sebelius's administration became the first state government to reject a permit for a coal-fired power plant because of carbon dioxide emissions.
- **Kansas does not require** gasoline to be mixed with renewable fuels.
- **Kansas does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.

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† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[205] Senate Substitute for House Bill 2369 (Kan. 2009), http://www.kslegislature.org/bills/2010/2369.pdf.

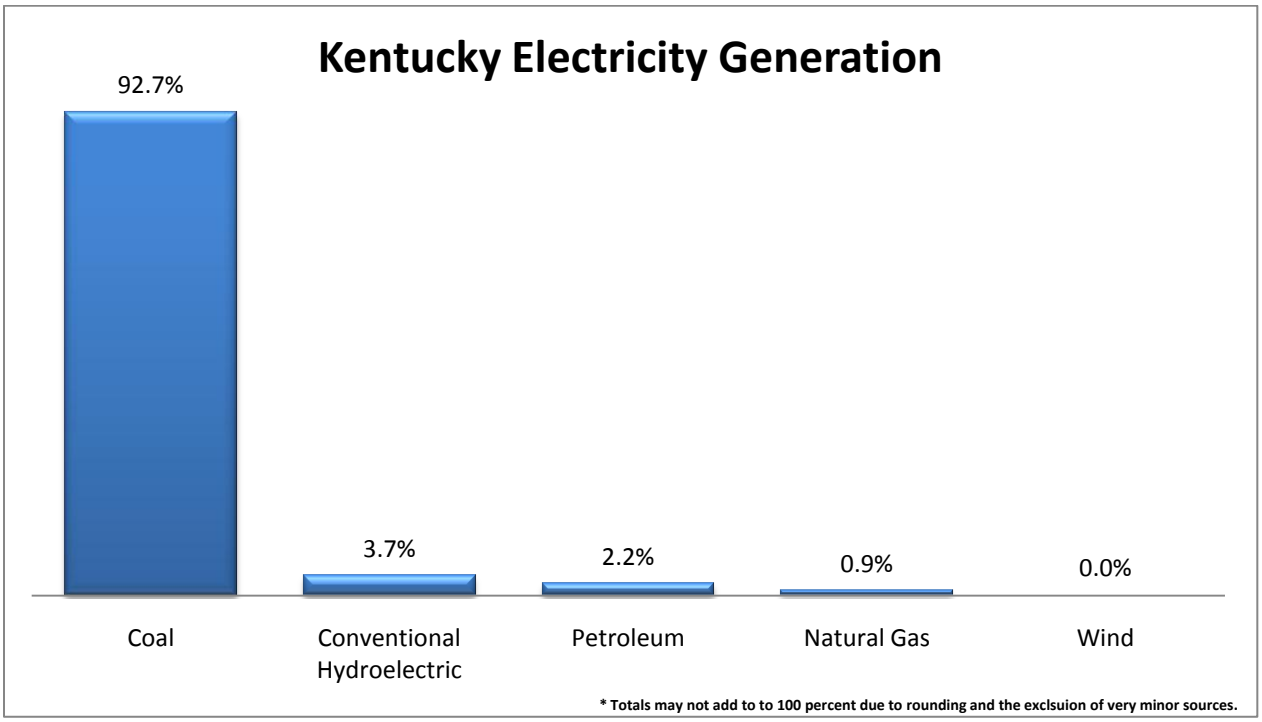
- **Kansas does not require** new residential buildings to meet energy efficiency standards, but **does require** new commercial buildings to do so. Commercial buildings must meet the 2006 International Energy Conservation Code (IECC).[206] The IECC, developed by the International Code Council, is a model code that mandates certain energy efficiency standards. While Kansas does not have a residential energy efficiency code, realtors and homebuilders are required to disclose energy efficiency information to potential buyers for residential buildings.[207]
- **Kansas does not impose** state-based appliance efficiency standards.
- **Kansas does not allow** utilities to "decouple" revenue from the sale of electricity, but the Kansas Corporation Commission is investigating decoupling as a possible policy option. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[206] Building Codes Assistance Project, Code Status: Kansas, http://bcap-energy.org/node/69.
[207] *Id.*

Kentucky Energy Facts

Kentucky – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$29,740	8th lowest
Unemployment	10.9%	11th highest
Gasoline Price, per gallon	$2.72	16th lowest
Electricity Price, per kWh	6.5¢	3rd lowest

Kentucky enjoys some of the most affordable electricity in the nation. In large measure, the low price results from Kentucky's producing more than 90 percent of its electricity by coal.



Nearly one-third of all coal mines in the United States are found in Kentucky. The state accounts for about one-tenth of the country's coal production and is the third-largest producer of coal among the states. Kentucky delivers about three-fourths of the state's coal production to more than two dozen other states. Kentucky produces some natural gas, less, than 1 percent of total U.S. production, but most of the natural gas in Kentucky arrives in pipelines from the Gulf Coast.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Kentucky's regulatory environment that are likely to affect the cost of energy or the cost of using energy. Kentucky has thus far avoided many of the costly energy policies other states are implementing.

- **Kentucky does not cap** greenhouse gas emissions.
- **Kentucky is not a member** of a regional agreement to cap greenhouse gas emissions.
- **Kentucky does not require** utilities to sell a certain percentage of electricity from renewable sources.
- **Kentucky does not require** gasoline to be mixed with renewable fuels. However, reformulated motor gasoline blended with ethanol is required in the Louisville metropolitan area and the Cincinnati metropolitan area.[208]
- **Kentucky does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **Kentucky requires** new residential and commercial buildings to meet energy efficiency standards. The Kentucky Residential Code is based on the 2006 International Energy Conservation Code (IECC) and 2006 International Residential Code (IRC). The Kentucky Building Code, for commercial buildings, is based on the 2006 IECC and 2006 International Building Code (IBC).[209] The IECC, IRC, and IBC, all developed by the International Code Council, are model codes that mandate certain energy efficiency standards. House Bill 2, enacted in 2008, requires all public buildings for which at least 50 percent of the total capital cost is paid by the state to be renovated or designed to meet energy efficiency standards. New buildings must achieve certification from the

† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[208] Energy Information Administration, *Kentucky*, Apr. 8, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=KY.

[209] Database of State Incentives for Renewables and Efficiency, Kentucky Building Energy Codes, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=KY09R&re=1&ee=1.

U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) standards. Larger and more expensive projects are generally held to a higher LEED standard.[210]

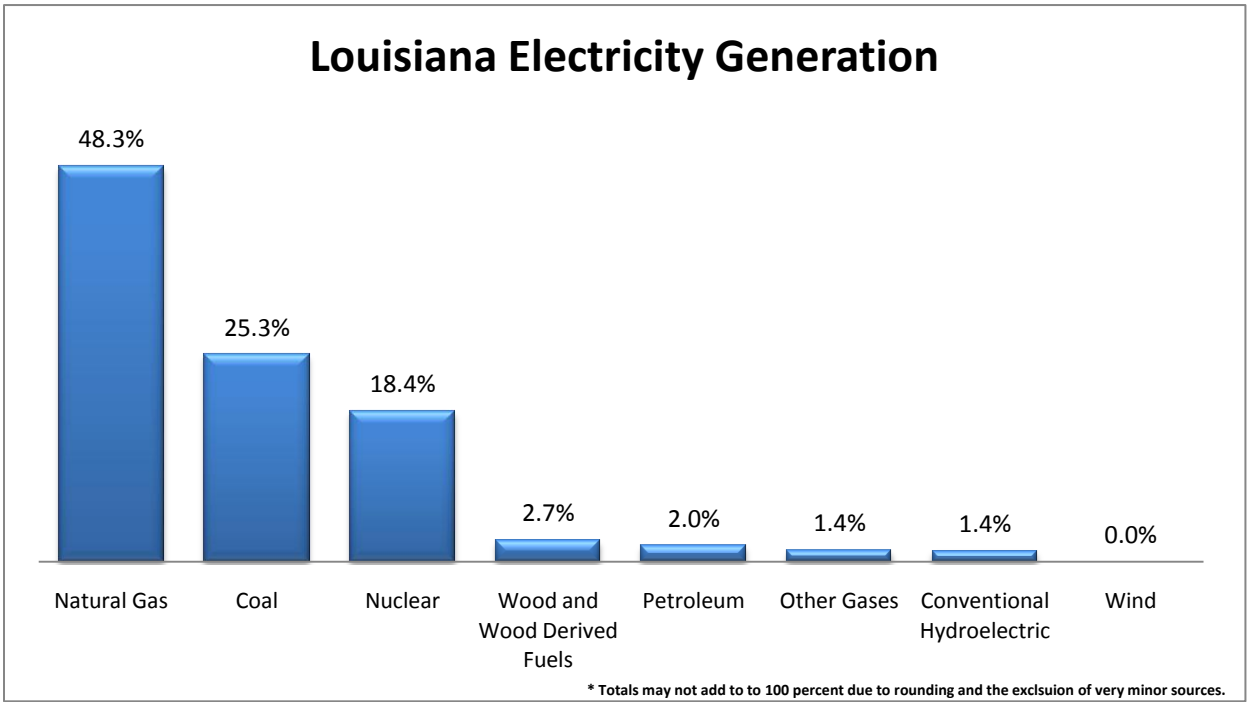
- **Kentucky does not impose** state-based appliance efficiency standards. New products purchased for state buildings must meet Energy Star standards.
- **Kentucky does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[210] Database of State Incentives for Renewables and Efficiency, Kentucky Energy Efficiency Program for State Government Buildings, http://dsireusa.org/incentives/incentive.cfm?Incentive_Code=KY11R&re=0&ee=1.

Louisiana Energy Facts

Louisiana – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$32,842	16th lowest
Unemployment	7.3%	13th lowest
Gasoline Price, per gallon	$2.71	15th lowest
Electricity Price, per kWh	7.16¢	9th lowest

Louisiana has low electricity prices, 28 percent below the national average. This affordability has been aided by the state's rejection of expensive regulations that would increase the price of electricity. Almost half of Louisiana's electricity is generated from natural gas, while coal provides about a quarter of the state's electricity. The state's two single-reactor nuclear power plants produce most of the rest of the state's electricity.



Including production of natural gas from the Louisiana Outer Continental Shelf (OCS), Louisiana is the second largest producer of natural gas in the United States, and fifth largest excluding the OCS. In addition, the state is the nation's fourth largest producer of oil, excluding offshore areas. More oil is refined in Louisiana than any other state except Texas. Louisiana has some of the largest import terminals for natural gas and oil in the country, as well as some of the largest storage capacities nationwide. The Louisiana Offshore Oil Port is the only port in the United States capable of accommodating deep draft tankers. The largest of nine liquefied natural gas import terminals in the United States is located at Sabine.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Louisiana's regulatory environment that are likely to affect the cost of energy or the cost of using energy.

- **Louisiana does not cap** greenhouse gas emissions.
- **Louisiana is not a member** of a regional agreement to cap greenhouse gas emissions.
- **Louisiana does not require** utilities to sell a certain percentage of electricity from renewable sources.
- **Louisiana requires** gasoline to be mixed with renewable fuels. House Bill 685, passed in 2006, requires a 2 percent blend of ethanol in gasoline and a 2 percent blend of biodiesel in diesel.[211]
- **Louisiana does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **Louisiana requires** new residential and commercial buildings to meet energy efficiency standards. Residential buildings must meet the 2006 International Residential Code (IRC), while commercial buildings must meet ASHRAE 90.1-2004 or the 2006 International Energy Conservation Code (IECC). The IRC, IECC (both developed by the International Code Council), and ASHRAE (developed by the American Society of Heating and Refrigeration and Air Conditioning Engineers) are model codes that mandate certain energy efficiency standards. Senate Bill 240, enacted in 2007, requires new and renovated major facilities funded by the state to exceed the state energy code by at least 30 percent. This standard applies to all buildings larger than 15,000 square feet in 2009, all buildings larger than 10,000 square feet in 2010, and all buildings larger than 5,000 square feet in 2011 and thereafter.

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† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[211] Act No. 313 (La. 2006), http://www.legis.state.la.us/billdata/streamdocument.asp?did=399857.

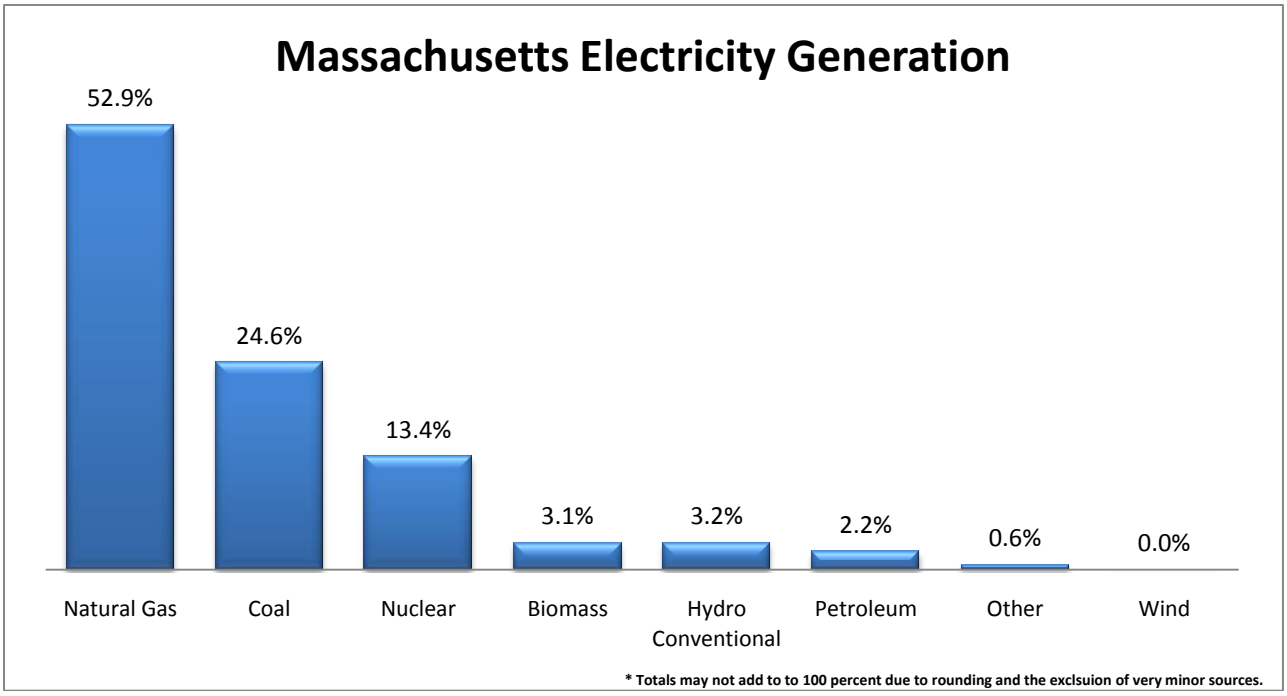
- **Louisiana does not impose** state-based appliance efficiency standards. Executive Order BJ 2008-8, issued by Governor Bobby Jindal, requires the State Division of Administration to increase appliance efficiency standards for state agencies, using Energy Star as a minimum standard.[212]
- **Louisiana does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[212] La. Exec. Order No. BJ 2008-8 (Jan. 30, 2008) http://www.gov.state.la.us/assets/docs/OfficialDocuments/2008EOGreenGovernment.pdf.

Maine Energy Facts

Maine – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$30,637	10th lowest
Unemployment	8.3%	20th lowest
Gasoline Price, per gallon	$2.81	22nd highest
Electricity Price, per kWh	12.89¢	11th highest

Maine's electricity is among the most expensive in the nation. Over half of the state's electricity is generated from natural gas, while another quarter of the state's demand is supplied from hydroelectricity. Maine uses more electricity from burning wood and wood waste than any other state, as these resources provide about 20 percent of the state's electricity.



While Maine does not have fossil fuel resources, it has renewable energy potential. Because of Maine's substantial use of wood as fuel, Maine has the highest percentage of non-hydroelectric renewable energy use in the country.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about the regulatory environment in Maine that are likely to affect the cost of energy or the cost of using energy.

- **Maine does not cap** greenhouse gas emissions. However, as a member of the Regional Greenhouse Gas Initiative, it has imposed a cap on greenhouse gas emissions from power plants.
- **Maine is a member** of the Regional Greenhouse Gas Initiative (RGGI), a regional agreement among ten Northeast states to limit greenhouse gas emissions. This agreement requires states to cap carbon dioxide emissions from the electrical generation sector and to reduce those emissions by 10 percent by 2018 through a cap-and-trade scheme.
- **Maine requires** utilities to sell a certain percentage of electricity from renewable sources. The state's original renewable portfolio standard, enacted in 1999, required utilities to generate 30 percent of their retail electricity sales from renewable sources.[213] A new renewable portfolio standard, enacted in 2006, requires utilities to increase new renewable capacity by 10 percent (placed into service after September 1, 2005) by 2017.[214]
- **Maine does not require** gasoline to be mixed with renewable fuels.
- **Maine imposes** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles. Maine's Board of Environmental Protection adopted amendments to Chapter 127, New Motor

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†Data Sources: Real GDP per capita: Bureau of Economic Analysis, News Release: GDP by State (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, Regional and State Employment and Unemployment– January 2010 (Mar. 10, 2010); Gasoline Prices: American Automobile Association, AAA Daily Fuel Gauge Report (Mar. 16, 2010; Electricity Prices: Energy Information Administration, Electric Power Monthly, Table 5.6.B., Average Retail Price of Electricity, Nov. 2009, (Feb. 25, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html.

[213] ME. REV. STAT. Title 35-A §3210 (2009), http://www.mainelegislature.org/legis/statutes/35-A/title35-Asec3210.html.

[214] Public Utilities Commission, Portfolio Requirement, CMR 65-407-311, http://www.mainelegislature.org/legis/bills/bills_123rd/chapters/PUBLIC403.asp.

Vehicle Emission Standards, in 2005, adopting California's vehicle emissions standards.[215]

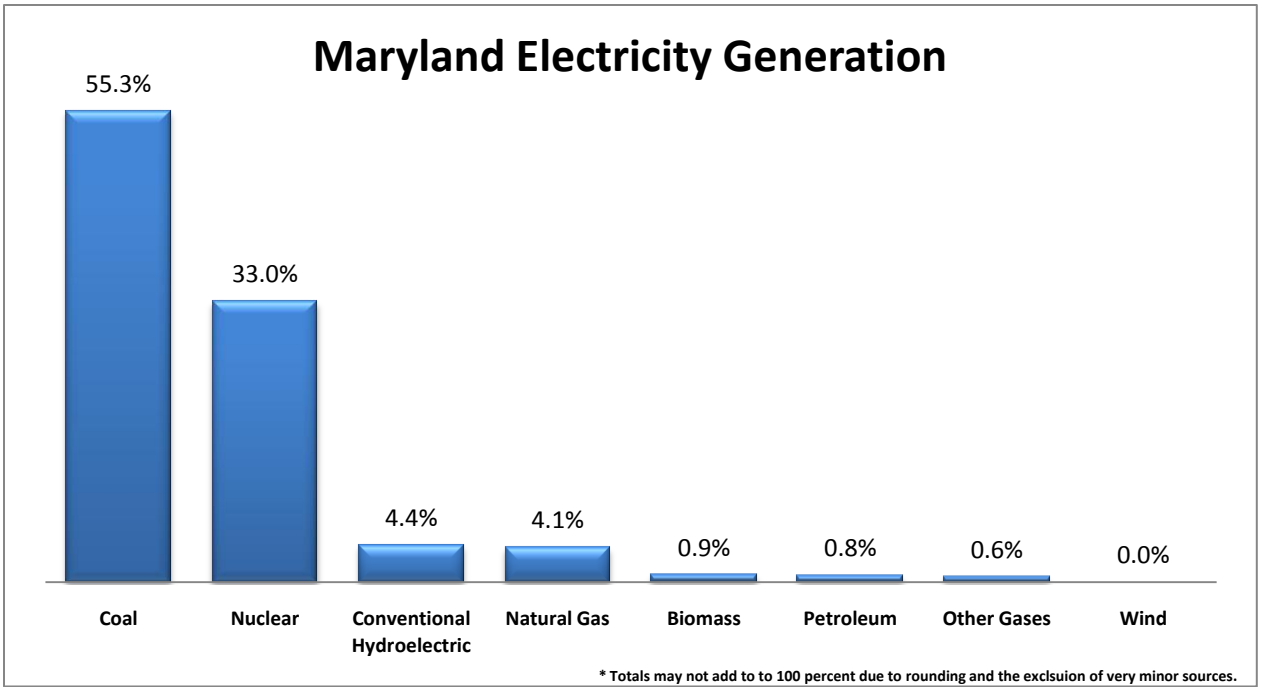
- **Maine requires** new residential and commercial buildings to meet energy efficiency standards. Residential buildings must meet the 2003 International Energy Conservation Code (IECC), while commercial buildings must meet the 2003 IECC or ASHRAE 90.1-2001. The IECC (developed by the International Code Council) and ASHRAE (developed by the American Society of Heating and Refrigeration and Air Conditioning Engineers) are model codes that mandate certain energy efficiency standards. In 2010, the 2009 versions of the IECC and ASHRAE 90.1 will be effective in Maine.[216] New state buildings must also meet energy efficiency standards. Governor John Baldacci signed a 2003 executive order that required new, expanded, or renovated state buildings to incorporate the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) standards, if cost effective.[217] The planning and design of new and substantially renovated state buildings must also consider energy efficiency and aim to exceed the state's commercial energy efficiency standards by at least 20 percent.[218] Since 2007, the state government has also purchased all of its electricity from renewable sources.[219]
- **Maine does not impose** state-based appliance efficiency standards.
- **Maine does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[215] Maine Department of Environmental Protection, 06-096, Ch. 127, New Motor Vehicle Emission Standards, http://www.maine.gov/sos/cec/rules/06/096/096c127.doc.
[216] Building Codes Assistance Project, Code Status: Maine, http://bcap-energy.org/node/72.
[217] Me. Exec. Order No. 08 FY 04/05 (Nov. 24, 2003*), Governor John Baldacci, Executive Order Regarding the use of "LEED" Building Standards for State Buildings*, http://www.maine.gov/tools/whatsnew/index.php?topic=Gov_Executive_Orders&id=21346&v=Article.
[218] Database of State Incentives for Renewables and Efficiency, Maine Energy-Efficient Building Standards for State Facilities, http://dsireusa.org/incentives/incentive.cfm?Incentive_Code=ME09R&re=0&ee=1.
[219] Maine Department of Environmental Protection, *State of Maine BGS Attains 41% Reduction in Carbon Emissions and State Agencies Work Together Toward Clean Government Initiative Goals*, http://www.maine.gov/dep/innovation/gcc/gccbgs.htm.

Maryland Energy Facts

Maryland – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$39,205	15th highest
Unemployment	7.7%	16th lowest
Gasoline Price, per gallon	$2.81	24th highest
Electricity Price, per kWh	13.11¢	10th highest

Maryland has some of the most expensive electricity prices in the country. Although it produces only small amounts of coal from its Appalachian Mountains, the state generates 55 percent of its electricity from coal. Maryland's one nuclear power plant, the dual-unit Calvert Cliffs Nuclear Power Plant, supplies more than 30 percent of the state's electricity.



Maryland has few energy resources. The state has minor reserves of coal in the Appalachian Mountains but imports most of the resources for its energy. Coal is shipped to Maryland from West Virginia and Pennsylvania, while natural gas is delivered through several pipelines from the Gulf Coast. Maryland has one of the nation's nine liquefied natural gas (LNG) import terminals at Cove Point, primarily importing natural gas from Trinidad and Tobago, Egypt, and Norway. Another LNG terminal in Baltimore County has been permitted.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Maryland's regulatory environment that are likely to affect the cost of energy or the cost of using energy.

- **Maryland does not cap** greenhouse gas emissions. However, as a member of the Regional Greenhouse Gas Initiative, it has imposed a cap on greenhouse gas emissions from power plants.
- **Maryland is a member** of the Regional Greenhouse Gas Initiative (RGGI), a regional agreement among ten Northeast states to limit greenhouse gas emissions. This agreement requires states to cap carbon dioxide emissions from the electrical generation sector and to reduce those emissions by 10 percent by 2018 through a cap-and-trade scheme.
- **Maryland requires** utilities to sell a certain percentage of electricity from renewable sources. The state's renewable portfolio standard requires utilities to provide 20 percent of retail electricity sales from renewable sources by 2022, of which 2 percent must be solar.[220]
- **Maryland does not require** gasoline to be mixed with renewable fuels. However, motor gasoline blended with ethanol is required in the Baltimore and Washington, D.C. metropolitan areas.[221]
- **Maryland imposes** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles. The Maryland Clean Cars Act of 2007 adopted California's vehicle emissions standards.[222]

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† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[220] Maryland Public Service Commission, Renewable Portfolio Standard Documents, http://webapp.psc.state.md.us/intranet/ElectricInfo/home_new.cfm.

[221] Energy Information Administration, *Maryland*, Apr. 8, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=MD.

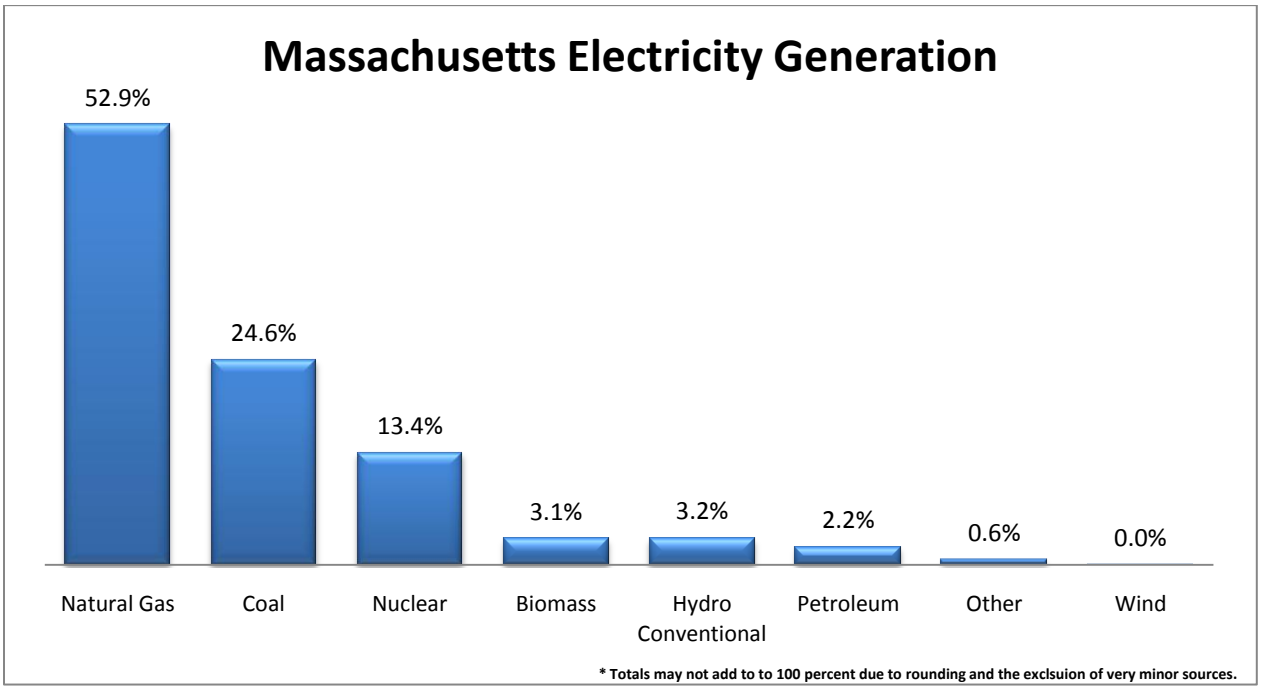
- **Maryland requires** new residential and commercial buildings to meet energy efficiency standards. Residential and commercial buildings must meet the 2006 International Energy Conservation Code (IECC).[223] State buildings also must meet energy efficiency standards. Senate Bill 267, enacted in 2006, requires energy use in state buildings to be reduced by 10 percent by 2010 relative to a 2005 baseline.[224] New state construction, major renovations, and new schools constructed with state assistance must meet the silver LEED standard. The silver LEED standard is one level of the U.S. Green Building Council's Leadership in Energy and Environmental Design standards. For fiscal years 2010 through 2014, the state will pay 50 percent of the local share of extra costs incurred because of the LEED requirement for new schools.
- **Maryland imposes** state-based appliance efficiency standards. These standards apply to bottle-type water dispensers, commercial hot food holding cabinets, residential furnaces, and AC to DC power supplies. Executive Order 01.01.2001.02, issued by Governor Parris Glendening in 2001, requires appliances purchased by state agencies to be Energy Star certified or be in the top 25 percent of energy efficiency when Energy Star products are unavailable.[225]
- **Maryland allows** utilities to "decouple" revenue from the sale of electricity and natural gas. By allowing utilities to decouple, Maryland enabled utilities to increase their revenue by selling less electricity or natural gas.

[222] Maryland Clean Cars Act of 2007, S.B. 103 (Md. 2007), http://mlis.state.md.us/2007RS/chapters_noln/Ch_111_sb0103E.pdf.
[223] Building Codes Assistance Project, Code Status: Maryland, http://bcap-energy.org/node/73.
[224] Database of State Incentives for Renewables and Efficiency, Maryland Energy Conservation in State Buildings, http://dsireusa.org/incentives/incentive.cfm?Incentive_Code=MD12R&re=0&ee=1.
[225] Md. Exec. Order No. 01.01.2001.02 (Mar. 13, 2001), http://www.mde.state.md.us/assets/document/EO-0101200102.pdf.

Massachusetts Energy Facts

Massachusetts – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$48,088	4th highest
Unemployment	9.5%	18th highest
Gasoline Price, per gallon	$2.74	19th lowest
Electricity Price, per kWh	15.53¢	4th highest

Massachusetts has some of the most expensive electricity in the United States. More than half of the state's electricity is generated from natural gas, while the Pilgrim Nuclear Station produces another 13 percent. Massachusetts is the only state in New England that uses coal for a significant portion of its electricity supply, generating about a quarter of its electricity from coal delivered from Colorado and West Virginia. Massachusetts has several hydroelectric facilities and is one of the top generators of electricity from landfill gas and municipal solid waste. Combined, these resources account for about 6 percent of the state's overall electricity production.



Massachusetts does not have fossil fuel resources, but the state has renewable energy potential. That includes wind energy off the Atlantic Coast and in the Berkshire Mountains, although wind now barely contributes to Massachusetts's energy supply. An offshore wind power project is proposed off of Cape Cod. Also, much of Massachusetts is covered with dense forest, offering possible biomass resources. However, controversy exists for both offshore wind

and biomass in the State. Wood generation has been under attack because of pollution and truck haulage issues. Massachusetts is home to two of the nine liquefied natural gas terminals in the United States: Everett and Offshore Boston.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Massachusetts's regulatory environment that are likely to affect the cost of energy or the cost of using energy.

- **Massachusetts caps** greenhouse gas emissions. Senate Bill 2540, passed in 2008, requires the Commonwealth to reduce its greenhouse gas emissions by 80 percent from 1990 levels by 2050.[226] As a member of the Regional Greenhouse Gas Initiative, it has also imposed a cap on greenhouse gas emissions from power plants.
- **Massachusetts is a member** of the Regional Greenhouse Gas Initiative (RGGI), a regional agreement among ten Northeast states to limit greenhouse gas emissions. This agreement requires states to cap carbon dioxide emissions from the electrical generation sector and to reduce those emissions by 10 percent by 2018 through a cap-and-trade scheme.
- **Massachusetts requires** utilities to sell a certain percentage of electricity from renewable sources. The state's renewable portfolio standard requires electric utilities to provide 15 percent of electricity sales from renewables by December 31, 2020, with one additional percentage point of renewable-generated electricity each year after 2020.[227]

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† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[226] An Act Establishing the Global Warming Solutions Act, Chapter 298 of the Acts of 2008, http://www.mass.gov/legis/laws/seslaw08/sl080298.htm.

[227] Lawrence Berkeley National Laboratory, *Renewables Portfolio Standards in the United States*, http://eetd.lbl.gov/ea/ems/reports/lbnl-154e.pdf.

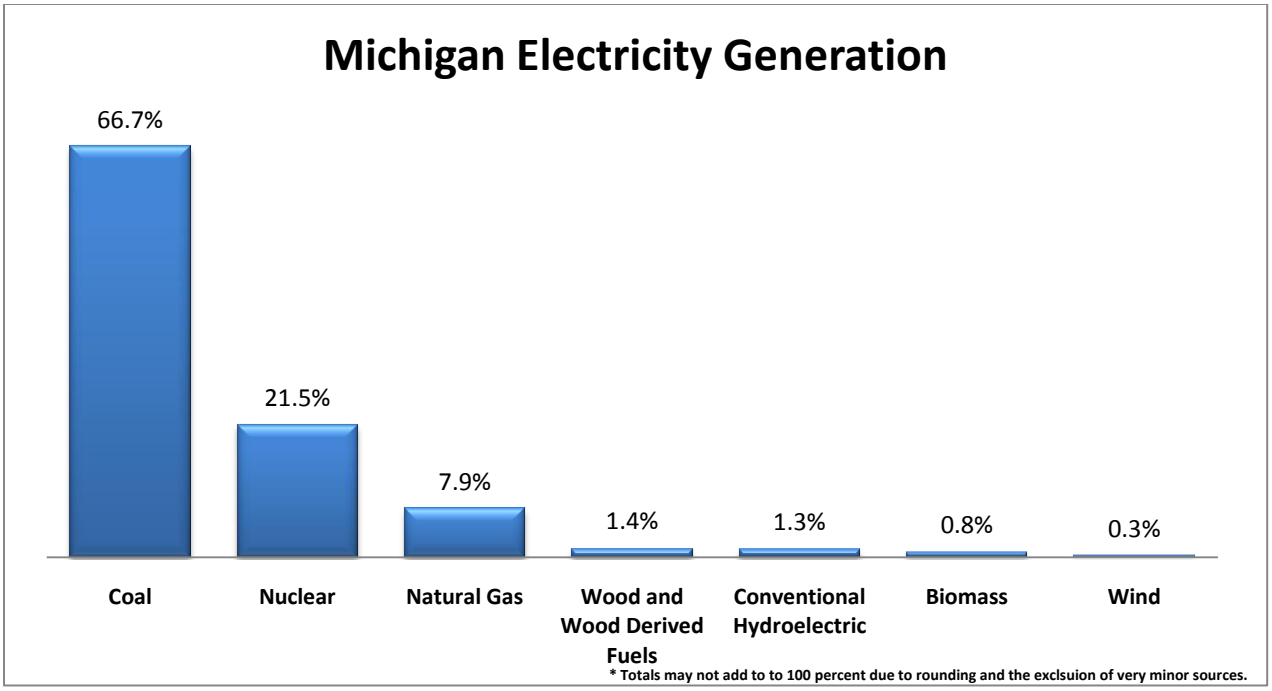
- **Massachusetts requires** diesel to be mixed with renewable fuels. House Bill 4951, passed in 2008, requires that 5 percent of diesel be composed of biodiesel by 2013.[228] It also grants a gasoline tax exemption to biofuels and requires the state to develop and enter an agreement with other RGGI states to implement a low-carbon fuel standard. Massachusetts also requires the statewide use of reformulated motor gasoline blended with ethanol.[229]
- **Massachusetts imposes** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles. Massachusetts adopted California's vehicle emissions standards in 2006.[230]
- **Massachusetts requires** new residential and commercial buildings to meet energy efficiency standards. Residential and commercial buildings must meet the 2006 International Energy Conservation Code (IECC) or an equivalent code.[231] The IECC, developed by the International Code Council, is a model code that mandates certain energy efficiency standards. A new state code based on the 2009 IECC is under development. Public buildings must also meet energy efficiency standards. In 2007, Governor Deval Patrick issued Executive Order 484, requiring new state buildings and significant renovations larger than 20,000 square feet to meet the Massachusetts standard based on the U.S. Green Building Council's Leadership in Energy and Environmental Development standards.[232] The executive order also instituted a variety of non-binding energy efficiency goals.
- **Massachusetts imposes** state-based appliance efficiency standards. Those standards currently apply to medium-voltage dry-type transformers, metal halide lamp fixtures, residential furnaces and boilers, residential furnace fans, state-regulated incandescent reflector lamps, and single voltage external power supplies.[233] Executive Order 484 also requires that new office equipment in public buildings must be Energy Star certified.
- **Massachusetts allows** utilities to "decouple" revenue from the sale of electricity and natural gas. By decoupling revenue from actual sales of electricity and natural gas, the state has allowed utilities to increase their revenue by selling less electricity and natural gas.

[228] An Act Relative to clean Energy Biofuels, MASS. GEN. LAWS Chapter 206 (2008), http://www.mass.gov/legis/laws/seslaw08/sl080206.htm.
[229] Energy Information Administration, *Massachusetts*, Apr. 8, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=MA.
[230] Massachusetts Department of Environmental Protection, 310 CMR 7.40, http://www.mass.gov/dep/air/laws/levregs.pdf.
[231] Building Codes Assistance Project, Code Status: Massachusetts, http://bcap-energy.org/node/74.
[232] Mass. Exec. Order No. 484 (Apr. 18, 2007), http://www.mass.gov/Agov3/docs/Executive%20Orders/Leading%20by%20Example%20EO.pdf.
[233] Database of State Incentives for Renewables and Efficiency, Massachusetts Appliance Efficiency Standards, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=MA09R&re=0&ee=1.

Michigan Energy Facts

Michigan – Select Economic and Energy Data[†]		State Rank
Real Gross Domestic Product, per capita	$32,601	14th lowest
Unemployment	14.1%	1st highest
Gasoline Price, per gallon	$2.78	25th highest
Electricity Price, per kWh	9.68¢	17th highest

Michigan has average electricity prices, with over 65 percent of the state's electricity generated from coal. The state's three nuclear power plants together provide over 21 percent of the state's electricity generation, with natural gas supplying much of the rest. Michigan is considered a major generator of electricity from wood and wood waste, but these resources supply about 2 percent of Michigan's electricity.



Michigan does not have coal resources and instead imports coal from Wyoming and Montana. Michigan has more natural gas reserves than any other state in the Great Lakes region but lacks other energy resources. The state's Antrim natural gas fields in the northern Lower Peninsula are among the largest in the nation. Michigan also has more underground natural gas storage capacity than any other state, with more than one-tenth of national capacity. Additionally, the state has some oil production and substantial ethanol production potential.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Michigan's regulatory environment that are likely to affect the cost of energy or the cost of using energy.

- **Michigan does not cap** greenhouse gas emissions.
- **Michigan is a member** of the Midwestern Regional Greenhouse Gas Reduction Accord, a regional agreement among six American governors and one Canadian premier to target greenhouse gas reductions. The central component of this agreement is the eventual enactment of a cap-and-trade scheme, perhaps supported by low-carbon fuel standards and other supplemental policies.
- **Michigan requires** utilities to sell a certain percentage of electricity from renewable sources. The state's renewable portfolio standard requires most utilities to provide 10 percent of retail electricity sales from renewable sources by 2015. However, Detroit Edison and Consumer's Power must generate 600 megawatts and 500 megawatts of electricity from renewables, respectively.[234]
- **Michigan does not require** gasoline to be mixed with renewable fuels. However, in the Detroit metropolitan area, Michigan requires the use of gasoline blended to reduce evaporative emissions.[235]
- **Michigan does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **Michigan requires** new residential and commercial buildings to meet energy efficiency standards. Residential buildings must meet the 2003 International Residential Code

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† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[234] Lawrence Berkeley National Laboratory, *Renewables Portfolio Standards in the United States*, http://eetd.lbl.gov/ea/ems/reports/lbnl-154e.pdf.

[235] Energy Information Administration, *Michigan*, Apr. 8, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=MI.

(IRC), while commercial buildings must meet ASHRAE 90.1-1999.[236] The IRC (developed by the International Code Council) and ASHRAE (developed by the American Society of Heating and Refrigeration and Air Conditioning Engineers) are model codes that mandate certain energy efficiency standards. Governor Jennifer Granholm issued Executive Directive 2005-04 in 2005, stating that larger new state buildings must strive to meet the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) standards and use Energy Star materials, when possible.[237] The directive also targets a 10 percent cut in state building energy use by 2008, and by 2015 a 20 percent reduction, relative to 2002.

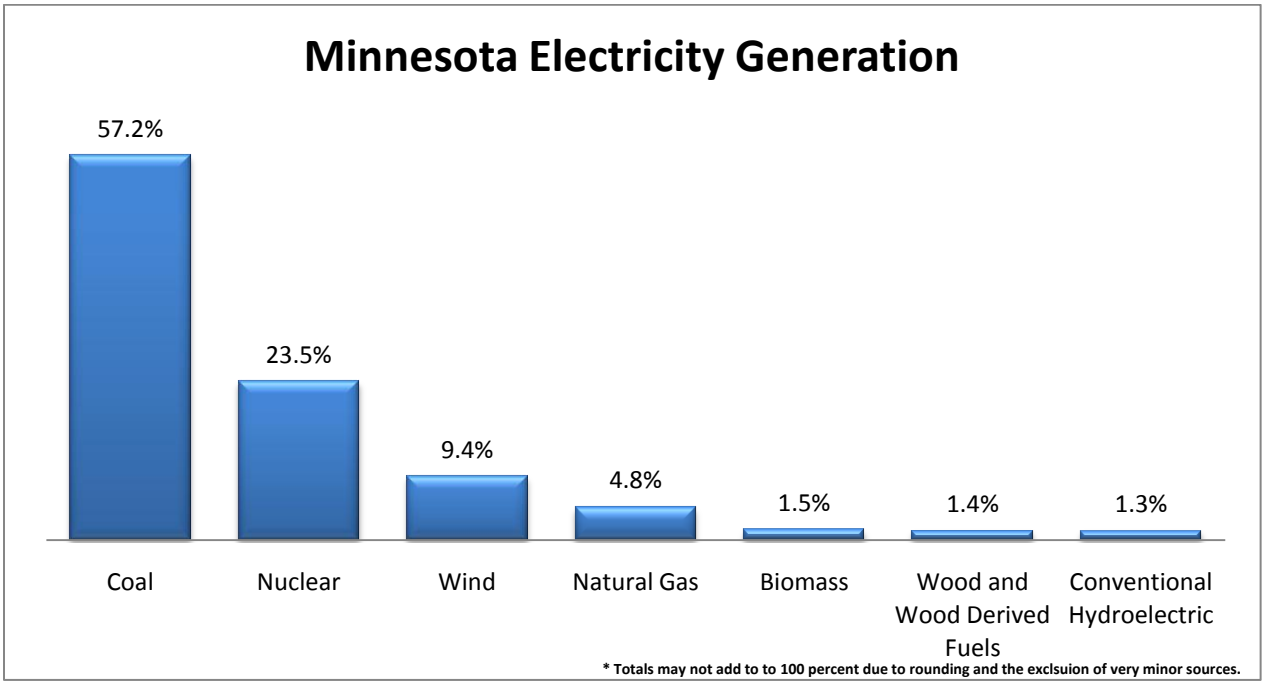
- **Michigan does not impose** state-based appliance efficiency standards. Executive Directive 2005-04 directs state agencies to purchase Energy Star electronics and appliances.[238]
- **Michigan does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[236] Database of State Initiatives for Renewables and Efficiency, Michigan Building Energy Codes, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=MI06R&re=0&ee=1.
[237] Mich. Exec. Order No. 2005-4 (Apr. 22, 2005), http://michigan.gov/gov/0,1607,7-168-21975_22515-116177--,00.html.
[238] *Id.*

Minnesota Energy Facts

Minnesota – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$41,573	9th highest
Unemployment	7.3%	13th lowest
Gasoline Price, per gallon	$2.75	20th lowest
Electricity Price, per kWh	8.13¢	19th lowest

Minnesota has below average electricity prices. Coal produces almost 60 percent of Minnesota's electricity, and two nuclear plants contribute nearly a quarter of the state's electricity generation. Minnesota is among the top states in wind power generation, which provides over 9 percent of the state's electricity.



Though coal provides almost 60 percent of Minnesota's electricity, the state does not have its own fossil fuel resources. Instead, coal is delivered from Montana and Wyoming. The state is home to two oil refineries, which process crude that comes primarily from Canada. Minnesota is a leading producer of ethanol, which has been supported by the state government through a variety of production incentives and mandates. The state has more E85 refueling stations than any other state having encouraged its production and use—a blend of 85 percent ethanol and 15 percent motor gasoline.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Minnesota's regulatory environment that are likely to affect the cost of energy or the cost of using energy.

- **Minnesota does not cap** greenhouse gas emissions.
- **Minnesota is a member** of the Midwestern Regional Greenhouse Gas Reduction Accord, a regional agreement among six American governors and one Canadian premier to target greenhouse gas reductions. The central component of this agreement is the eventual enactment of a cap-and-trade scheme, perhaps supported by low-carbon fuel standards and other supplemental policies.
- **Minnesota requires** utilities to sell a certain percentage of electricity from renewable sources. The state's renewable portfolio standard requires utilities to provide 25 percent of retail electricity sales from renewable sources by December 31, 2025. [239] Xcel Energy must provide 30 percent of retail electricity sales from renewables by December 31, 2020, with "at least" 25 percent generated by wind-energy or solar energy systems, with solar limited to no more than 1 percent of the requirement.
- **Minnesota requires** gasoline to be mixed with renewable fuels. Senate File 4, passed in 2005, mandates that all gasoline contain 20 percent ethanol by 2013.[240] This requirement relies on approval for mixing 20 percent ethanol into gasoline from the federal Environmental Protection Agency. Without that approval, Minnesota's law requires that all gasoline contain 10 percent ethanol by 2013. Senate File 3683, passed in 2008, mandates that all diesel contain 20 percent biodiesel between the months of April and October by 2015. From November to March, all diesel must contain 5 percent biodiesel.[241]

[†]Data Sources: Real GDP per capita: Bureau of Economic Analysis, News Release: GDP by State (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, Regional and State Employment and Unemployment– January 2010 (Mar. 10, 2010); Gasoline Prices: American Automobile Association, AAA Daily Fuel Gauge Report (Mar. 16, 2010; Electricity Prices: Energy Information Administration, Electric Power Monthly, Table 5.6.B., Average Retail Price of Electricity, Nov. 2009, (Feb. 25, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html.

[239] MINN. STAT. § 216B.1691(2009), https://www.revisor.leg.state.mn.us/statutes/?id=216B.1691.

[240]A bill for an act relating to the operation of state government, S.F. No. 3683 (Minn. 2008), https://www.revisor.leg.state.mn.us/bin/bldbill.php?bill=S3683.4.html&session=ls85.

[241] *Id.*

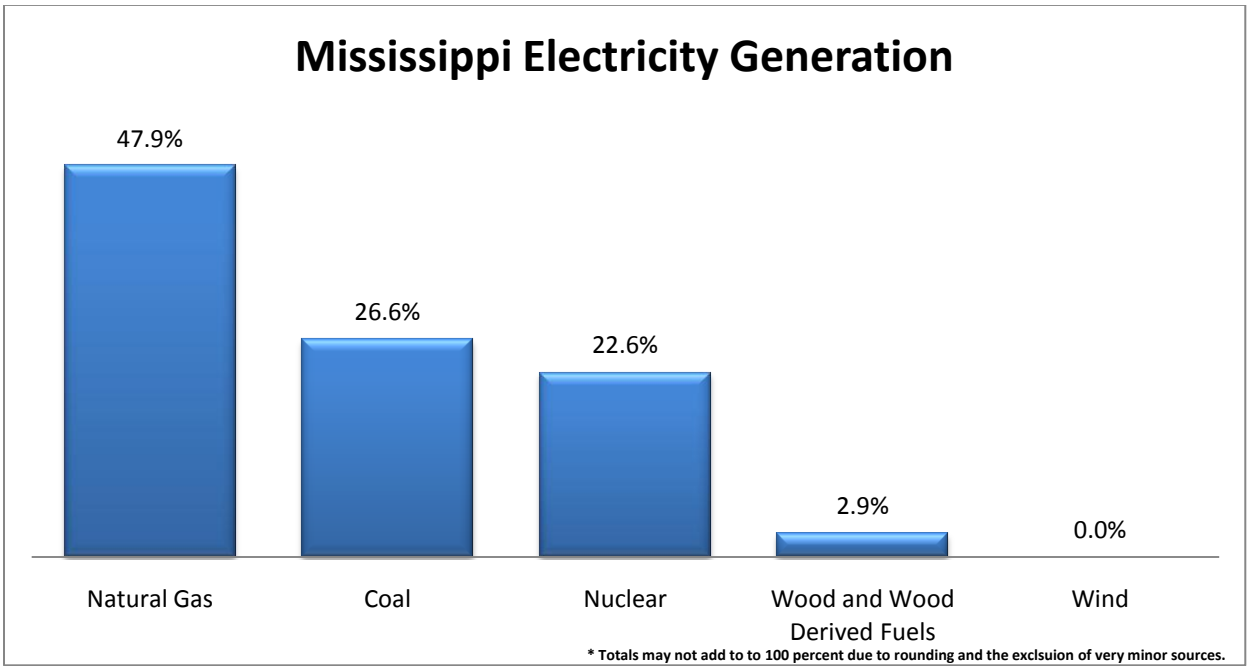
- **Minnesota does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **Minnesota requires** new residential and commercial buildings to meet energy efficiency standards. Residential and commercial buildings in localities with a population greater than 2,500 must enforce the Minnesota State Building Code, which is based on the 2006 International Residential Code and ASHRAE 90.1-2004.[242] The IRC (developed by the International Code Council) and ASHRAE (developed by the American Society of Heating and Refrigeration and Air Conditioning Engineers) are model codes that mandate certain energy efficiency standards. Governor Tim Pawlenty signed Executive Order 05-16 in 2006, committing state agencies to reduce energy use in state buildings by 10 percent in the year.[243] However, actual energy use was reduced only 4.8 percent compared to 2005.[244] New construction and major renovations funded fully or in part with state bonds must exceed the 2004 state energy code by 30 percent.[245]
- **Minnesota does not impose** state-based appliance efficiency standards.
- **Minnesota does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[242] Building Codes Assistance Project, Code Status: Minnesota, http://bcap-energy.org/node/76.
[243] Minn. Exec. Order No. 05-16 (2005), http://www.governor.state.mn.us/priorities/governorsorders/executiveorders/2005/PROD005605.html.
[244] Database of State Incentives for Renewables and Efficiency, Minnesota Energy Reduction Plan for State Buildings, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=MN12R&re=0&ee=1.
[245] Database of State Incentives for Renewables and Efficiency, Minnesota Sustainable Building Guidelines for New State Construction and Renovations, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=MN04R&re=0&ee=1.

Mississippi Energy Facts

Mississippi – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$24,403	1st lowest
Unemployment	11.4%	7th highest
Gasoline Price, per gallon	$2.69	9th lowest
Electricity Price, per kWh	8.83¢	24th highest

Mississippi has below average electricity prices. More than 47 percent of Mississippi's electricity is generated from natural gas, and coal produces over one-fourth of Mississippi's electricity. Another 22 percent of the state's electricity is generated from nuclear, which is provided from the state's only nuclear reactor, the Grand Gulf Nuclear Power Station.



Mississippi has some energy resources, with oil and natural gas fields in the southern half of the state, but does not produce enough oil and gas to meet in-state demand.[246] Though the state currently produces just small amounts of oil and natural gas, recent discoveries along the Gulf Coast and in the northern part of the state may promise important new deposits. The proximity of the state to the petroleum resources in the Gulf of Mexico makes its gasoline some of the nation's most affordable along with the fact that it is one of the few states that allow statewide use of conventional motor gasoline.

[246] Energy Information Administration, *Mississippi: State Energy Profile*, Mar. 4, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=MS.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Mississippi's regulatory environment that are likely to affect the cost of energy or the cost of using energy. Mississippi has thus far avoided many of the costly energy policies other states are implementing.

- **Mississippi does not cap** greenhouse gas emissions.
- **Mississippi is not a member** of a regional agreement to cap greenhouse gas emissions.
- **Mississippi does not require** utilities to sell a certain percentage of electricity from renewable sources.
- **Mississippi does not require** gasoline to be mixed with renewable fuels.
- **Mississippi does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **Mississippi does not require** new residential and commercial buildings to meet energy efficiency standards. State-owned, public, and high-rise buildings must comply with ASHRAE 90-1975.[247] ASHRAE 90, developed by the American Society of Heating and Refrigeration and Air Conditioning Engineers, is a model code that mandates certain energy efficiency standards.
- **Mississippi does not impose** state-based appliance efficiency standards.
- **Mississippi does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

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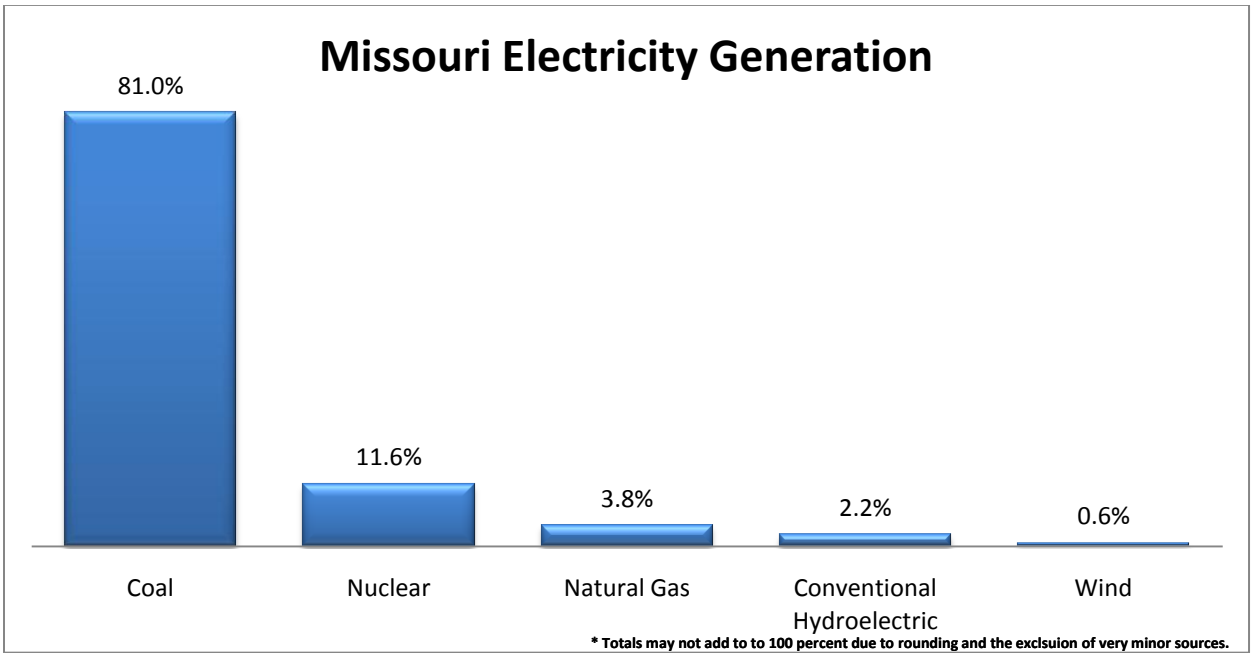
† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[247] Building Codes Assistance Project, Code Status: Mississippi, http://bcap-energy.org/node/77.

Missouri Energy Facts

Missouri – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$32,779	15th lowest
Unemployment	9.4%	23rd highest
Gasoline Price, per gallon	$2.59	1st lowest
Electricity Price, per kWh	7.24¢	11th lowest

Despite not having many energy resources, Missouri has some of the most affordable energy prices in the United States. Missouri has lower electricity prices, in large part, because over 80 percent of its electricity is generated from coal. Nuclear provides more than 10 percent of the state's electricity.



Even though Missouri was the first state west of the Mississippi to commercially produce coal, the state's coal production is now minimal. Most of the coal used for Missouri's electricity generation is delivered from Wyoming.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Missouri's regulatory environment that are likely to affect the cost of energy or the cost of using energy. Missouri has thus far avoided many of the costly energy policies other states are implementing.

- **Missouri does not cap** greenhouse gas emissions.
- **Missouri is not a member** of a regional agreement to cap greenhouse gas emissions.
- **Missouri requires** utilities to sell a certain percentage of electricity from renewable sources. The state's renewable portfolio standard requires that investor-owned utilities provide 15 percent of retail electricity sales from renewable sources by 2021 and thereafter, of which 0.3 percent must be from solar. [248] Utilities may be excused from their obligation for events beyond their control or if the cost of compliance with the standard increases retail electricity rates by more than 1 percent.
- **Missouri requires** gasoline to be mixed with renewable fuels. House Bills 1270 and 1027, passed in 2006, mandate that all non-premium gasoline must contain 10 percent ethanol.[249] Also, Missouri requires that St. Louis and Kansas City metropolitan areas use reformulated gasoline blended with ethanol.[250]
- **Missouri does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **Missouri does not require** new residential and commercial buildings to meet energy efficiency standards. State-owned and state-leased buildings, however, must meet a standard at least as stringent as the 2006 International Energy Conservation Code

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†Data Sources: Real GDP per capita: Bureau of Economic Analysis, News Release: GDP by State (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, Regional and State Employment and Unemployment– January 2010 (Mar. 10, 2010); Gasoline Prices: American Automobile Association, AAA Daily Fuel Gauge Report (Mar. 16, 2010; Electricity Prices: Energy Information Administration, Electric Power Monthly, Table 5.6.B., Average Retail Price of Electricity, Nov. 2009, (Feb. 25, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html.

[248] Mo. Rev. Stat. § 393.1030 (2010), http://www.moga.mo.gov/statutes/chapters/chap393.htm.

[249] H.B. 1270 & 1027 (Mo. 2006), http://www.house.mo.gov/content.aspx?info=/bills061/biltxt/truly/HB1270T.HTM.

[250] Energy Information Administration, *Missouri*, Apr. 8, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=MO.

(IECC).[251] The IECC, developed by the International Code Council, is a model code that mandates certain energy efficiency standards.

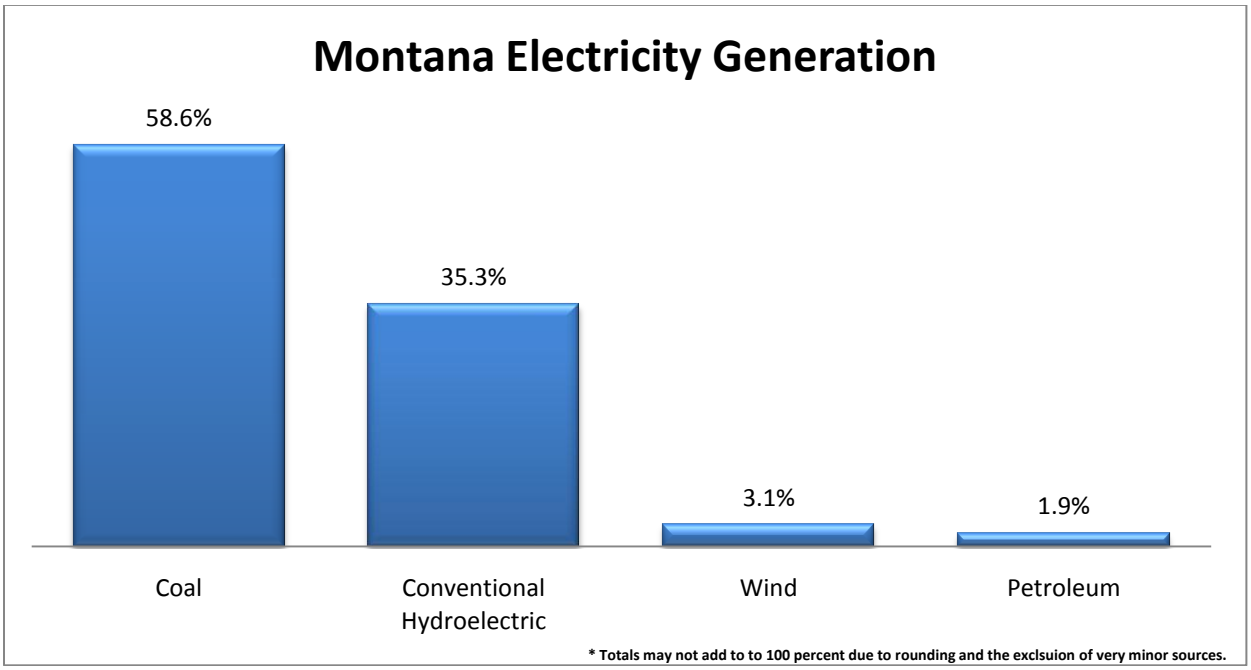
- **Missouri does not impose** state-based appliance efficiency standards. Senate Bill 376, enacted in 2009, requires appliances purchased with state funds to be Energy Star certified.[252]
- **Missouri does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[251] Database of State Incentives for Renewables and Efficiency, Missouri Life-Cycle Analysis and Energy Efficiency in State Buildings, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=MO09R&re=0&ee=1.
[252] S.B. 376 (Mo. 2009), http://www.senate.mo.gov/09info/pdf-bill/tat/SB376.pdf.

Montana Energy Facts

Montana – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$28,170	4th lowest
Unemployment	6.9%	8th lowest
Gasoline Price, per gallon	$2.86	14th highest
Electricity Price, per kWh	7.44¢	14th lowest

Montana has low electricity prices (25 percent lower than the national average) and relies on coal for almost 60 percent of its electricity production. Hydroelectricity contributes another third of Montana's electricity production, while wind and petroleum provide smaller amounts of electricity.



Montana is home to more than a quarter of the country's estimated recoverable coal reserves, as well as large deposits of oil and natural gas. Montana provides about 4 percent of the nation's coal production and exports coal to more than 15 states. In addition, the state accounts for about 2 percent of oil production in the nation. Montana also has substantial hydroelectric potential from rivers flowing out of the Rocky Mountains and is one of the top hydroelectric producers in the country. Six of the state's ten largest generating plants run on hydroelectric power. Montana exports large amounts of electricity to nearby states.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Montana's regulatory environment that are likely to affect the cost of energy or the cost of using energy. Montana has thus far avoided some of the costly energy policies other states are implementing.

- **Montana does not cap** greenhouse gas emissions.
- **Montana is a member** of the Western Climate Initiative (WCI), a regional agreement among some American governors and Canadian premiers to target greenhouse gas reductions. The central component of this agreement is the eventual enactment of a cap-and-trade scheme to reduce greenhouse gas emissions 15 percent below 2005 levels by 2020.
    - **Montana has a de facto ban** on new coal-fired power plants. House Bill 25, passed in 2007, prohibits regulatory pre-approval of new coal plants that do not sequester 50 percent of carbon dioxide.[253] This is a de facto prohibition on pre-approval of all new coal-fired power plants, because such sequestration technology is not yet commercially available.
- **Montana requires** utilities to sell a certain percent of electricity from renewable sources. The state's renewable portfolio standard requires utilities to provide 15 percent of their retail electricity sales from renewable sources by 2015 and each year thereafter.[254]
- **Montana requires** gasoline to be mixed with renewable fuels. Senate Bill 293, passed in 2005, requires that all non-premium gasoline must contain 10 percent ethanol.[255] Also, Montana requires the Missoula area to use oxygenated gasoline during the winter.[256]

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† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[253] H.B. 25 (Mont. 2007), http://data.opi.mt.gov/bills/2007/billhtml/HB0025.htm.

[254] Lawrence Berkeley National Laboratory, *Renewables Portfolio Standards in the United States*, http://eetd.lbl.gov/ea/ems/reports/lbnl-154e.pdf.

[255] S.B. 293 (Mont. 2005), http://data.opi.state.mt.us/bills/2005/billhtml/SB0293.htm.

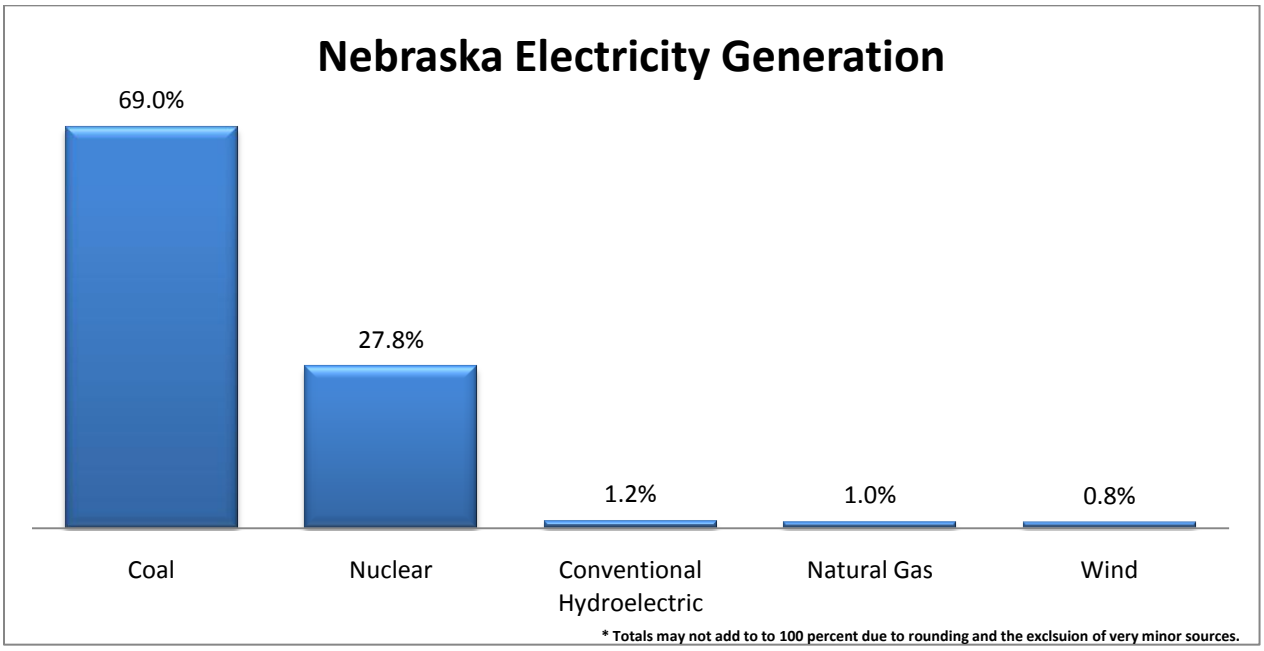
- **Montana does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **Montana requires** new residential and commercial buildings to be certified as energy-efficient. Residential and commercial buildings must comply with the 2003 International Energy Conservation Code (IECC). Commercial building codes must also meet ASHRAE 90.1-2001.[257] The IECC (developed by the International Code Council) and ASHRAE (developed by the American Society of Heating and Refrigeration and Air Conditioning Engineers) are model codes that mandate certain energy efficiency standards. Senate Bill 49, passed in 2009, creates energy efficiency standards for new or renovated state-owned and state-leased buildings. The energy efficiency of these buildings must exceed the 2006 IECC by "20 percent or to the extent that is cost-effective over the life of the building or major renovation."[258]
- **Montana does not impose** state-based appliance efficiency standards.
- **Montana does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[256] Energy Information Administration, *Montana*, Apr. 1, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=MT.
[257] Building Codes Assistance Project, Code Status: Montana, http://bcap-energy.org/node/122.
[258] S.B. 49 (Mont. 2009), http://data.opi.mt.gov/bills/2009/billhtml/SB0049.htm.

Nebraska Energy Facts

Nebraska – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$37,326	22nd highest
Unemployment	4.8%	2nd lowest
Gasoline Price, per gallon	$2.86	15th highest
Electricity Price, per kWh	7.16¢	9th lowest

Nebraska enjoys affordable electricity prices, 28 percent below the national average. Nebraska generates over two-thirds of its electricity from coal, the most inexpensive source of electricity. Nuclear power from 2 plants provides over one-fourth of the state's generation, and hydro, wind, and natural gas supply the remaining 3 percent of electricity production in the state.



Nebraska has small oil reserves, but no other fossil fuel resources. The coal used in Nebraska's electricity generation is almost exclusively delivered from Wyoming. The state also has reported wind power potential, but wind contributes only about one percent to the state's electricity supply. Nebraska is one of the country's top producers of corn-based ethanol, but most of this is consumed in other states because Nebraska allows the use of conventional gasoline and has no state-level mandate for blending ethanol into gasoline.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Nebraska's regulatory environment that are likely to affect the cost of energy or the cost of using energy. Nebraska has thus far avoided many of the costly energy policies other states are implementing.

- **Nebraska does not cap** greenhouse gas emissions.
- **Nebraska is not a member** of a regional agreement to cap greenhouse emissions.
- **Nebraska does not require** utilities to sell a certain percentage of electricity from renewable sources.
- **Nebraska does not require** gasoline to be mixed with renewable fuels.
- **Nebraska does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **Nebraska requires** new residential and commercial buildings to meet energy efficiency standards. Residential and commercial buildings must comply with the 2003 International Energy Conservation Code (IECC). State buildings must comply with the 2003 IECC if constructed after July 1, 2005.[259] The IECC, developed by the International Code Council, is a model code that mandates certain energy efficiency standards.
- **Nebraska does not impose** state-based appliance efficiency standards.
- **Nebraska does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

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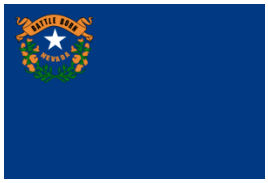
† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

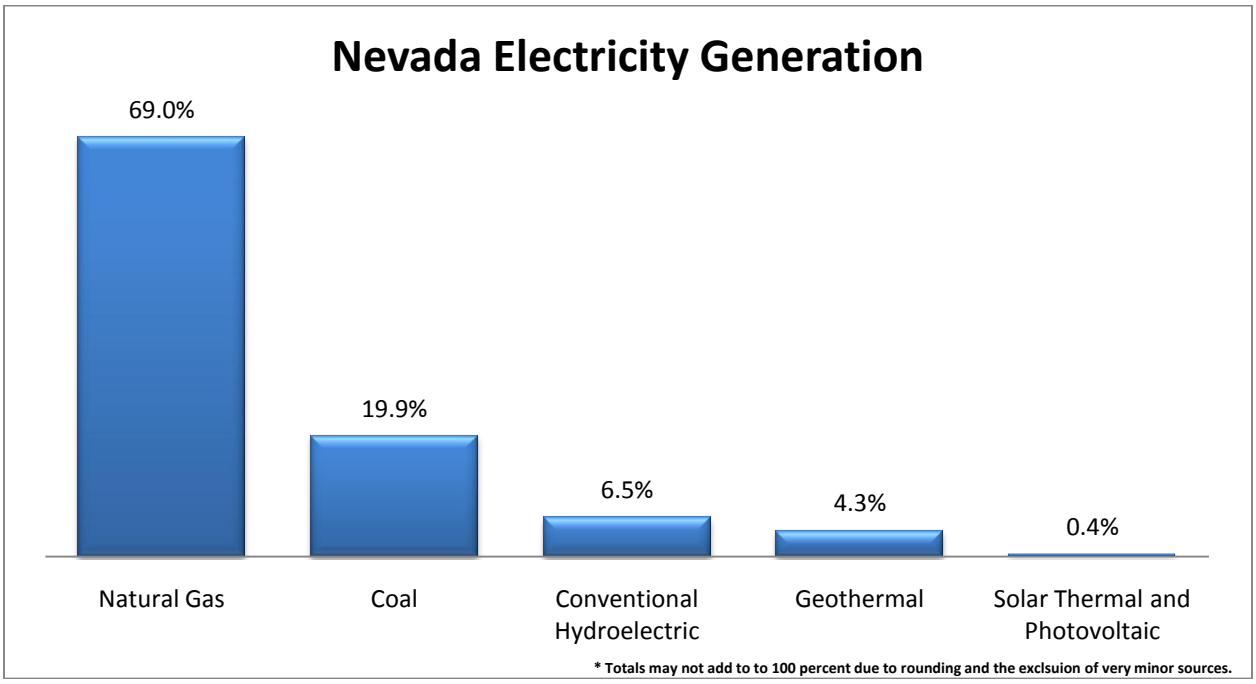
[259] Building Codes Assistance Project, Code Status: Nebraska, http://bcap-energy.org/node/80.



Nevada Energy Facts

Nevada – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$39,687	14th highest
Unemployment	13.2%	2nd highest
Gasoline Price, per gallon	$2.92	9th highest
Electricity Price, per kWh	10.35¢	15th highest

Nevada has moderately expensive energy prices, 5 percent above the national average. More than two-thirds of Nevada's electricity is generated from natural gas, contributing to the state's moderately expensive prices. Coal, an inexpensive energy source, provides about one fifth of Nevada's electricity production and helps to moderate statewide prices. Despite the state's solar power potential, solar contributes negligibly to the state's electricity supply.



Nevada has few fossil fuel resources. The state uses natural gas delivered from Utah and other Rocky Mountain states and coal imported from Arizona and Utah. Nevada is one of the few states that produce electricity from geothermal with its production second to that of California. Hoover Dam on the Colorado River also provides hydroelectric power, as the second largest operating power plant in Nevada. Hydroelectricity and geothermal power together supply over 10 percent of the state's electricity.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Nevada's regulatory environment that are likely to affect increase the cost of energy or the cost of using energy. Nevada has thus far avoided some of the costly energy policies other states are implementing.

Nevada:

- **Nevada does not cap** greenhouse gas emissions.
- **Nevada is an observer** of the Western Climate Initiative (WCI), a regional agreement among some American governors and Canadian premiers to target greenhouse gas reductions. The central component of this agreement is the eventual enactment of a cap-and-trade scheme to reduce greenhouse gas emissions 15 percent below 2005 levels by 2020. As an observer of the WCI, Nevada would not be bound to agreements made by WCI members.
- **Nevada requires** utilities to provide 25 percent of electricity from renewable sources by 2025.[260] In 2005, Assembly Bill 3 amended Nevada's renewable portfolio standard to allow efficiency as a method of compliance.[261] The contribution from energy efficiency measures is capped at one-quarter of the total standard.
- **Nevada does not require** gasoline to be mixed with renewable fuels. However, Nevada requires the Las Vegas metropolitan areas to use a "Clean Burning Gasoline Blend" and both the Las Vegas and Reno metropolitan areas to use oxygenated motor fuels during the winter months.[262]

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† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[260] Lawrence Berkeley National Laboratory, *Renewables Portfolio Standards in the United States*, http://eetd.lbl.gov/ea/ems/reports/lbnl-154e.pdf.

[261] A.B. 3 (Nev. 2005), http://www.leg.state.nv.us/22ndSpecial/bills/AB/AB3_EN.pdf.

[262] Energy Information Administration, *Nevada*, Apr. 8, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=NV.

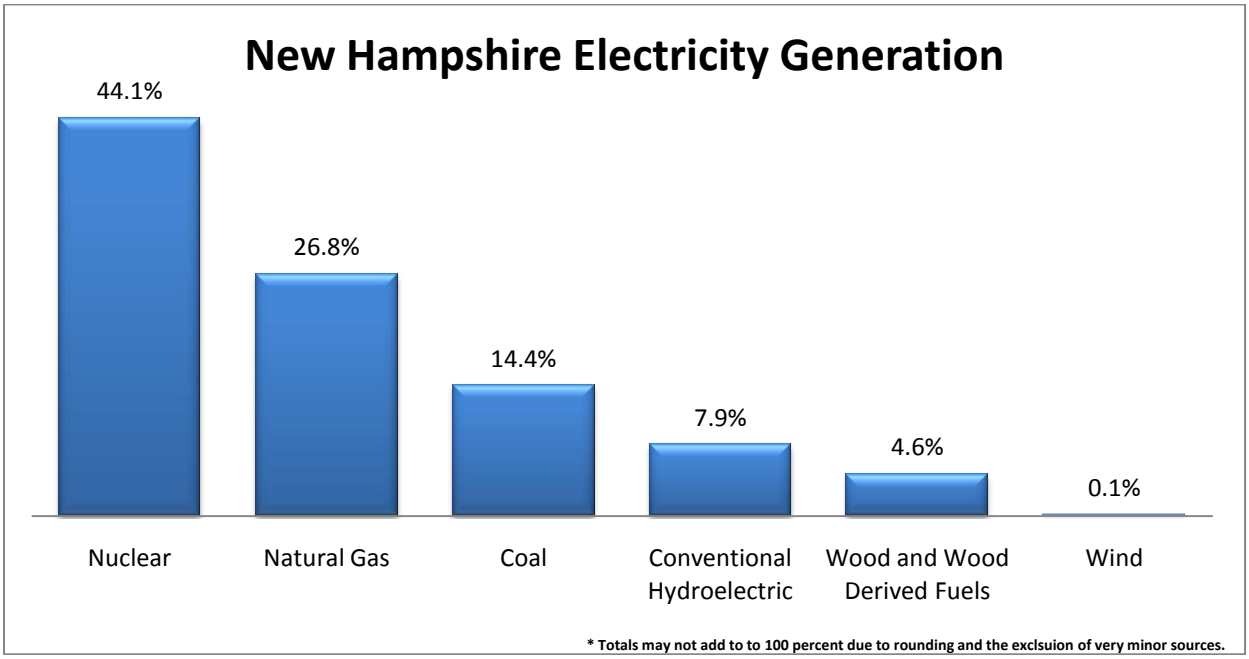
- **Nevada does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **Nevada requires** new residential and commercial buildings to meet energy efficiency standards. Residential and commercial buildings must comply with the 2003 International Energy Conservation Code (IECC) in jurisdictions that have not adopted another standard.[263] The IECC, developed by the International Code Council, is a model code that mandates certain energy efficiency standards. State executive agencies are required to reduce grid-based energy purchases for state-owned buildings by 20 percent by 2015.[264]
- **Nevada does not impose** state-based appliance efficiency standards, but **does impose** efficiency standards for general purpose lights. Assembly Bill 178, enacted in 2007, requires lights to provide 25 lumens per watt of electricity from 2012 to 2015, with a more stringent standard to be developed and implemented by 2016.[265]
- **Nevada does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[263] Building Codes Assistance Project, Code Status: Nevada, http://bcap-energy.org/node/81.
[264] Database of State Incentives for Renewables and Efficiency, Nevada State Energy Reduction Plan, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NV13R&re=0&ee=1.
[265] Database of State Incentives for Renewables and Efficiency, Nevada Luminous Efficacy Standards for General Purpose Lights, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NV14R&re=0&ee=1.

New Hampshire Energy Facts

New Hampshire – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$38,420	18th highest
Unemployment	7.1%	10th lowest
Gasoline Price, per gallon	$2.70	11th lowest
Electricity Price, per kWh	15.2¢	6th highest

Like most of the states in the Northeast, New Hampshire has some of the most expensive electricity prices in the United States. More than 40 percent of the state's electricity is generated from the Seabrook nuclear power plant, the largest single nuclear reactor in New England. Natural gas provides 26 percent of New Hampshire's electricity, with coal meeting almost 15 percent of demand.



New Hampshire has no fossil fuel resources, so its natural gas is delivered through pipelines from Maine and Canada and its coal is imported from other states. The Connecticut and Merrimack River basins offer hydroelectric resources, which generate almost 8 percent of the state's electricity.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about the regulatory environment of New Hampshire that are likely to affect the cost of energy or the cost of using energy.

- **New Hampshire does not cap** greenhouse gas emissions. However, as a member of the Regional Greenhouse Gas Initiative, it has imposed a cap on greenhouse gas emissions from power plants.
- **New Hampshire is a member** of the Regional Greenhouse Gas Initiative (RGGI), a regional agreement among ten Northeast states to limit greenhouse gas emissions. This agreement requires states to cap carbon dioxide emissions from the electrical generation sector and to reduce those emissions by 10 percent by 2018 through a cap-and-trade scheme.
    - The Clean Power Act, passed in May 2002, requires the state's three fossil fuel power plants to reduce greenhouse gas emissions to 3 percent less than 1999 levels, but it allows the use of credits from plants outside New Hampshire to fulfill this requirement.[266]
- **New Hampshire requires** utilities to sell a certain percentage of electricity from renewable sources. The state's renewable portfolio standard requires utilities to provide 23.8 percent of retail electricity sold from renewable sources by 2025.[267]
- **New Hampshire does not require** gasoline to be mixed with renewable fuels. However, New Hampshire has agreed to cooperate with other northeastern states to develop a

† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[266] New Hampshire Department of Environmental Services, Overview of HB 284, The New Hampshire Clean Power Act, http://des.nh.gov/organization/divisions/air/tsb/tps/aetp/clean_power_act.htm.

[267] Lawrence Berkeley National Laboratory, *Renewables Portfolio Standards in the United States*, http://eetd.lbl.gov/ea/ems/reports/lbnl-154e.pdf.

regional low-carbon fuel standard. Also, New Hampshire requires reformulated motor gasoline blended with ethanol to be used in the southeastern part of the state.[268]

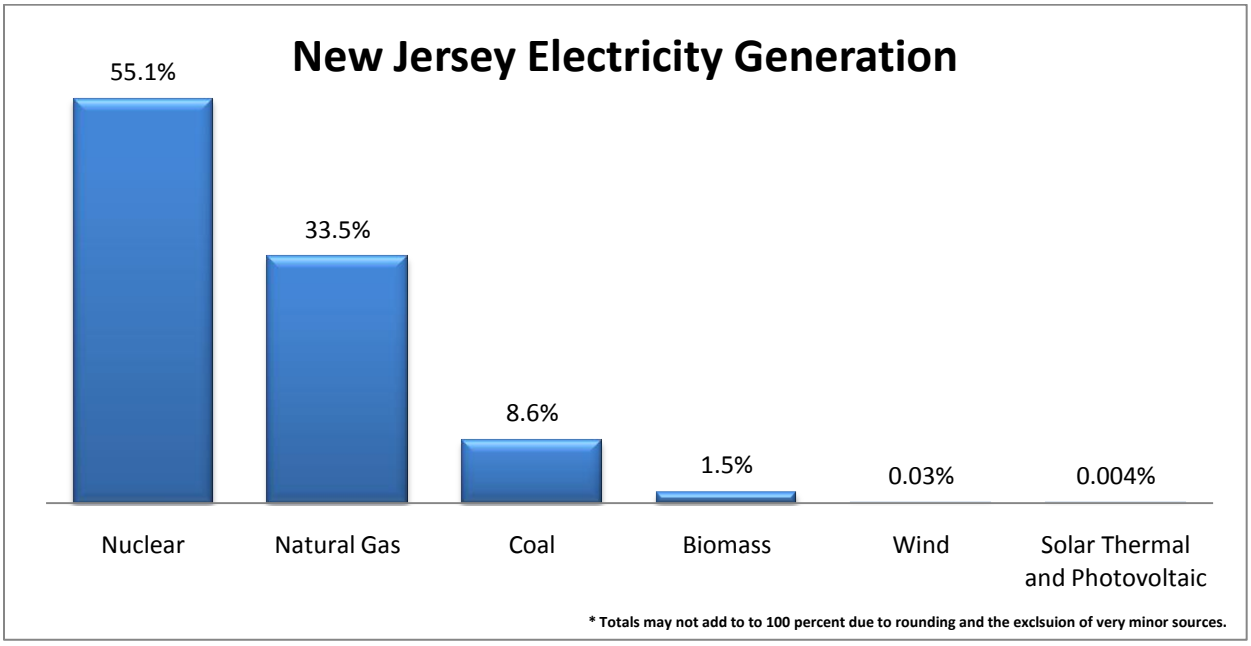
- **New Hampshire does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **New Hampshire requires** new residential and commercial buildings to meet energy efficiency standards. Residential and commercial buildings must meet the New Hampshire Energy Code, which is based on the 2006 International Energy Conservation Code (IECC).[269] The IECC, developed by the International Code Council, is a model code that mandates certain energy efficiency standards. In 2005, Governor John Lynch issued Executive Order 2005-4, committing New Hampshire to improve energy efficiency in state-occupied buildings by 10 percent.[270] The executive order also requires new construction and renovation designs to exceed the state energy code by at least 20 percent.
- **New Hampshire does not impose** state-based appliance efficiency standards. However, state agencies and departments are required to purchase Energy Star equipment.[271]
- **New Hampshire does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[268] Energy Information Administration, *New Hampshire*, Apr. 8, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=NH.
[269] Building Codes Assistance Project, Code Status: New Hampshire, http://bcap-energy.org/node/83.
[270] N.H. Exec. Order 2005-4 (July 14, 2005), http://www.governor.nh.gov/orders/documents/Executive_order_2005-4.pdf.
[271] Database of State Incentives for Renewables and Efficiency, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NH06R&re=0&ee=1.

New Jersey Energy Facts

New Jersey – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$44,957	5th highest
Unemployment	9.8%	16th highest
Gasoline Price, per gallon	$2.63	2nd lowest
Electricity Price, per kWh	14.8¢	7th highest

Like other states in the Northeast, New Jersey has some of the most expensive electricity prices in the United States. The state typically receives more than half of its electricity from nuclear power, while natural gas meets almost a third of the state's demand. Though the state reportedly has significant wind energy potential, wind makes a negligible contribution to New Jersey's electricity supply.



New Jersey has three nuclear power plants. One of those, the Oyster Creek Nuclear Generating Station, first came online in 1969 and is the oldest operating nuclear power plant in the United States. New Jersey has no fossil fuel reserves, so its natural gas arrives through pipelines from Pennsylvania, while coal is shipped to the state from West Virginia, Pennsylvania, and Virginia.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about New Jersey's regulatory environment that are likely to affect the cost of energy or the cost of using energy. New Jersey has enacted several policies that increase the cost of energy. Electricity prices in New Jersey are among the highest in the country, owing in part to some of its regulations.

New Jersey

- **New Jersey caps** greenhouse gas emissions. The Global Warming Response Act, passed in 2007, instituted mandatory caps on greenhouse gas emissions.[272] The law limits emissions to 1990 levels by 2020 and 80 percent less than 2006 levels by 2050. It also requires the creation of a monitoring and reporting system for electric and gas utilities' emissions. As member of the Regional Greenhouse Gas Initiative, New Jersey has also imposed a cap on greenhouse gas emissions from power plants.
- **New Jersey is a member** of the Regional Greenhouse Gas Initiative (RGGI), a regional agreement among ten Northeast states to limit greenhouse gas emissions. This agreement requires states to cap carbon dioxide emissions from the electrical generation sector and to reduce those emissions by 10 percent by 2018 through a cap-and-trade scheme.
- **New Jersey requires** utilities to sell a certain percentage of electricity from renewable sources. The state's renewable portfolio standard requires utilities to provide 22.5 percent of electricity sales from renewables by 2021. In addition, the standard also contains a separate solar specific provision which requires the procurement of at least 2,518 gigawatt-hours (GWh) from in-state solar electric generators during energy year

† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[272] Global Warming Response Act, A.B. 3301 (N.J. 2007), http://www.njleg.state.nj.us/2006/Bills/A3500/3301_R2.HTM.

2021 (June 2020 to May 2021), and 5,316 GWh during energy year 2026 and each year thereafter.[273]

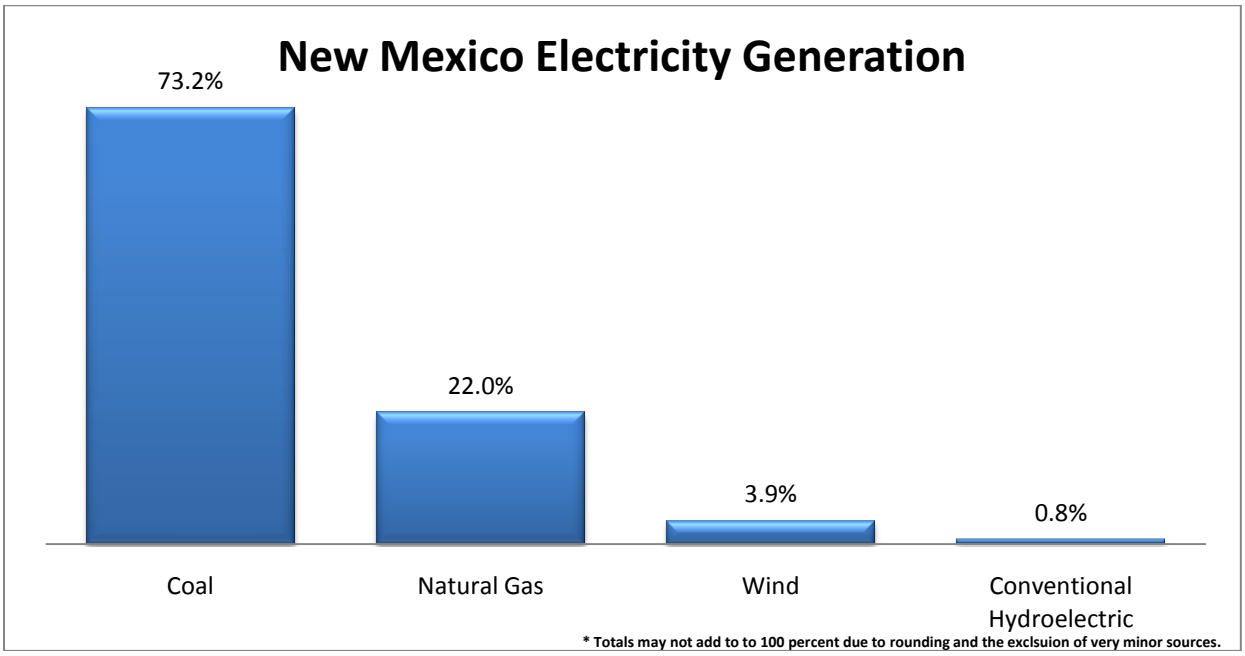
- **New Jersey requires** the use of reformulated motor gasoline blended with ethanol.[274]
- **New Jersey imposes** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions. Senate Bill 2351, passed in 2004, adopted California's vehicle emission standards.[275]
- **New Jersey requires** new residential and commercial buildings to meet energy efficiency standards. Residential buildings must meet the 2006 International Energy Conservation Code (IECC) (with state amendments) while commercial buildings must meet ASHRAE 90.1-2004.[276] The IECC (developed by the International Code Council) and ASHRAE 90.1 (developed by the American Society of Heating and Refrigeration and Air Conditioning Engineers) are model codes that mandate certain energy efficiency standards. Senate Bill 2146, enacted in 2008, requires that new buildings larger than 15,000 square feet and built solely for state use must meet the silver LEED standard or an equivalent standard.[277] The silver LEED standard is one level of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system. In 2002, Governor James McGreevey issued Executive Order 24, requiring all new state school designs to use LEED guidelines, though new schools do not have to gain LEED certification.[278]
- **New Jersey imposes** state-based appliance efficiency standards, but the state's standards were preempted by federal regulation.[279] State agencies are required to purchase Energy Star products, when available.[280]
- **New Jersey does not allow** electric utilities to "decouple" revenue from the sale of electricity, but **does allow** natural gas utilities to decouple. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[273] Lawrence Berkeley National Laboratory, *Renewables Portfolio Standards in the United States*, http://eetd.lbl.gov/ea/ems/reports/lbnl-154e.pdf.
[274] Energy Information Administration, *New Jersey*, Apr. 8, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=NJ.
[275] Public Law 3 (N.J. 2004), Chapter 266, http://www.njleg.state.nj.us/2002/Bills/PL03/266_.PDF.
[276] Database of State Incentives for Renewables and Efficiency, New Jersey Building Energy Code, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NJ13R&re=0&ee=1.
[277][277]S.B. 2146 (N.J. 2006), http://www.njleg.state.nj.us/2006/Bills/S2500/2146_I1.HTM.
[278] N.J. Exec. Order 24 (July 29, 2002), http://www.state.nj.us/infobank/circular/eom24.htm.
[279] New Jersey Administrative Code, 14:8-5.1 et seq. (2008), http://www.dsireusa.org/documents/Incentives/NJ12Rb.htm.
[280] Database of State Incentives for Renewables and Efficiency, New Jersey High Performance Building Standards in New State Construction, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NJ16R&re=0&ee=1.

New Mexico Energy Facts

New Mexico – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$30,935	11th lowest
Unemployment	8.7%	22nd lowest
Gasoline Price, per gallon	$2.77	25th lowest
Electricity Price, per kWh	8.2¢	20th lowest

New Mexico has below average electricity prices. Coal produces more than 70 percent of New Mexico's electricity, and natural gas provides over 20 percent.



New Mexico's natural gas production is almost 10 percent of the United States' total. The San Juan Basin, located on the New Mexico-Colorado border, is the nation's largest field of proven natural gas reserves. New Mexico is a leading coalbed methane producer, along with Colorado and Wyoming, supplying about one-third of the state's natural gas production. The state also supplies about 3 percent of the United States' oil production. Most of New Mexico's coal deposits are in the San Juan Basin, which supply the state with its coal needs. About 40 percent of the state's coal production is shipped to Arizona. New Mexico reportedly has substantial renewable energy potential through wind and solar power and has geothermal potential. Wind provides about 4 percent of the state's electricity, but solar and geothermal make negligible contributions to the state's electricity supply.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about New Mexico's regulatory environment that are likely to affect the cost of energy or the cost of using energy.

- **New Mexico does not cap** greenhouse gas emissions. However, the Environment Department requires power generators, cement plants, and refineries to report greenhouse gas emissions to the state.[281]
- **New Mexico is a member** of the Western Climate Initiative (WCI), a regional agreement among some American governors and Canadian premiers to target greenhouse gas reduction. The central component of this agreement is the eventual enactment of a cap-and-trade scheme to reduce greenhouse gas emissions to 15 percent below 2005 levels by 2020.
- **New Mexico requires** utilities to sell a certain percentage of electricity from renewable sources. The state's renewable portfolio standard requires investor-owned utilities to provide 20 percent of total retail electricity sales from renewables by 2020 and cooperatives to provide 10 percent of total retail sales from renewables by 2020.[282]
- **New Mexico requires** diesel to be mixed with renewable fuels. Senate Bill 489, passed in 2007, mandates that all diesel contain 5 percent biodiesel by 2012.[283] Also, during the winter New Mexico requires the use of oxygenated motor gasoline in the Albuquerque metropolitan area.[284]

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† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[281] New Mexico Environment Department, Air Quality Bureau, Greenhouse Gases Reporting, http://www.nmenv.state.nm.us/aqb/ghg/ghgrr_index.html.

[282] Lawrence Berkeley National Laboratory, *Renewables Portfolio Standards in the United States*, http://eetd.lbl.gov/ea/ems/reports/lbnl-154e.pdf.

[283] S.B. 489 (N.M. 2007), http://www.nmlegis.gov/Sessions/07%20Regular/final/SB0489.pdf.

[284] Energy Information Administration, *New Mexico*, Apr. 8, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=NM.

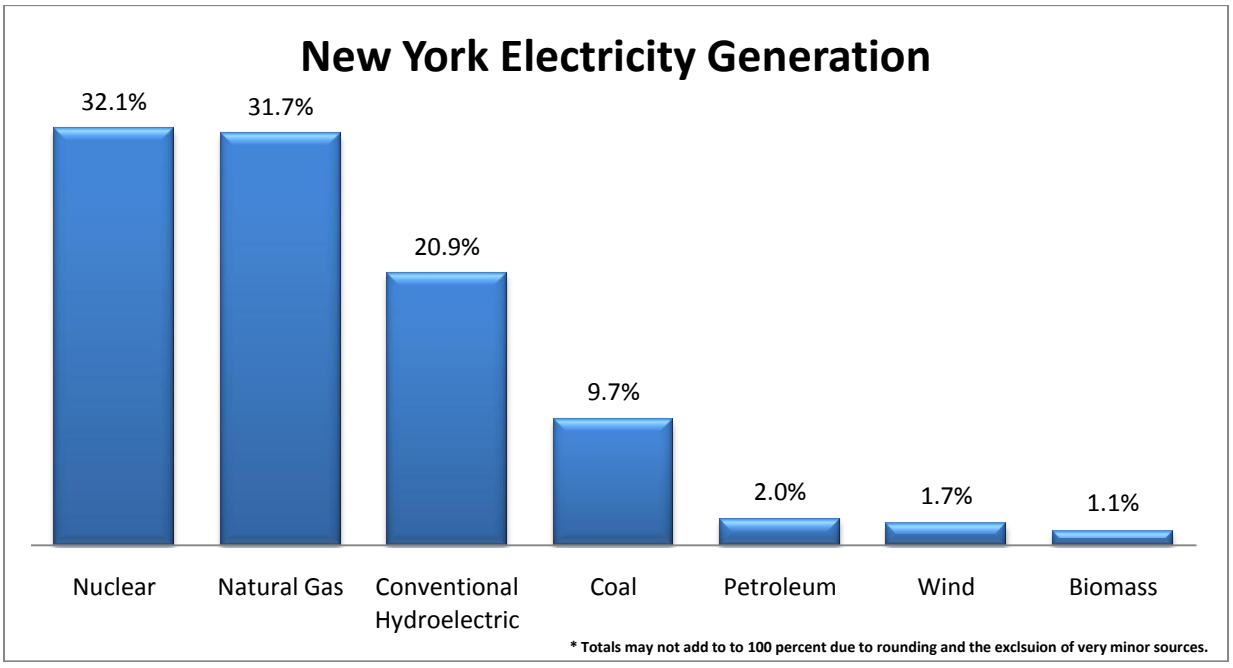
- **New Mexico imposes** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles. Governor Bill Richardson issued Executive Order 2006-069 in 2006, which established goals and timetables to reduce greenhouse gas emissions, including plans to adopt California's vehicle emissions standards.[285] The Environmental Improvement Board implements the standards.[286]
- **New Mexico requires** new residential and commercial buildings to meet energy efficiency standards. Residential buildings must meet the 2006 International Energy Conservation Code (IECC), while commercial buildings must meet ASHRAE 90.1-2004.[287] The IECC (developed by the International Code Council) and ASHRAE 90.1 (developed by the American Society of Heating and Refrigeration and Air Conditioning Engineers) are model codes that mandate certain energy efficiency standards. In 2006, Governor Bill Richardson issued Executive Order 2006-001, requiring all executive state agencies to meet the U.S. Green Buildings Council's Leadership in Energy and Environmental Design (LEED) standards.[288] All new public buildings larger than 15,000 square feet or using more than 50 kilowatts of electricity at peak demand must meet the silver LEED standard.
- **New Mexico does not impose** state-based appliance efficiency standards.
- **New Mexico does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[285] N.M. Exec. Order 2006-69 (Dec. 28, 2006), http://www.governor.state.nm.us/press/2006/dec/122806_01.pdf.
[286] N.M. STAT. Title 20, Ch. 2, Part 88 (2009), http://www.nmcpr.state.nm.us/nmac/parts/title20/20.002.0088.htm.
[287] Database of State Incentives for Renewables and Efficiency, New Mexico Building Energy Code, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NM10R&re=0&ee=1.
[288] N.M. Exec. Order 2006-001 (Jan. 16, 2006), http://www.governor.state.nm.us/orders/2006/EO_2006_001.pdf.

New York Energy Facts

New York – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$49,499	3rd highest
Unemployment	8.8%	24th lowest
Gasoline Price, per gallon	$2.94	7th highest
Electricity Price, per kWh	15.66¢	3rd highest

New York has some of the highest energy prices in the country. Its electricity prices are 58 percent higher than the national average. New York gets about two-thirds of its electricity from nuclear power and natural gas, and New York has imposed a number of regulations that increase the cost of energy and the products that use energy. Nuclear power provides over 30 percent of the state's electricity from four nuclear plants, and natural gas generation contributes about the same amount. Coal produces about 10 percent of the state's electricity, and hydroelectric power plants on the Niagara and Hudson Rivers typically provide about 20 percent of the electricity production.



New York generates more electricity from hydroelectricity than any other state east of the Rocky Mountains. When the 2,353-megawatt Robert Moses Niagara power plant near Niagara Falls was completed in 1961, it was the largest hydroelectric power plant in the western

world.[289] Non-hydroelectric renewables contribute about 3 percent of the state's generation, with production from wind, wood, municipal solid waste and landfill gas.

New York has minor reserves of oil and natural gas found in the western part of the state. Most of its natural gas is delivered by pipeline from the Gulf Coast and Canada.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about New York's regulatory environment that are likely to affect the cost of energy or the cost of using energy. New York's has imposed a number of costly regulations.

- **New York does not cap** greenhouse gas emissions, but the 2002 State Energy Plan included non-binding goals cut greenhouse gas emissions to 5 percent below 1990 levels by 2010 and 10 percent below 1990 levels by 2020.[290] Also, as a member of the Regional Greenhouse Gas Initiative, New York has imposed a cap on greenhouse gas emissions from power plants.
- **New York is a member** of the Regional Greenhouse Gas Initiative (RGGI), a regional agreement among ten Northeast states to limit greenhouse gas emissions. This agreement requires states to cap carbon dioxide emissions from the electrical generation sector and to reduce those emissions by 10 percent by 2018 through a cap-and-trade scheme.
- **New York requires** utilities to generate from renewable sources a certain percentage of the electricity they sell. Updated January 2010, the state's renewable portfolio standard requires utilities to provide 30 percent of electricity from renewables by 2015. Of this 30

[289] New York Power Authority, *Niagara Power Project*, http://www.nypa.gov/facilities/niagara.htm.

† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[290] New York State Energy Plan, Section 1.3: Energy Policy Objectives and Recommendations, http://www.nyserda.org/sep/sepsection1-3.pdf.

percent, approximately 19.3 percent of the target will be derived from existing (2004) renewable energy facilities and one percent (1 percent) of the target is expected to be met through voluntary green power sales.[291]

- **New York does not require** gasoline to be mixed with renewable fuels. However, New York requires that motorists in the New York metropolitan area use reformulated gasoline blended with ethanol.[292]
- **New York imposes** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles. The New York State Environmental Board adopted California's vehicle emissions standards in 2005.[293]
- **New York requires** new residential and commercial buildings to meet energy efficiency standards. Residential and commercial buildings must meet the New York Energy Conservation Construction Code, which is based on the 2004 International Energy Conservation Code (IECC) and ASHRAE 90.1-2004. The IECC (developed by the International Code Council) and ASHRAE 90.1 (developed by the American Society of Heating and Refrigeration and Air Conditioning Engineers) are model codes that mandate certain energy efficiency standards. In 2001, Governor George Pataki issued Executive Order 111, requiring executive state agencies to reduce energy consumption 35 percent from 1990 levels by 2010 in buildings they own, lease, or operate.[294] State agencies must also purchase Energy Star products when acquiring or replacing energy-using equipment. Governor Pataki also committed the state to buy 20 percent of its electricity from renewable sources by 2010. Executive Order 111 also requires new state construction and substantial renovation to meet the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) standards to the extent possible. New state buildings must also exceed the state energy code by at least 20 percent, while substantial renovations should exceed the code by at least 10 percent. Assembly Bill 7246, enacted in 2009, directs the state Office of General Services to develop requirements for all state entities to meet LEED or equivalent standards.[295]
- **New York imposes** state-based appliances energy efficiency standards. These standards currently affect consumer audio and video products and digital television adapters. However, the Secretary of State can, in consultation with New York State Energy Research and Development Authority, add any additional commercially available products that are not covered under existing federal standards.[296]

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[291] Lawrence Berkeley National Laboratory, *Renewables Portfolio Standards in the United States*, http://eetd.lbl.gov/ea/ems/reports/lbnl-154e.pdf.

[292] Energy Information Administration, *New York*, Apr. 8, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=NY.

[293] New York Department of Environmental Conservation, Regulations, Ch. III, Subpart 218-8: Greenhouse Gas Exhaust Emission Standards, http://www.dec.ny.gov/regs/4243.html.

[294] N.Y. Exec. Order No. 111 (June 10, 2001), http://www.nyserda.org/programs/pdfs/exorder111.pdf.

[295] A.B. 7246-B (2009), http://assembly.state.ny.us/leg/?bn=A07246&sh=t.

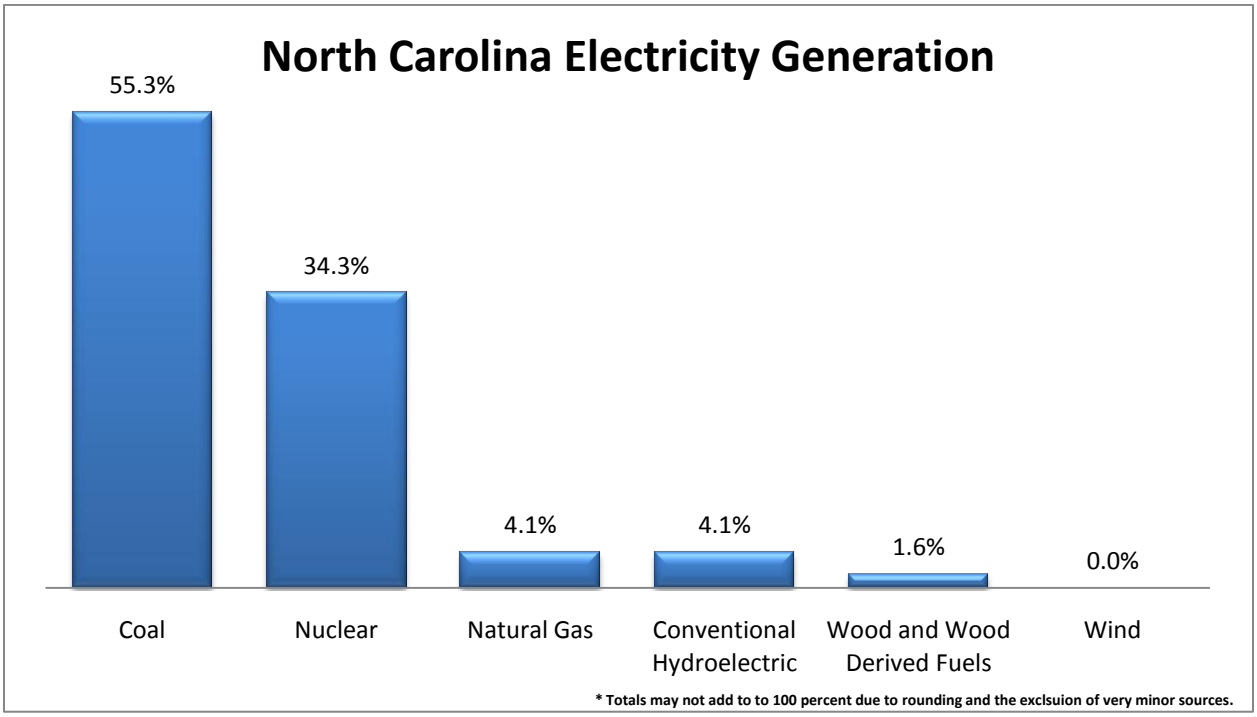
[296] Database of State Incentives for Renewables and Efficiency, New York Appliance and Equipment Energy Efficiency Standards, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NY09R&re=1&ee=1.

- **New York allows** electric and natural gas utilities to “decouple” revenue from the sale of electricity and natural gas, respectively. By allowing utilities to decouple, New York allows utilities to increase their revenue by selling less electricity and natural gas.

North Carolina Energy Facts

North Carolina – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$35,719	25th highest
Unemployment	11.2%	9th highest
Gasoline Price, per gallon	$2.76	24th lowest
Electricity Price, per kWh	8.43¢	23rd lowest

North Carolina has below average electricity prices, 15 percent below the national average. More than 55 percent of North Carolina's electricity is generated from coal, which is primarily shipped to the state from West Virginia and Kentucky. Nuclear power from three nuclear plants provides over 34 percent of North Carolina's electricity generation, and most of the rest of North Carolina's electricity is generated from natural gas that is shipped into the state from the Gulf Coast and hydroelectric from several of the state's rivers.



Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide

output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about North Carolina's regulatory environment that are likely to affect the cost of energy or the cost of using energy. North Carolina has thus far avoided many of the costly energy policies other states are implementing.

North Carolina:

- **North Carolina does not cap** greenhouse gas emissions.
- **North Carolina is not a member** of a regional agreement to cap greenhouse gas emissions.
- **North Carolina requires** utilities to generate from renewable sources a certain percent of the electricity they sell. The state's renewable portfolio standard requires investor-owned utilities to generate 12.5 of 2020 retail electricity sales from renewables by 2021, while municipal utilities and cooperatives must meet a target of 10 percent of renewable by 2018. Up to 25 percent of the requirement may be met through energy efficiency technologies, including combined heat and power systems powered by non-renewable fuels. After 2021, up to 40 percent of the standard may be met through energy efficiency. The overall target for renewable energy includes technology-specific targets of 0.2 percent solar by 2018, 0.2 percent energy recovery from swine waste by 2018, and 900,000 megawatt-hours of electricity derived from poultry waste by 2014.[297]
- **North Carolina does not require** gasoline to be mixed with renewable fuels.
- **North Carolina does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **North Carolina requires** new residential and commercial buildings to meet energy efficiency standards. Residential and commercial buildings must meet the 2009 North Carolina Energy Conservation Code, which is based on the 2006 International Energy Conservation Code (IECC) and ASHRAE 90.1-2004.[298] The IECC (developed by the International Code Council) and ASHRAE 90.1 (developed by the American Society of Heating and Refrigeration and Air Conditioning Engineers) are model codes that

† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[297] Lawrence Berkeley National Laboratory, *Renewables Portfolio Standards in the United States*, http://eetd.lbl.gov/ea/ems/reports/lbnl-154e.pdf.

[298] Building Codes Assistance Project, Code Status: North Carolina, http://bcap-energy.org/node/82.

mandate certain energy efficiency standards. State buildings must meet a variety of standards intended to decrease energy and water use.[299]

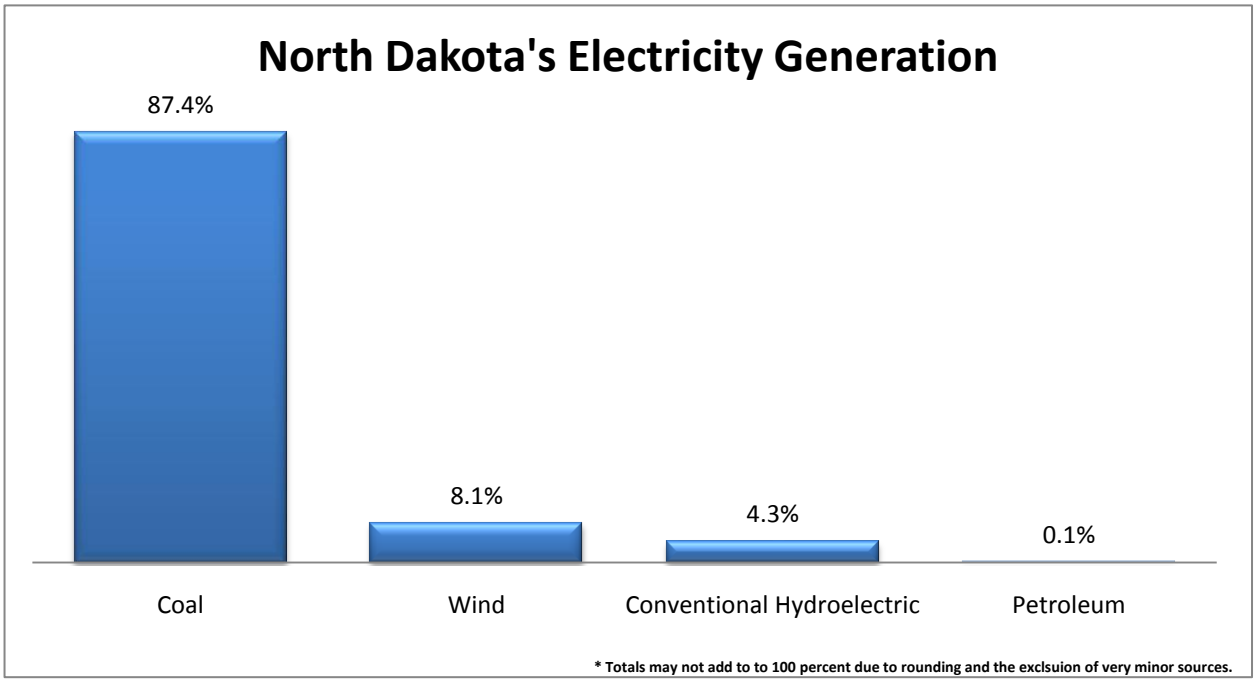
- **North Carolina does not impose** state-based appliance efficiency standards. However, new office equipment and appliances purchased by state agencies must be Energy Star certified.[300]
- **North Carolina does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[299] Database of State Incentives for Renewables and Efficiency, North Carolina, Conservation of Energy and Water Use in State Buildings, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NC10R&re=1&ee=1.
[300] North Carolina General Statutes § 143-64.10 et seq., http://www.ncga.state.nc.us/EnactedLegislation/Statutes/HTML/ByArticle/Chapter_143/Article_3B.html.

North Dakota Energy Facts

North Dakota – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$37,832	20th highest
Unemployment	4.1%	1st lowest
Gasoline Price, per gallon	$2.90	11th highest
Electricity Price, per kWh	6.81¢	7th lowest

North Dakota has some of the most affordable electricity prices in the country, in large part because almost 90 percent of its electricity is generated from coal-fired power plants. North Dakota has the best wind potential in the United States and generates 8 percent of its electricity from that renewable resource. Hydroelectric dams provide 4 percent of the state's electricity.



North Dakota has substantial coal, oil, and natural gas reserves. The state produces coal from large surface mines in the central part of the state, 2 percent of the nation's oil production, and about 1 percent of domestic natural gas production. North Dakota is one of a few states that produce synthetic natural gas, with the largest source of synthetic gas in the country, the Great Plains Synfuels Plant in Beulah.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about North Dakota's regulatory environment that are likely to affect the cost of energy or the cost of using energy. North Dakota has thus far avoided many of the costly energy policies other states are implementing.

North Dakota:

- **North Dakota does not cap** greenhouse gas emissions.
- **North Dakota is not a member** of a regional agreement to cap greenhouse gas emissions.
- **North Dakota does not require** utilities to generate from renewable sources a certain percentage of the electricity that they sell. The state, however, has a non-binding renewable portfolio goal to generate 10 percent of the electricity sold in the state from renewable energy and recycled energy by 2015.[301]
- **North Dakota does not require** gasoline to be mixed with renewable fuels.
- **North Dakota does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **North Dakota does not require** new residential and commercial buildings to meet energy efficiency standards.
- **North Dakota does not impose** state-base appliance efficiency standards.
- **North Dakota does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

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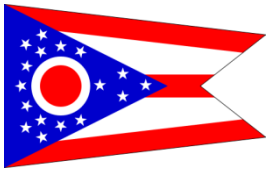
† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

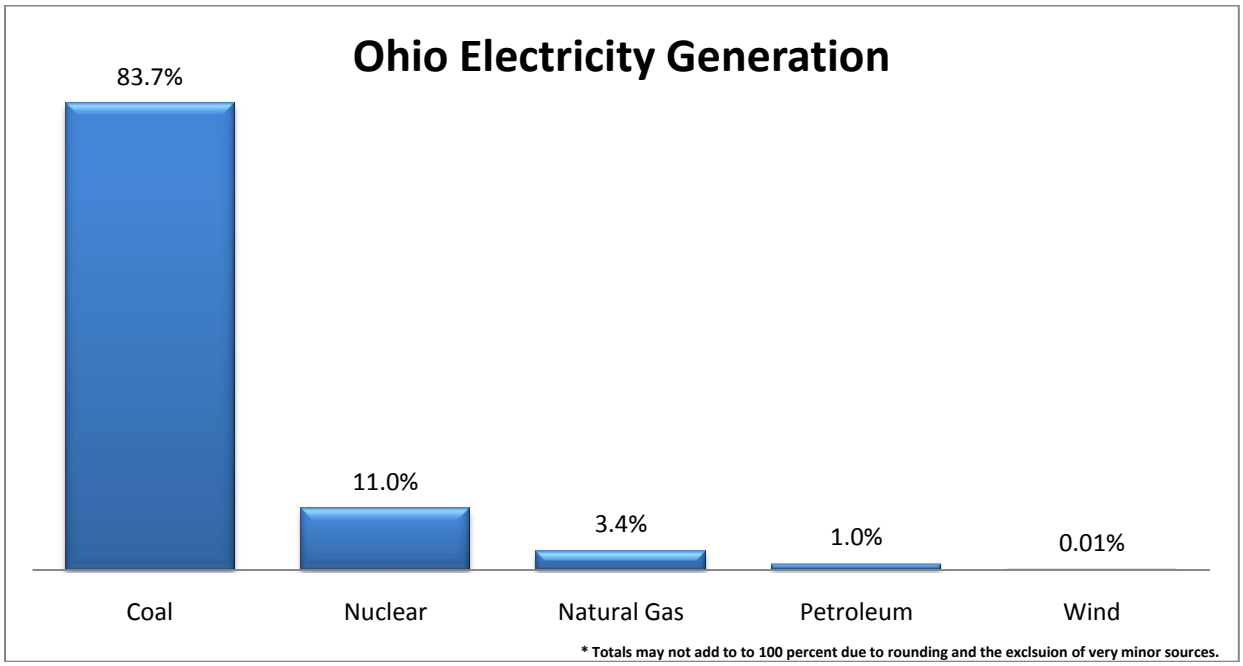
[301] Lawrence Berkeley National Laboratory, *Renewables Portfolio Standards in the United States*, http://eetd.lbl.gov/ea/ems/reports/lbnl-154e.pdf.



Ohio Energy Facts

Ohio – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$33,568	19th lowest
Unemployment	10.9%	11th highest
Gasoline Price, per gallon	$2.68	6th lowest
Electricity Price, per kWh	8.97¢	22nd highest

Ohio has below average electricity prices. Over 80 percent of Ohio's electricity comes from coal. Most of the state's non-coal electricity is generated from the state's two nuclear power plants. Natural gas and petroleum make minimal contributions to Ohio's electricity supply, as do hydro and biomass.



Although Ohio has some coal reserves in the Appalachian Basin, which crosses the eastern part of the state, these typically provide only a third of the coal used for Ohio's electricity generation. The rest of the state's coal is imported from West Virginia, Wyoming, Kentucky, and Pennsylvania. Ohio is the fourth-largest consumer of coal in the country.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Ohio's regulatory environment that are likely to affect the cost of energy or the cost of using energy. Ohio has thus far avoided many of the costly energy policies other states are implementing.

- **Ohio does not cap** greenhouse gas emissions.
- **Ohio is an observer** of the Midwestern Regional Greenhouse Gas Reduction Accord, a regional agreement among six American governors and one Canadian premier to target greenhouse gas reductions. The central component of this agreement is the eventual enactment of a cap-and-trade scheme, perhaps supported by low-carbon fuel standards and other supplemental policies. As an observer of the Accord, Ohio would not be bound to agreements made by Accord members.
- **Ohio requires** utilities to sell a certain percentage of electricity from renewable sources. The state's renewable portfolio standard requires utilities to provide 25 percent of their retail electricity supply from alternate energy sources by 2025. Alternative energy resources include all renewable and advanced energy resources. Technology specifications include a minimum of 12.5 percent renewables by 2024, and 0.5 percent solar by 2024.[302]
- **Ohio does not require** gasoline to be mixed with renewable fuels. However, the state requires the use of reformulated gasoline in the Cincinnati metropolitan area.[303]
- **Ohio does not impose** automobile fuel economy standards similar to California's, which include California's attempts to regulate greenhouse gas emissions from new vehicles.

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† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[302] Lawrence Berkeley National Laboratory, *Renewables Portfolio Standards in the United States*, http://eetd.lbl.gov/ea/ems/reports/lbnl-154e.pdf.

[303] Energy Information Administration, *Ohio*, Apr. 8, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=OH.

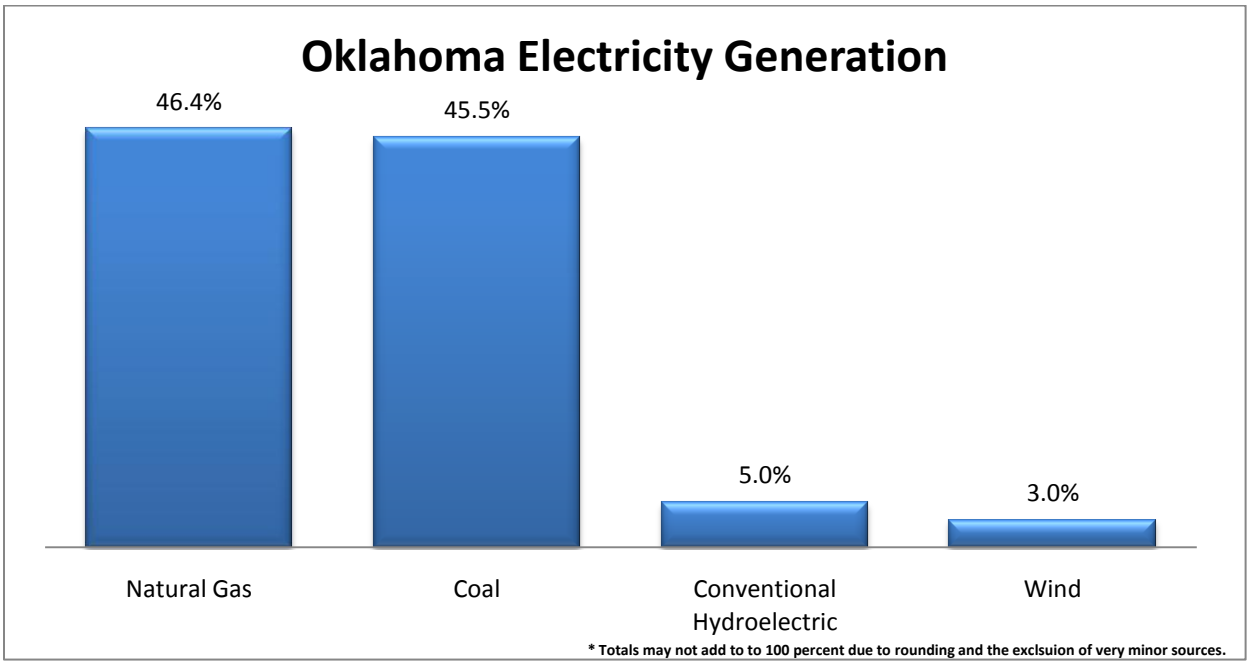
- **Ohio requires** new residential and commercial buildings to meet energy efficiency standards. Residential buildings must meet the 2006 International Energy Conservation Code (IECC) or either of two state-based codes.[304] Commercial buildings must meet the 2006 IECC and ASHRAE 90.1-2004.[305] The IECC (developed by the International Code Council) and ASHRAE 90.1 (developed by the American Society of Heating and Refrigeration and Air Conditioning Engineers) are model codes that mandate certain energy efficiency standards. The Ohio School Facilities Commission approved a resolution in 2007 that requires all new schools to meet the silver LEED for Schools standard.[306] The silver LEED standard is one level of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system. Senate Bill 221, enacted in 2008, also requires the adoption of requirements for new schools to accommodate the eventual installation of roof-top, solar photovoltaic equipment. House Bill 251, enacted in 2007, requires institutions of higher education to impose minimum efficiency standards for new buildings and leased buildings larger than 20,000 square feet.[307]
    - The Ohio School Facilities Commission requires all new school construction, which is not yet in the design state, to meet the LEED silver standard, with the non-binding goal of meeting the LEED gold standard. (LEED silver and gold are certifications from U.S. Green building Council's Leadership in Energy and Environmental Design (LEED) Green Building rating system).[308]
- **Ohio does not impose** state-based appliance efficiency standards.
- **Ohio does not allow** electric utilities to "decouple" revenues from the sale of electricity, but **does allow** natural gas utilities to decouple. Some states decouple revenue from actual sales of electricity or natural gas, allowing utilities to increase their revenue by selling less electricity and natural gas.

[304] Building Codes Assistance Project, Code Status: Ohio, http://bcap-energy.org/node/88.
[305] *Id.*
[306] Ohio School Facilities Commission, Green Schools, http://www.osfc.state.oh.us/Library/GreenSchools/tabid/137/Default.aspx.
[307] H.B. 251 (Ohio 2007), http://www.legislature.state.oh.us/bills.cfm?ID=126_HB_251.
[308] Ohio School Facilities Commission, Green Schools, http://www.osfc.state.oh.us/Library/GreenSchools/tabid/137/Default.aspx.

Oklahoma Energy Facts

Oklahoma – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$29,359	6th lowest
Unemployment	6.7%	6th lowest
Gasoline Price, per gallon	$2.68	8th lowest
Electricity Price, per kWh	7.08¢	8th lowest

Oklahoma enjoys affordable energy prices, in part because it has significant fossil fuel resources. Oklahoma produces most of its electricity from coal and natural gas, in nearly equal amounts. The rest of its electricity comes from renewables, primarily hydroelectricity and wind, which together make up 8 percent of its generation.



Although Oklahoma has small coal reserves, it imports most of its coal from Wyoming. Oklahoma is home to large oil and natural gas reserves. Oklahoma produces more than three percent of the nation's oil and ten percent of the domestic natural gas supply. Oklahoma's proven reserves of natural gas have been increasing in recent years, as technology has improved and more discoveries have been made. It has large reserves of coalbed methane, an unconventional form of natural gas.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Oklahoma's regulatory environment that are likely to affect the cost of energy or the cost of using energy. Oklahoma has thus far avoided many of the costly energy policies other states are implementing.

Oklahoma:

- **Oklahoma does not cap** greenhouse gas emissions.
- **Oklahoma is not a member** of a regional agreement to cap greenhouse gas emissions.
- **Oklahoma does not require** utilities to generate from renewable sources a certain percentage of the electricity that they sell.
- **Oklahoma does not require** gasoline to be mixed with renewable fuels.
- **Oklahoma does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **Oklahoma requires** new residential and commercial buildings to meet energy efficiency standards. Residential and commercial buildings must meet the 2003 International Energy Conservation Code, if located in local jurisdictions that do not have their own energy efficiency codes.[309] State-owned and leased facilities must also meet the 2003 IECC. The IECC, developed by the International Code Council, is a model code that mandates certain energy efficiency standards. State construction or renovations of buildings larger than 10,000 square feet must meet a LEED standard or an equivalent standard.[310] Several levels of LEED standards comprise the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system.
- **Oklahoma does not impose** state-based appliance efficiency standards.

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† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[309] Building Codes Assistance Project, Code Status: Oklahoma, http://bcap-energy.org/node/89.

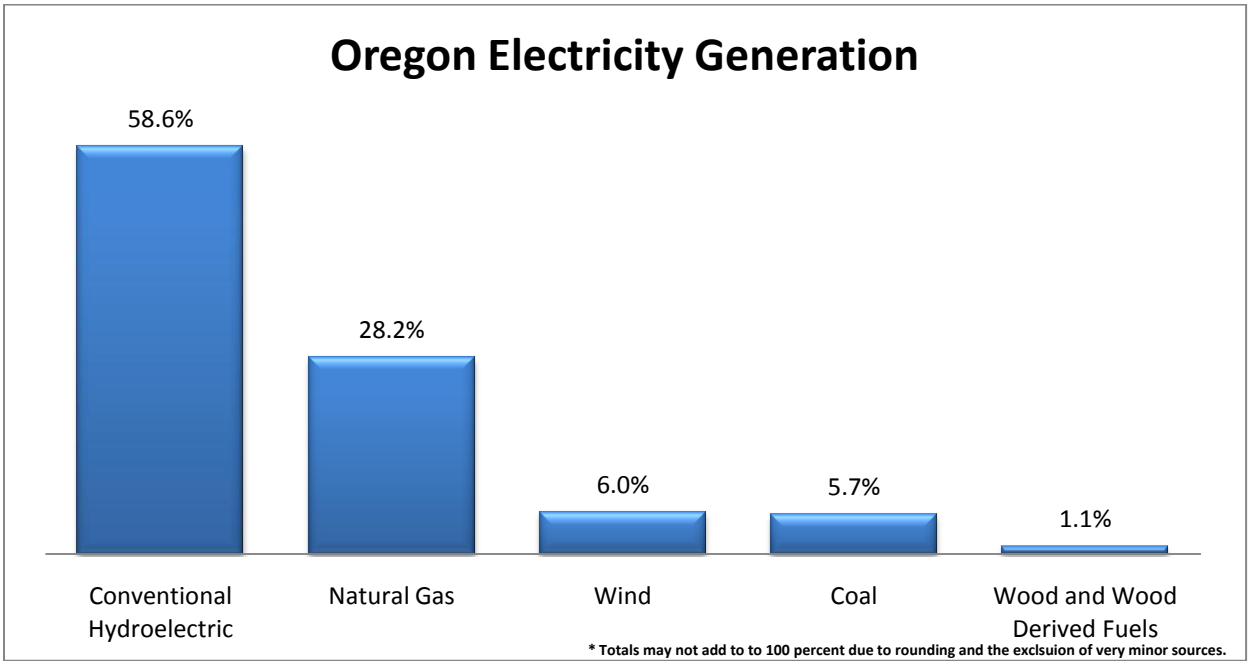
[310] H.B. 3394 (Okla. 2008), http://webserver1.lsb.state.ok.us/2007-08bills/HB/hb3394_enr.rtf.

- **Oklahoma does not allow** utilities to “decouple” revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity or natural gas.

Oregon Energy Facts

Oregon – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$38,801	16th highest
Unemployment	10.5	14th highest
Gasoline Price, per gallon	$2.89	12th highest
Electricity Price, per kWh	7.63¢	16th lowest

Oregon has relatively affordable electricity prices (23 percent below the national average) because hydroelectric power provides nearly 60 percent of Oregon's electricity. Only Washington produces more hydroelectric power than Oregon. About 30 percent of the state's electricity is produced from natural gas. Wind and wood combined provide another 7 percent of electricity supply.



Oregon lacks fossil fuel resources. Most of Oregon's hydroelectric electricity is generated on the Columbia River, on which the state's four largest electricity generation facilities are located. These sites have allowed the state to utilize its major energy resource, helping keep electricity prices relatively low. Oregon also has renewable resource potential in wind and geothermal energy.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Oregon's regulatory environment that are likely to affect the cost of energy or the cost of using energy. Oregon has passed a large number of costly regulations.

- **Oregon imposes** a goal of reducing its greenhouse gas emissions to 10 percent below 1990 levels by 2020 and to 75 percent below 1990 levels by 2050.[311] The bill, however, did not include the regulatory authorities necessary to achieve these goals. Instead, it established a Global Warming Commission responsible for recommending ways to meet the goals.
- **Oregon is a member** of the Western Climate Initiative (WCI), a regional agreement among some American governors and Canadian premiers to target greenhouse gas reductions. The central component of this agreement is the eventual enactment of a cap-and-trade scheme to reduce greenhouse gas emissions 15 percent below 2005 levels by 2020.
    - **Oregon has a de facto ban** on new coal-fired power plants. Senate Bill 101, passed in 2009, limits power plant emissions to 1,100 pounds of carbon dioxide per megawatt of generated electricity.[312] Because the law does not allow for the use of offsets to meet this standard, this regulation is a de facto ban on inexpensive coal power plants. In addition, House Bill 3283, enacted in 1997, requires new natural gas power plants to reduce greenhouse gas emissions by 17 percent, though offsets can be used to meet that standard.[313] The law also instituted other emissions limits on non-baseload and non-generating energy facilities.

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† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[311] H.B. 3543 (Or. 2007), http://www.leg.state.or.us/07reg/measpdf/hb3500.dir/hb3543.en.pdf.

[312] S.B. 101 (Or. 2009), http://www.leg.state.or.us/09reg/measpdf/sb0100.dir/sb0101.en.pdf.

[313] H.B. 3283 (Or. 1997), http://www.leg.state.or.us/97reg/measures/hb3200.dir/hb3283.a.html.

- **Oregon requires** utilities to generate from renewable sources a certain percentage of the electricity that they sell. The state's renewable portfolio standard requires: that large utilities (more than 3 percent of state load) generate 25 percent of retail electricity sales from newer renewables (those placed in service after January 1, 1995); that smaller utilities (over 1.5 percent of state load, but less than 3 percent of state load) meet a 10 percent RPS by 2025; and that the smallest utilities (less than 1.5 percent of state load) meet a 5 percent RPS by 2025.[314]
- **Oregon requires** gasoline to be mixed with renewable fuels. Senate Bill 1079, passed in 2008, mandates that all gasoline must contain 10 percent ethanol after in-state ethanol production passes 40 million gallons per year.[315] There is an analogous biodiesel quota for diesel.
    - House Bill 2186, passed in 2009, allows the Oregon Environmental Quality Commission (EQC) to adopt rules for the reduction of greenhouse gas emissions from transportation fuels.[316] This may include a low-carbon fuel standard, among other programs.
- **Oregon imposes** automobile fuel economy standards similar to California's, which attempts to regulate greenhouse gas emissions from new vehicles. In 2006, the Oregon Environmental Quality Commission (EQC) instituted permanent rules to adopt California's vehicle emissions standards.[317]
- **Oregon requires** new residential and commercial buildings to meet energy efficiency standards. One-to-two-family residential buildings must meet the 2008 Oregon Residential Specialty Code, which is based off the 2006 International Residential Code. Commercial buildings must meet the 2007 Oregon Structural Specialty Code, which is based off the 2006 International Building Code.[318] The International Residential and Building Codes, both developed by the International Code Council, are model codes that mandate certain energy efficiency standards. New state buildings must exceed state building code energy conservation provisions by at least 20 percent, while existing buildings must reduce energy use by 20 percent compared to baseline energy use in 2000.[319]
- **Oregon imposes** state-based appliance efficiency standards for automatic commercial icemakers, bottle-type water dispensers, commercial hot food holding cabinets, commercial refrigerators and freezers, compact audio produces, DVD players and recorders, and portable electric spas.[320]

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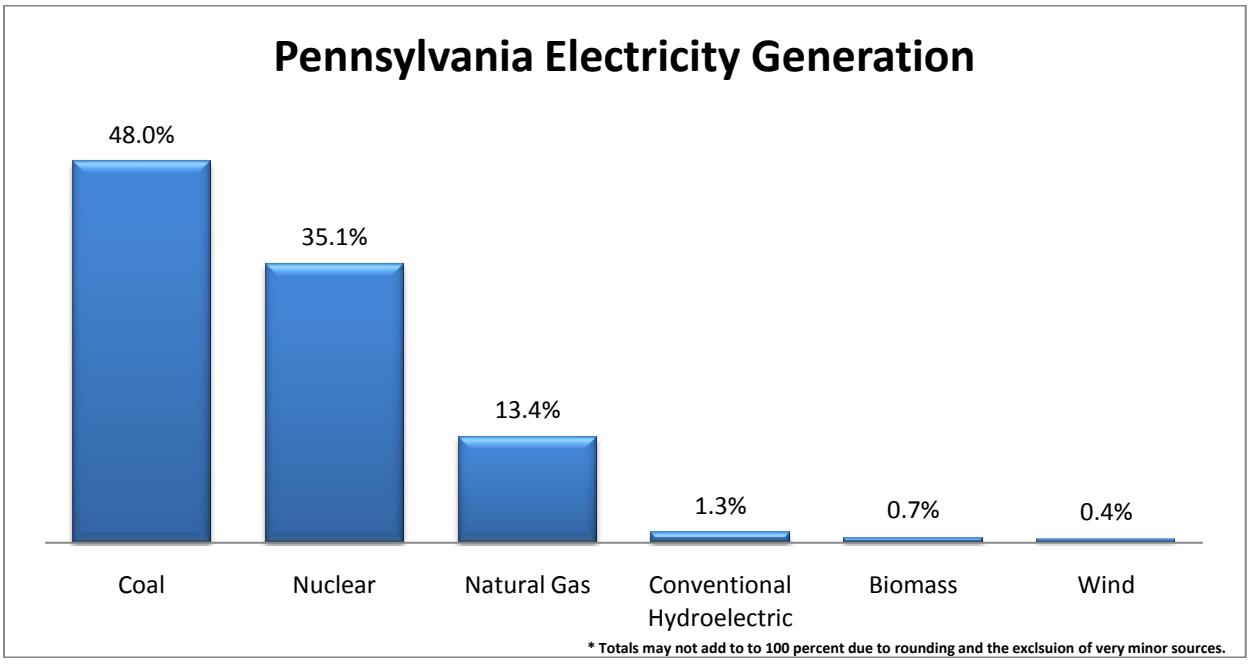
[314] Lawrence Berkeley National Laboratory, *Renewables Portfolio Standards in the United States*, http://eetd.lbl.gov/ea/ems/reports/lbnl-154e.pdf.
[315] S.B. 1079 (Or. 2008), http://www.leg.state.or.us/08ss1/measures/sb1000.dir/sb1079.en.html.
[316] H.B. 2186 (Or. 2009), http://www.leg.state.or.us/09reg/measpdf/hb2100.dir/hb2186.a.pdf.
[317] Oregon Department of Environmental Quality, Oregon's Low Carbon Fuel Standard, http://www.deq.state.or.us/aq/committees/lowcarbon.htm (last visited Mar. 8, 2010).
[318] Building Codes Assistance Program, Code Status: Oregon, http://bcap-energy.org/node/90.
[319] Oregon Department of Energy – Conservation Division, State Energy Efficiency Design (SEED) Program, http://oregon.gov/ENERGY/CONS/SEED/index.shtml.
[320] Oregon Department of Energy – Conservation Division, State-Regulated Appliance and Equipment Standards, http://www.oregon.gov/ENERGY/CONS/StateRegulatedApplianceStandards.shtml.

- **Oregon allows** utilities to “decouple” revenue from the actual sale of electricity and natural gas. Such decoupling allows utilities to increase their revenue by selling less electricity and natural gas.

Pennsylvania Energy Facts

Pennsylvania – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$35,641	25th lowest
Unemployment	8.9%	25th lowest
Gasoline Price, per gallon	$2.82	21st highest
Electricity Price, per kWh	9.60¢	18th highest

Pennsylvania has average electricity prices. Coal generates almost half of Pennsylvania's electricity, while nuclear provides more than a third of the state's supply from its five operating nuclear plants. Most of the rest of its electricity generation is supplied by natural gas. Pennsylvania is one of the nation's largest users of municipal solid waste and landfill gas for electricity generation and has hydroelectric and wind generation, but these resources contribute minimally to the state's electricity.



Pennsylvania has a rich endowment of fossil fuels, with substantial reserves of coal, recent production and reserves in shale natural gas in its Marcellus gas formation, but minor reserves of oil. Pennsylvania was the site of the world's first commercial oil well drilled at Titusville in 1859 and of the world's first oil boom, but the state's oil production is now relatively minor. Despite producing little oil, Pennsylvania is the leading petroleum-refining state in the Northeast, getting its oil mainly from foreign sources. Besides its shale natural gas resources, Pennsylvania gets its natural gas mainly from pipelines from the Gulf Coast. The state is a major coal producer, exporting coal to other states on the East Coast and in the Midwest. In addition

to fossil fuel resources, Pennsylvania has the second-largest nuclear capacity in the United States and was home to the nation's first commercial nuclear reactor at Shippingport in 1957. This, along with the state's fossil fuels, has made Pennsylvania one of the largest electricity generators in the country.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, or coal, or dramatically increase their prices.

Below are some facts about Pennsylvania's regulatory environment that are likely to affect the cost of energy or the cost of using energy.

- **Pennsylvania does not cap** greenhouse gas emissions.
- **Pennsylvania is an observer** of the Regional Greenhouse Gas Initiative (RGGI), a regional agreement among ten Northeast states to limit greenhouse gas emissions. This agreement requires states to cap carbon dioxide emissions from the electrical generation sector and to reduce those emissions by 10 percent by 2018 through a cap-and-trade scheme. As an observer to the agreement, Pennsylvania is not required to reduce its carbon dioxide emissions for power plants. It is likely Pennsylvania did not join RGGI because so much of its electricity is generated from coal.
- **Pennsylvania requires** utilities to generate from renewable sources a certain percentage of the electricity that they sell. The state's renewable portfolio standard requires utilities to generate 18 percent of its electricity from alternate energy sources by compliance year 2020 (June 1, 2020 to May 31, 2021).[321] It includes 8 percent from Tier I resources (defined as photovoltaic energy, solar-thermal energy, wind, low-impact hydro, geothermal, biomass, biologically-derived methane gas, coal-mine methane and fuel cells) by compliance year 2020, and 10 percent from Tier II resources (defined as waste coal, distributed generation systems, demand-side management, large-scale

† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[321] Lawrence Berkeley National Laboratory, *Renewables Portfolio Standards in the United States*, http://eetd.lbl.gov/ea/ems/reports/lbnl-154e.pdf.

hydro, municipal solid waste, wood pulping and manufacturing byproducts, and integrated gasification combined cycle coal technology), and 0.5 percent from solar photovoltaic.[322]

    - **Pennsylvania requires** utilities to meet a portion of electricity demand with energy efficiency. House Bill 2200, passed in 2008, requires utilities to implement programs to reduce consumer electricity demand. By May 2013, consumption must have decreased by at least 3 percent from levels projected by the Commission for the June 2009–May 2010 period, and peak demand must have decreased by at least 4.5 percent.[323]

- **Pennsylvania requires** diesel to be mixed with renewable fuels. All diesel fuel must be mixed with two percent biodiesel, with the percentage increasing to five percent after in-state production of biodiesels reaches 100 million gallons, ten percent when in-state production reaches 200 million gallons, and twenty percent when in-state production reaches 400 million gallons.[324] Also the state requires the motorists of the Philadelphia metropolitan areas to use reformulated motor gasoline blended with ethanol and the Pittsburgh area must use specially formulated gasoline as well.[325]
- **Pennsylvania imposes** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles. In 2006, the state's Environmental Quality Board approved the Clean Vehicles Program to adopt California's vehicle emissions standards.[326]
- **Pennsylvania requires** new residential and commercial buildings to meet energy efficiency standards. Residential and commercial buildings statewide are required to meet the 2006 International Energy Conservation Code (IECC).[327] Commercial buildings must also comply with ASHRAE 90.1-2004.[328] The IECC (developed by the International Code Council) and ASHRAE 90.1 (developed by the American Society of Heating and Refrigeration and Air Conditioning Engineers) are model codes that mandate certain energy efficiency standards.
- **Pennsylvania does not impose** state-based appliance efficiency standards. In 2004, Governor Ed Rendell issued Executive Order 2004-12, requiring state agencies to purchase Energy Star appliances when economical and consistent with life-cycle

[322] For more details on Pennsylvania's renewable portfolio standard, see the overview from the Database of State Incentives for Renewables and Efficiency: http://dsireusa.org/incentives/incentive.cfm?Incentive_Code=PA06R&re=1&ee=1.

[323] An Act Amending Title 66 (Public Utilities) of the Pennsylvania Consolidated Statutes, H.B. 2200 (Pa. 2008), http://www.legis.state.pa.us/cfdocs/billinfo/billinfo.cfm?syear=2007&sind=0&body=H&type=B&bn=2200.

[324] Pennsylvania Department of Environmental Protection, *Frequently Asked Questions*, http://www.depweb.state.pa.us/portal/server.pt/community/energy_independence/10473/faq/553044.

[325] Energy Information Administration, *Pennsylvania*, Apr. 8, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=PA.

[326] The Pennsylvania Bulletin, Environmental Quality Board, Pennsylvania Clean Vehicles Program, 25 PA Code Chs. 121 and 126, http://www.pabulletin.com/secure/data/vol36/36-49/2406.html.

[327] Building Codes Assistance Project, Code Status: Pennsylvania, http://bcap-energy.org/node/91.

[328] *Id.*

costs.[329] In the name of energy efficiency, in state owned or leased buildings, Pennsylvania bans coffee makers, microwave ovens, toasters, water coolers, refrigerators, and other appliances unless specifically approved by the Department of General Services or designated Commonwealth official.[330]

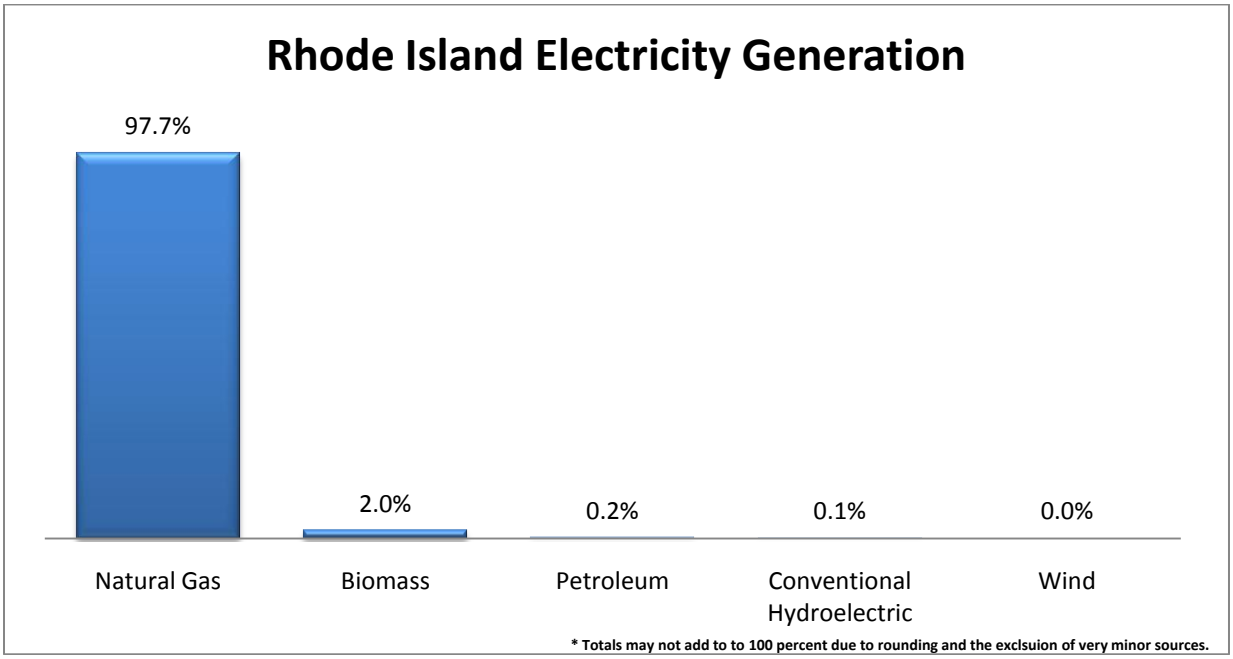
- **Pennsylvania does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[329] Commonwealth of Pennsylvania Management Directive, *Energy Conservation and Electrical Devices in Commonwealth-Owned or Leased Buildings*, http://www.portal.state.pa.us/portal/server.pt/gateway/PTARGS_0_2_785_711_0_43/http%3B/pubcontent.state.pa.us/publishedcontent/publish/global/files/management_directives/commonwealth_programs/720_5.pdf.
[330] *Id.*

Rhode Island Energy Facts

Rhode Island – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$36,283	24th highest
Unemployment	12.7%	3rd highest
Gasoline Price, per gallon	$2.81	23rd highest
Electricity Price, per kWh	14.24¢	8th highest

Like most of the states in the Northeast, Rhode Island's electricity prices are among the most expensive in the country. It is one of just two states in the country without coal-generated electricity. Instead, Rhode Island's electricity is primarily generated from natural gas. Natural gas represents a greater proportion of electricity generation in Rhode Island than in any other state, accounting for over 97 percent of the state's electricity.



Because Rhode Island has no fossil fuel resources, its natural gas is imported from production areas in the Gulf Coast and natural gas storage sites in the Appalachian Basin. Though Rhode Island is considered to have wind energy potential from offshore, wind does not contribute to the state's electricity supply. Just over 2 percent of Rhode Island's electricity is generated from renewables, including hydroelectric power, municipal solid waste, and landfill gas.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Rhode Island's regulatory environment that are likely to affect the cost of energy or the cost of using energy. Rhode Island has enacted several policies that increase the cost of energy. Electricity prices in Rhode Island are among the highest in the country, owing in part to some of its regulations.

- **Rhode Island does not cap** greenhouse gas emissions. However, as a member of the Regional Greenhouse Gas Initiative, it has imposed a cap on greenhouse gas emissions from power plants.
- **Rhode Island is a member** of the Regional Greenhouse Initiative (RGGI), a regional agreement among ten Northeast states to limit greenhouse gas emissions. This agreement requires states to cap carbon dioxide emissions from the electrical generation sector and to reduce those emissions by 10 percent by 2018 through a cap-and-trade scheme.
- **Rhode Island requires** utilities to generate from renewable sources a certain percentage of the electricity that they sell. The state's renewable portfolio standard requires utilities to generate 16 percent of their retail electricity sales from renewables by the end of 2019.[331]
- **Rhode Island requires** the use of reformulated motor gasoline blended with ethanol.[332] Rhode Island has also agreed to cooperate with other Northeastern states to develop a regional low-carbon fuel standard.
- **Rhode Island does impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles. Rhode

† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[331] Lawrence Berkeley National Laboratory, *Renewables Portfolio Standards in the United States*, http://eetd.lbl.gov/ea/ems/reports/lbnl-154e.pdf

[332] Energy Information Administration, *Rhode Island*, Apr. 8, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=RI.

Island's Low Emissions Vehicle Program was implemented through Air Pollution Control Regulation Number 37 in 2005, adopting California's vehicle emissions standards.[333]

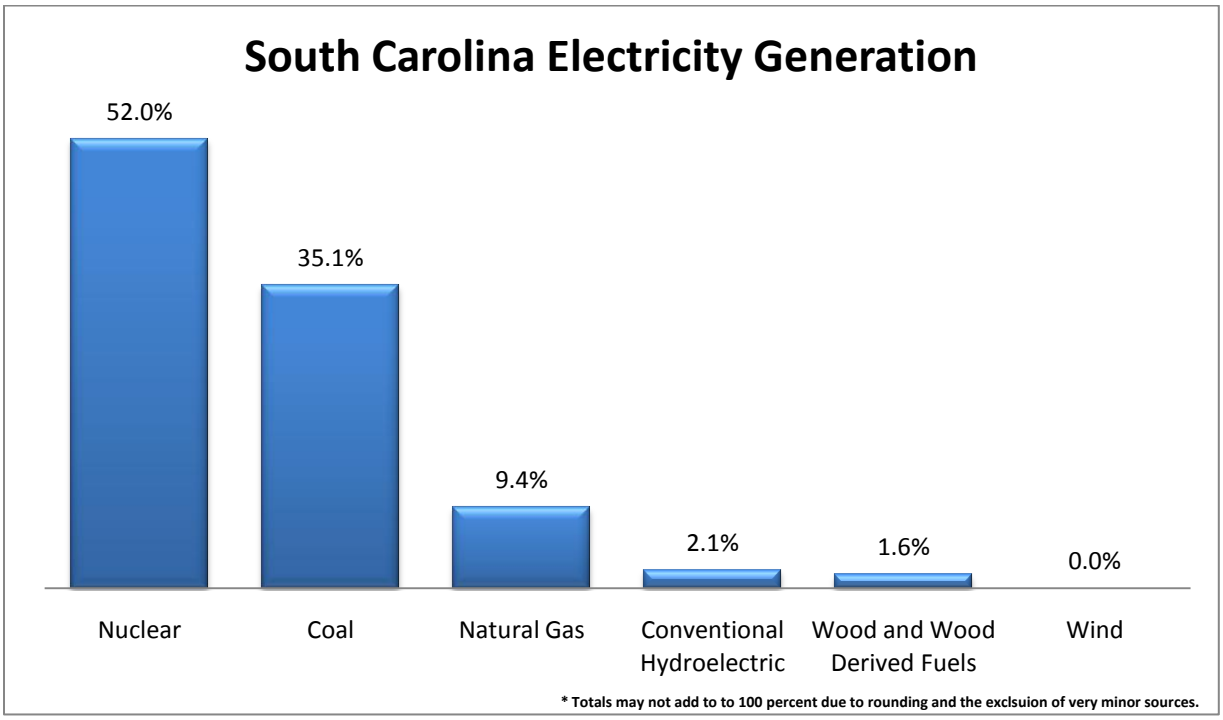
- **Rhode Island requires** new residential and commercial buildings to meet energy efficiency standards. Residential and commercial buildings must meet the 2006 International Energy Conservation Code (IECC). Commercial buildings must also meet ASHRAE-90.1-2004.[334] The IECC (developed by the International Code Council) and ASHRAE 90.1 (developed by the American Society of Heating and Refrigeration and Air Conditioning Engineers) are model codes that mandate certain energy efficiency standards. House Bill 5986, enacted in 2009, requires the state's standards to be updated to incorporate the 2009 IECC and ASHRAE 90.1-2007 before final approval by the legislature's Legislative Oversight Committee.[335] Governor Donald Carcieri issued Executive Order 05-14 in 2005, requiring new state construction and renovations to meet the silver LEED standard.[336] The silver LEED standard is one level of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system.
- **Rhode Island imposes** state-based appliance efficiency standards. These standards apply to high-intensity discharge lamp ballasts, automatic commercial icemakers, metal halide lamp fixtures, residential boilers and furnaces, incandescent spot lights (reflector lamps), bottled water dispensers, commercial hot food holding cabinets, and walk-in and reach-in refrigerators and freezers.[337]
- **Rhode Island does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[333] Rhode Island Department of Environmental Management – Office of Air Resources, *Rhode Island's Low Emissions Vehicle Program*, http://www.dem.ri.gov/pubs/regs/regs/air/air37_07.pdf.
[334] Building Codes Assistance Project, Code Status: Rhode Island, http://bcap-energy.org/node/92.
[335] H.B. 5986 (R.I. 2009), http://www.rilin.state.ri.us/BillText/BillText09/HouseText09/H5986.pdf.
[336] R.I. Exec. Order 05-14 (Aug. 22, 2005), http://www.governor.ri.gov/documents/executiveorders/2005/14_NewBuildings_Energy_Environmental_Standards.pdf.
[337] Database of State Incentives for Renewables and Efficiency, Rhode Island Appliance and Equipment Efficiency Standards, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=RI10R&re=0&ee=1.

South Carolina Energy Facts

South Carolina – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$28,364	5th lowest
Unemployment	12.5%	4th highest
Gasoline Price, per gallon	$2.63	3rd lowest
Electricity Price, per kWh	8.28¢	21st lowest

South Carolina has below average electricity prices (16 percent lower) and the third lowest gasoline prices in the United States. More than half of South Carolina's electricity is generated by nuclear power plants and another 35 percent comes from coal-fired power plants. Natural gas supplies most of the remainder, with gas supplied by pipeline from the Gulf coast.



South Carolina is one of the top nuclear power producers in the United States. The state currently has four nuclear power plants, and plans for two new reactors are underway if licensing is approved by the Nuclear Regulatory Commission. As part of a new wave of proposed nuclear projects, these power plants could be among the first nuclear facilities constructed in the United States in more than 30 years. South Carolina has no coal deposits of its own, so its coal is primarily imported from Kentucky, with some coal originating in Pennsylvania, West Virginia and Tennessee. Renewable resources, primarily hydroelectric power and wood, supply almost 4 percent of the state's generation.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about South Carolina's regulatory environment that are likely to affect the cost of energy or the cost of using energy. South Carolina has thus far avoided many of the costly energy policies other states are implementing.

- **South Carolina does not cap** greenhouse gas emissions.
- **South Carolina is not a member** of a regional agreement to cap greenhouse gas emissions.
- **South Carolina does not require** utilities to sell a certain percentage of electricity from renewable sources.
- **South Carolina does not require** gasoline to be mixed with renewable fuels.
- **South Carolina does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **South Carolina requires** new residential and commercial buildings to meet energy efficiency standards. House Bill 3550, enacted in 2009, requires new residential and commercial buildings to meet the 2006 International Energy Conservation Code (IECC).[338] The IECC, developed by the International Code Council, is a model code that mandates certain energy efficiency standards. All major state construction projects must meet the silver LEED standard or an equivalent standard.[339] The silver LEED standard is one level of the U.S. Green Building Council's Leadership in Energy and Environmental

† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[338] Building Codes Assistance Project, Code Status: South Carolina, http://bcap-energy.org/node/93.

[339] Database of State Incentives for Renewables and Efficiency, South Carolina State Building Energy Standards http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=SC07R&re=0&ee=1.

Design (LEED) rating system. Also, the state has a goal to reduce energy use by 20 percent from 2000 level by July 1, 2020.[340]

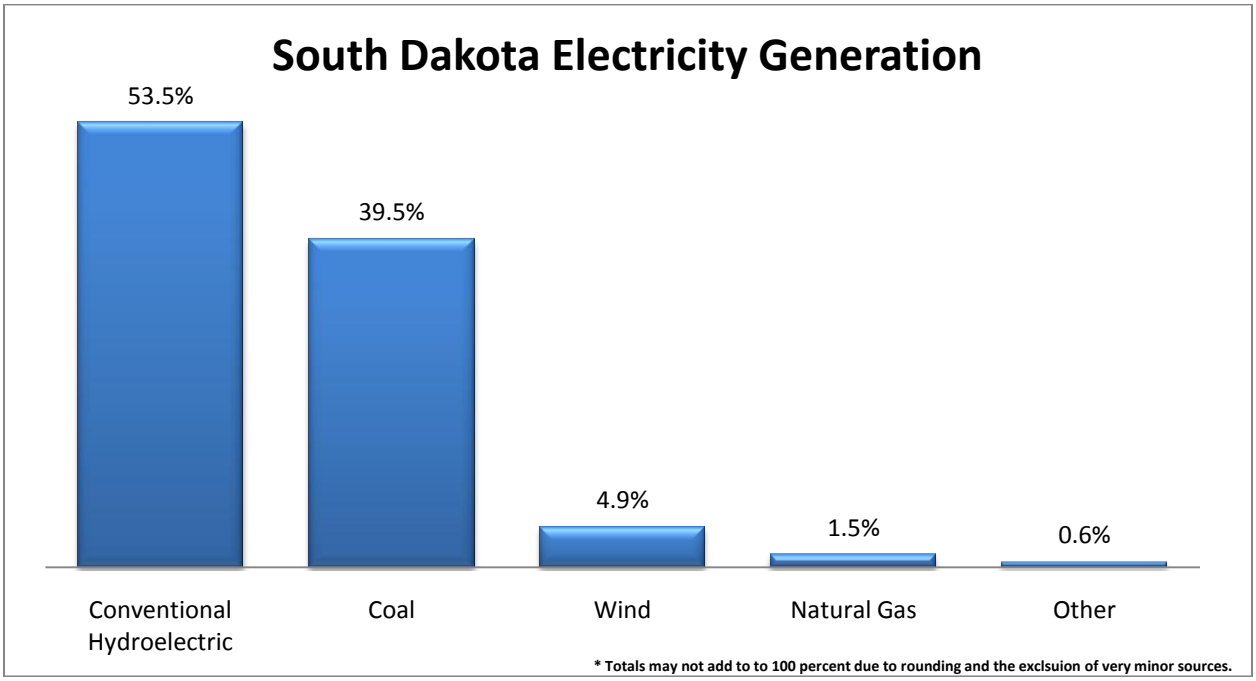
- **South Carolina does not impose** state-based appliance efficiency standards.
- **South Carolina does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[340] Energy Information Administration, *South Carolina*, Apr. 8, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=SC.

South Dakota Energy Facts

South Dakota – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$37,690	21st highest
Unemployment	4.8%	2nd lowest
Gasoline Price, per gallon	$2.84	17th highest
Electricity Price, per kWh	7.35¢	13th lowest

South Dakota enjoys affordable electricity prices (26 percent below the national average), in part because the state's electricity is primarily generated from coal and hydroelectricity, which are some of the most inexpensive sources of energy. Coal generates about 40 percent of South Dakota's electricity, while hydroelectric provides more than half. Wind generates about five percent of the state's electricity demand.



The majority of electricity produced in South Dakota comes from hydroelectric power on the Missouri River with three of its five largest electric plants being hydroelectric. South Dakota imports coal from Wyoming to satisfy its coal demand. As a major corn producer, the state is one of the Nation's leading producers of ethanol. With few fossil fuel reserves, South Dakota gets its natural gas by pipeline from Canada and Texas.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, or coal, or dramatically increase their prices.

Below are some facts about South Dakota's regulatory environment that are likely to affect the cost of energy or the cost of using energy. South Dakota has thus far avoided many of the costly energy policies other states are implementing.

- **South Dakota does not cap** greenhouse gas emissions.
- **South Dakota is an observer** of the Midwestern Regional Greenhouse Gas Reduction Accord, a regional agreement among six American governors and one Canadian premier to target greenhouse gas reductions. The central component of this agreement is the eventual enactment of a cap-and-trade scheme, perhaps supported by low-carbon fuel standards and other supplemental policies. As an observer of the Accord, South Dakota would not be bound to agreements made by Accord members.
- **South Dakota does not require** utilities to generate from renewable sources a certain percentage of that electricity that they sell but it has a non-binding renewable portfolio goal to generate 10 percent of retail electricity sales from renewable energy and recycled energy by 2015.[341]
- **South Dakota does not require** gasoline to be mixed with renewable fuels.
- **South Dakota does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **South Dakota does not require** new residential and commercial buildings to meet energy efficiency standards. But Senate Bill 188, enacted in 2008, requires new state construction and renovation, costing more than $500,000 or including more than 5,000 square feet of space, to meet the silver LEED standard or an equivalent standard.[342] The

† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[341] Lawrence Berkeley National Laboratory, *Renewables Portfolio Standards in the United States*, http://eetd.lbl.gov/ea/ems/reports/lbnl-154e.pdf.

[342] Building Codes Assistance Project, Code Status: South Dakota, http://bcap-energy.org/node/94.

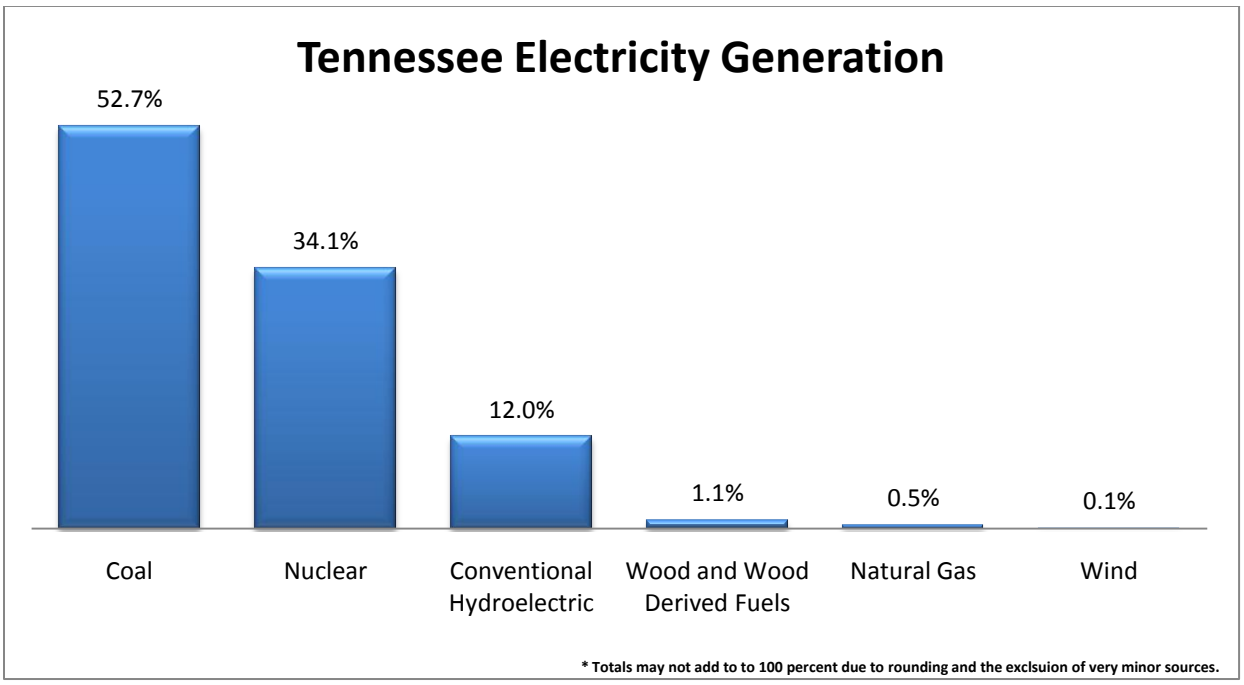
silver LEED standard is one level of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system.

- **South Dakota does not impose** state-based appliance efficiency standards.
- **South Dakota does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

Tennessee Energy Facts

Tennessee – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$33,825	20th lowest
Unemployment	10.7%	13th highest
Gasoline Price, per gallon	$2.68	6th lowest
Electricity Price, per kWh	8.66¢	24th lowest

Tennessee has below average electricity prices (12 percent below the national average). The majority of Tennessee's electricity is produced by coal. Tennessee is one of the top hydroelectric-generating states east of the Rocky Mountains, producing 12 percent of its electricity from hydroelectric power. Tennessee generates over 30 percent of its electricity from nuclear power.



Tennessee does not have large energy reserves. It has minor coal reserves but primarily uses coal imported from Kentucky, Wyoming, West Virginia, Virginia, Illinois, and Colorado. The state is one of the leading nuclear power states in the country, with two nuclear power plants. The Watts Bar Nuclear Power Plant, which began commercial operation in 1996, is the newest nuclear reactor in the country. Non-hydroelectric renewables, primarily wood and wind, together contribute just over one percent of the state's generation. Tennessee also produces ethanol and has the second highest production in the south behind Texas.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Tennessee's regulatory environment that are likely to affect examples of regulations that will likely increase the cost of energy or the cost of using energy. Tennessee has thus far avoided many of the costly energy policies other states are implementing.

- **Tennessee does not cap** greenhouse gas emissions.
- **Tennessee is not a member** of a regional agreement to cap greenhouse gas emissions.
- **Tennessee does not require** utilities to generate from renewable sources a certain percentage of the electricity that they sell.
- **Tennessee does not require** gasoline to be mixed with renewable fuels.
- **Tennessee does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **Tennessee does not require** new residential and commercial buildings to meet energy efficiency standards.
- **Tennessee does not impose** state-based appliance efficiency standards. However, Senate Bill 2300, enacted in 2009, requires state agencies to purchase Energy Star-qualified office equipment, appliances, lighting, and heating and cooling products and systems in the future.[343]
- **Tennessee does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

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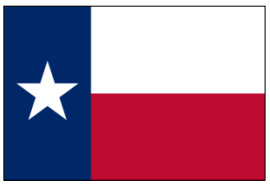
† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

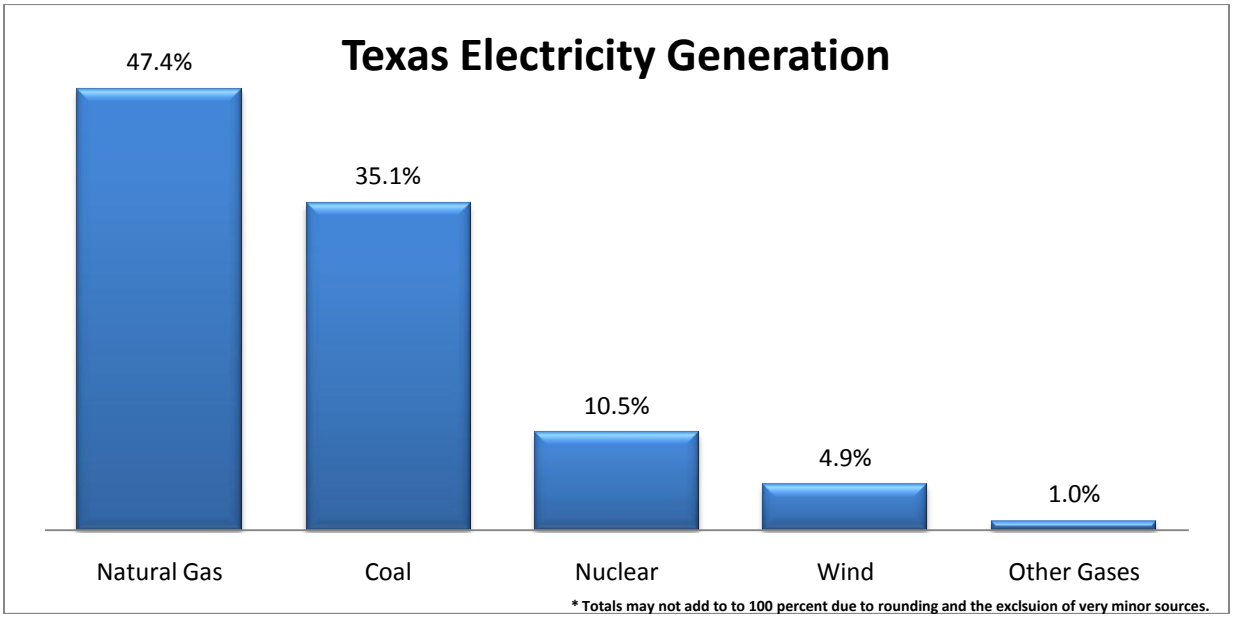
[343] S.B. Bill 2300 (Tenn. 2009), http://www.capitol.tn.gov/Bills/106/Chapter/PC0529.pdf.



Texas Energy Facts

Texas – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$38,044	19th highest
Unemployment	8.2%	19th lowest
Gasoline Price, per gallon	$2.67	5th lowest
Electricity Price, per kWh	10.18¢	16th highest

Even though Texas has enormous energy resources, it has moderately expensive electricity prices (3 percent higher than the national average). Almost half of Texas's electricity is generated from natural gas. Over 35 percent of the state's electricity is generated from coal, most of which is imported from Wyoming, adding to its own coal supply principally of lignite coal, a low grade of coal. Texas has the largest wind capacity in the United States and generates about 5 percent of its power from wind. Two nuclear power plants, Comanche Peak and South Texas Project account for about 10 percent of generation.



Texas holds almost a quarter of the nation's oil reserves and about 30 percent of America's natural gas reserves. Texas is the nation's leading producer of both oil and natural gas. The state consumes more natural gas than any other state. It opened its first liquefied natural gas terminal in 2008 and has others either proposed or under construction. The state also has more than a quarter of the country's petroleum-refining capacity, with a total of 27 refineries capable of processing more than 4.7 million barrels of oil per day. The Texas panhandle has several ethanol plants from corn and milo (a small drought-resistant grain sorghum added to corn as a

feedstock). Texas also has potential in other renewable resources such as solar, hydro power, and biomass, but their contribution currently to electric generation is minor.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Texas's regulatory environment that are likely to affect the cost of energy or the cost of using energy. Texas has thus far avoided many of the costly energy policies other states are implementing.

- **Texas does not cap** greenhouse gas emissions.
- **Texas is not a member** of a regional agreement to cap greenhouse gas emissions.
- **Texas does mandate** that utilities generate from renewable sources a certain amount of the electricity that they sell. The state's renewable portfolio standard requires that utilities have 5,880 megawatts of renewable capacity by 2015, including a target of 500 megawatts of renewable-energy capacity from resources other than wind. The legislation also set a target of reaching 10,000 megawatts of renewable energy capacity by 2025.[344]
- **Texas does not require** gasoline to be mixed with renewable fuels. However, the state requires four different motor gasoline blends in different parts of the state including reformulated motor gasoline blended with ethanol in the Houston and Dallas-Fort Worth metropolitan areas.[345]
- **Texas does not impose** automobile fuel economy standards to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.

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† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[344] Public Utility Commission of Texas, Substantive Rules Applicable to Electric Service Providers, Chapter 25, Subchapter H, Division 1, §25.173, http://www.puc.state.tx.us/rules/subrules/electric/25.173/25.173.pdf.

[345] Energy Information Administration, *Texas*, Apr. 8, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=TX.

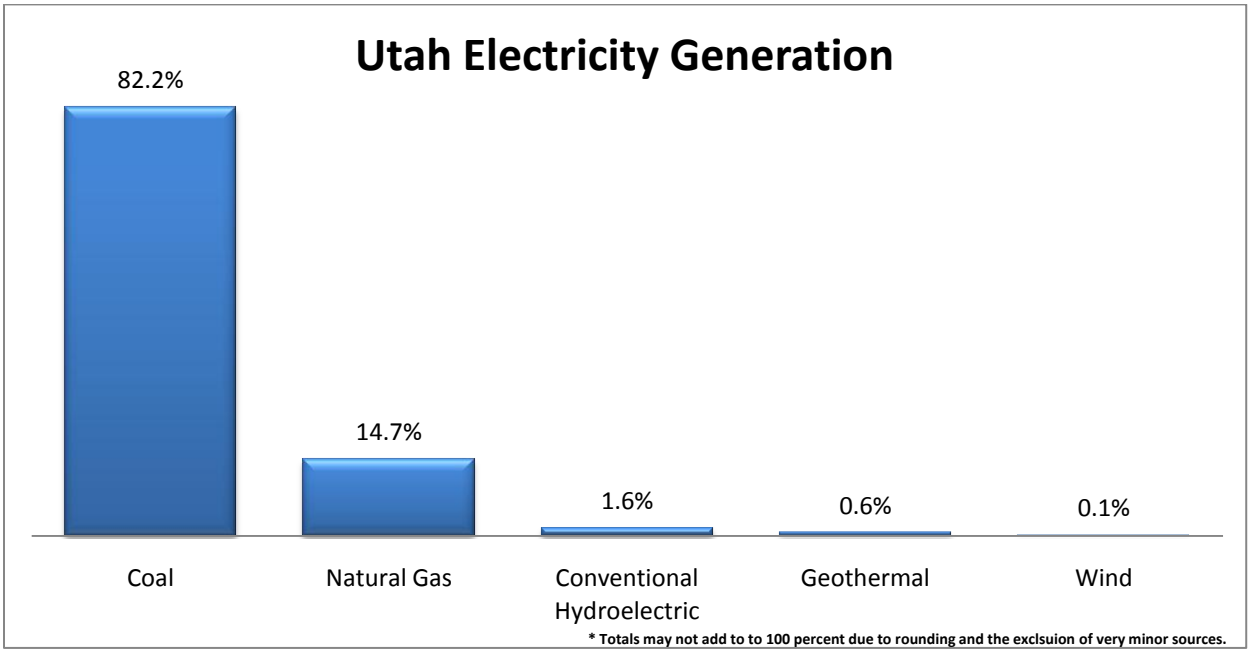
- **Texas does not require** new residential and commercial buildings to meet energy efficiency standards. But Texas requires the 2003 International Energy Conservation Code (IECC) for state-funded residential construction and ASHRAE 90.1-2007 for state-funded commercial buildings.[346] The state also requires state government departments to analyze the cost of implementing energy efficiency measures or using alternative energy sources for new and reconstructed state buildings. House Bill 3693 mandates energy efficiency standards for new and rehabilitated single and multi-family dwellings that receive state support.[347]
- **Texas does not impose** state-based appliance efficiency standards. However, state-owned or leased buildings must use Energy Star appliances and equipment and vending machines with energy saving devices. State buildings, institutes of higher education, and schools must also use low wattage light bulbs.[348]
- **Texas allows** electric utilities to "decouple" revenue from the sale of electricity, but does not allow gas utilities to decouple. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[346] Building Codes Assistance Project, Code Status: Texas, http://bcap-energy.org/node/96#current.
[347] Database of State Incentives for Renewables and Efficiency, Texas Energy Efficiency Goals and Requirements for Public Entities, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=TX13R&re=0&ee=1.
[348] *Id.*

Utah Energy Facts

Utah – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$32,049	12th lowest
Unemployment	7.1%	10th lowest
Gasoline Price, per gallon	$2.95	6th highest
Electricity Price, per kWh	6.78¢	6th lowest

Utah benefits from some of the most affordable electricity prices in the nation. Coal provides more than 80 percent of the state's electricity, which contributes to the state's low prices because coal is the most affordable energy resource. About 15 percent of Utah's electricity is produced from natural gas, while hydroelectricity and geothermal combined contribute about 2 percent to the state's electricity supply.



Utah is home to vast energy resources including reserves of oil, coal, and natural gas. It accounts for approximately one percent of the nation's oil production, 2 percent of natural gas production, over 2 percent of the nation's coal production. Coalbed methane accounts for almost 20 percent of Utah's natural gas production. The Green River Formation, part of which is in eastern Utah, holds the largest known oil shale deposits in the world. The U.S. Geological Survey estimates that oil shale in Utah, Colorado, and Wyoming holds over two trillion barrels of oil resources. Utah is one of the few states with geothermal electricity generation with two operational facilities.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Utah's regulatory environment that are likely to affect the cost of energy or the cost of using energy. Utah has thus far avoided many of the costly energy policies other states are implementing.

- **Utah does not cap** greenhouse gas emissions.
- **Utah is a member** of the Western Climate Initiative (WCI), a regional agreement among some American governors and Canadian premiers to target greenhouse gas reductions. The central component of this agreement is the eventual enactment of a cap-and-trade scheme to reduce greenhouse gas emissions 15 percent below 2005 levels by 2020. Such a plan would need to be enacted by the state legislature, which was not consulted when Utah's governor joined the Western Climate Initiative.
- **Utah does not require** that utilities generate from renewable sources a certain percentage of the electricity that they sell. But the state has renewable portfolio goal which calls for utilities to generate 20 percent of adjusted retail electricity sales from renewables by 2025, if cost-effective.[349]
- **Utah does not require** gasoline to be mixed with renewable fuels. However, the state requires the use of a low volatility blend of motor fuel in the Salt Lake and Provo-Orem metropolitan areas.[350]
- **Utah does not impose** automobile fuel economy standards similar to California's, which include California's attempts to regulate greenhouse gas emissions from new vehicles. The Western Climate Initiative has agreed to adopt California's vehicle emissions standards, but the state legislatures in each state would need to approve these

† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[349] Energy Resources and Carbon Emission Reduction Initiative, S.B. 202 (Utah 2008), http://le.utah.gov/~2008/bills/sbillenr/sb0202.pdf.

[350] Energy Information Administration, *Utah*, Apr. 8, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=UT.

regulations and Utah's legislature has not passed the necessary regulation to impose California's automobile fuel economy standards on Utahans.

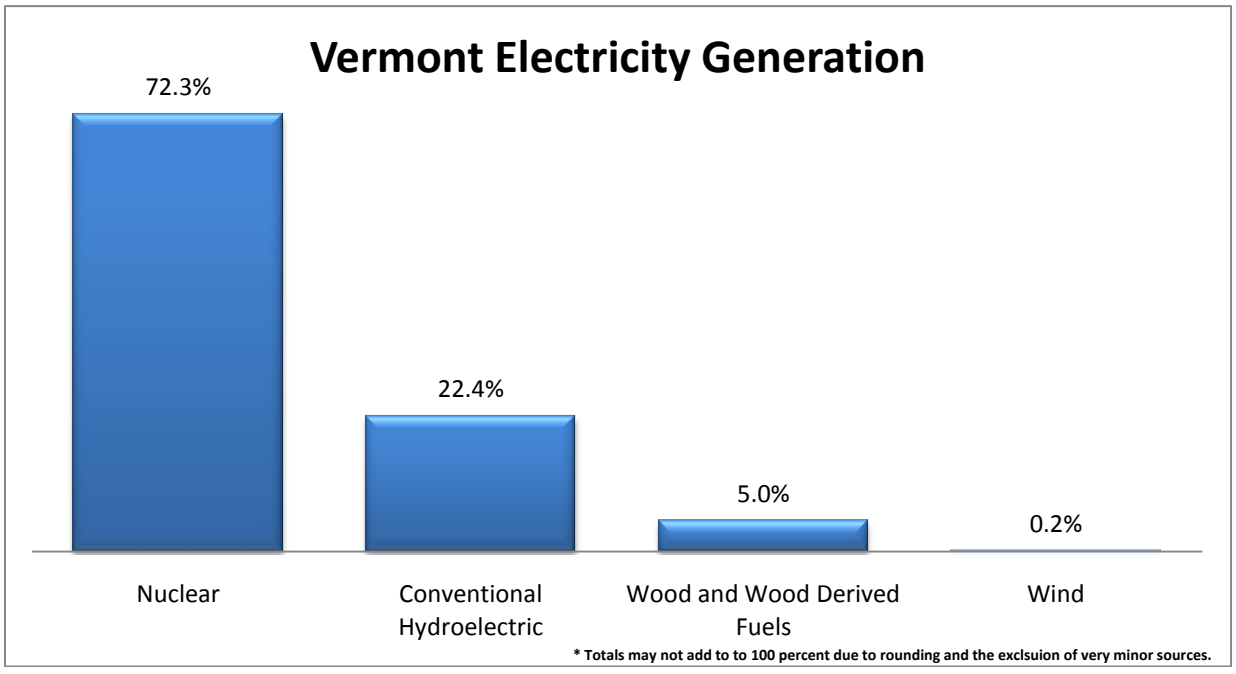
- **Utah requires** new residential and commercial buildings to meet energy efficiency standards. Residential and commercial buildings must meet the 2006 International Energy Conservation Code (IECC). Commercial buildings must also meet ASHRAE 90.1-2004.[351] IECC (developed by the International Code Council) and ASHRAE 90.1 (developed by the American Society of Heating and Refrigeration and Air Conditioning Engineers) are model codes that mandate certain energy efficiency standards. House Bill 80, enacted in 2006, requires the development of efficiency guidelines for new state construction.[352]
- **Utah does not impose** state-based appliance efficiency standards, but **Utah requires** state agencies to purchase energy-efficient appliances. House Bill 80, enacted in 2006, requires state agencies to buy energy-efficient products whenever practical.[353]
- **Utah does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[351] Building Codes Assistance Project, Code Status: Utah, http://bcap-energy.org/node/97.
[352] Energy Savings in State Buildings, H.B. 80 (Utah 2006), http://www.le.state.ut.us/~2006/bills/hbillenr/hb0080.pdf.
[353] *Id.*

Vermont Energy Facts

Vermont – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$34,924	22nd lowest
Unemployment	6.6%	5th lowest
Gasoline Price, per gallon	$2.84	17th highest
Electricity Price, per kWh	12.75¢	12th highest

Vermont has expensive electricity prices (29 percent above the national average). Like most of the states in the Northeast, Vermont's electricity prices are among the highest in the country. Vermont is one of just two states in the country without coal-generated electricity. Instead, the state primarily uses nuclear power, which produces over 70 percent of the state's electricity, with most of the generation coming from the Yankee Nuclear Power Plant. Vermont uses nuclear power for a larger proportion of its electricity than any other state.



While the state has no fossil fuel resources, Vermont uses other natural resources for most of its non-nuclear electricity. Vermont generates over 20 percent of its electricity from hydroelectric power, produced on the Connecticut River and Lake Champlain, and 5 percent from biomass, collected from the state's forests, for most of its remaining electricity supply. Wind energy minimally contributes to the state's electricity.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Vermont's regulatory environment that are like to affect the cost of energy or the cost of using energy. Vermont has enacted several policies that increase the cost of electricity or gasoline. Electricity prices in Vermont are among the highest in the country, owing in part to some of its regulations. These prices, and its lack of industry, may contribute to Vermont's status as the lowest energy consumer in the nation and one of the lowest per capita. Vermont also has the lowest demand for petroleum in the country.

- **Vermont does not cap** greenhouse gas emissions. However, as a member of the Regional Greenhouse Gas Initiative, it has imposed a cap on greenhouse gas emissions from power plants.
- **Vermont is a member** of the Regional Greenhouse Gas Initiative (RGGI), a regional agreement among ten Northeast states to limit greenhouse gas emissions. This agreement requires states to cap carbon dioxide emissions from the electrical generation sector and to reduce those emissions by 10 percent by 2018 through a cap-and-trade scheme.
- **Vermont requires** utilities to generate from renewable sources a certain percentage of the electricity that they sell unless their goals are not met. The state has a non-binding renewable portfolio goal that utilities generate 20 percent of electricity from renewable sources by July 1, 2017.[354] However, if certain interim goals are not met, this goal will become a mandated standard. In addition, the same legislation included a goal that 25 percent of energy consumed in Vermont be generated from renewables by 2025.
    - **Vermont imposes** a feed-in tariff for renewables, requiring utilities to purchase renewable energy at an increased price. House Bill 446, enacted in 2009, offers

† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[354] VT. STAT. Ann. Title 30, Chapter 89 (2009), http://www.leg.state.vt.us/statutes/sections.cfm?Title=30&Chapter=089.

this incentive to every participating renewable generator with a nameplate capacity of 2.2 megawatts or less.[355] The law sets a program cap of 50 megawatts, after which new generators will no longer be offered the incentive. By increasing the cost of renewable energy, this law increases electricity prices for consumers and businesses.

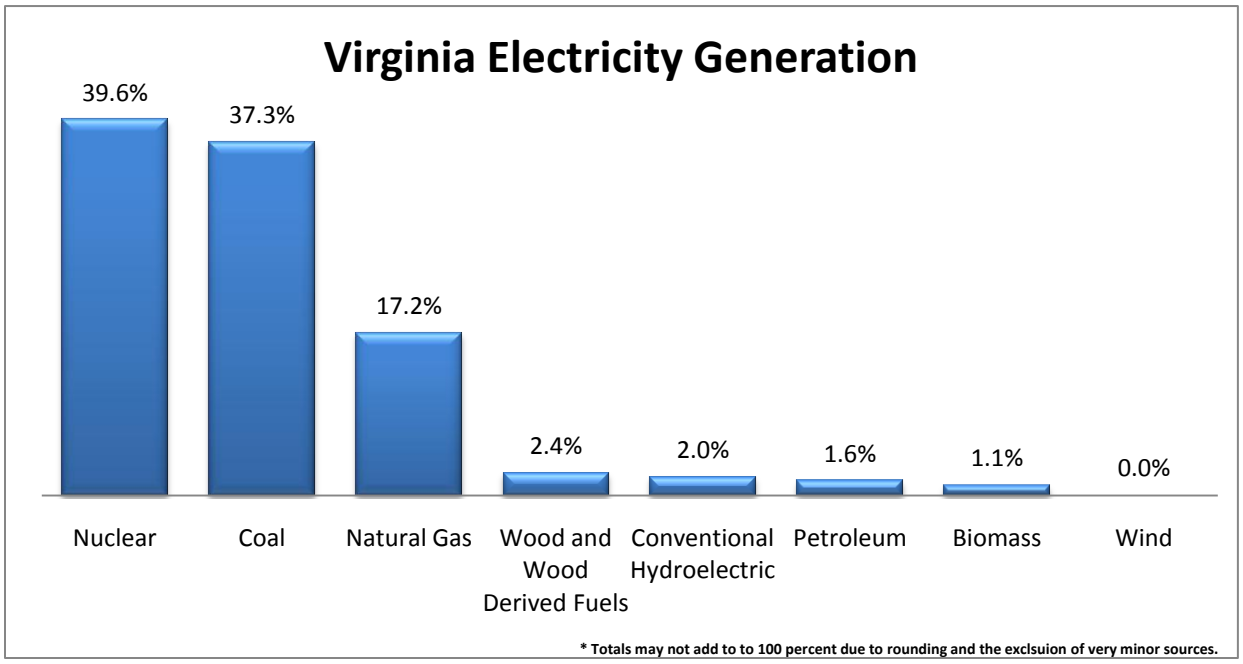
- **Vermont does not require** gasoline to be mixed with renewable fuels. However, Vermont's governor agreed to cooperate with other Northeastern states to develop a regional low-carbon fuel standard.
- **Vermont imposes** automobile fuel economy standards similar California's, which include attempts to regulate greenhouse gas emissions from new vehicles. The Vermont Air Pollution Control Division amended its low-emission vehicles regulation in November 2005 by enacting a rule to adopt California's vehicle emissions standards.[356]
- **Vermont requires** new residential and commercial buildings to meet energy efficiency standards. The state enforces the Vermont Residential Building Energy Standards (RBES), which is based on the 2000 International Energy Conservation Code (IECC) for residential buildings. The IECC, developed by the International Code Council, is a model code that mandates certain energy efficiency standards. Commercial buildings must follow similar statewide guidelines that are based on the 2004 IECC with amendments to include ASHRAE 90.1-2004 and state-specific amendments.[357] ASHRAE 90.1 is a model code that mandates certain energy efficiency standards and was developed by the American Society of Heating and Refrigeration and Air Conditioning Engineers. House Bill 446, enacted in 2009, directed the Department of Public Service to amend the state's codes to comply with the 2009 IECC or ASHRAE 90.1-2007, whichever is greater, by 2011.[358]
- **Vermont imposes** state-based appliance efficiency standards. House Bill 253, enacted in 2006, established efficiency standards for medium-voltage dry-type transformers, metal halide lamp fixtures, residential furnaces and boilers, and residential furnace fans.[359]
- **Vermont allows** one electric utility to "decouple" revenue from the sale of electricity, and other utilities may apply for decoupling. Decoupling revenue from actual sales allows utilities to increase their revenue by selling less electricity and natural gas.

[355] Vermont Energy Act of 2009, H.B. 446 (Vt. 2009), http://www.leg.state.vt.us/docs/2010/bills/House/H-446.pdf.
[356] Vermont Agency of Natural Resources – Air Pollution Control Division, Subchapter XI: Low Emission Vehicle Program, 5-1101, Definitions, http://www.anr.state.vt.us/air/docs/Adopted%20GHG%20Rule.pdf.
[357] Building Codes Assistance Project, Code Status: Vermont, http://bcap-energy.org/node/46.
[358] Vermont Energy Act of 2009, H.B. 446 (Vt. 2009), http://www.leg.state.vt.us/docs/2010/bills/Passed/H-446.pdf.
[359] Database of State Incentives for Renewables and Efficiency, Vermont Energy Efficiency Standards for Appliances, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=VT05R&re=0&ee=1.

Virginia Energy Facts

Virginia – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$41,769	8th highest
Unemployment	7.2%	12th lowest
Gasoline Price, per gallon	$2.72	17th lowest
Electricity Price, per kWh	8.95¢	23rd highest

Virginia has below average electricity prices (10 percent below the national average). Coal provides over 37 percent of Virginia's electricity, while two nuclear power plants meet almost 40 percent of the state's demand. Natural gas generates most of the state's remaining electricity.



Virginia has some coal and other energy resources. Virginia produces more than 5 percent of America's coal production east of the Mississippi River and exports much of that coal to Georgia and Tennessee. Most of Virginia's natural gas production comes from coalbed methane, but most of the state's natural gas supply comes from the Gulf Coast via pipeline. Resource assessments show that Virginia's offshore waters could contain substantial natural gas resources, but a combination of presidential and congressional bans on offshore exploration kept these resources off limits until 2008. Reviews by the federal government are underway to access these resources.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Virginia's regulatory environment that are likely to affect the cost of energy or the cost of using energy. Virginia has thus far avoided some of the costly energy policies other states are implementing.

- **Virginia does not cap** greenhouse gas emissions.
- **Virginia is not a member** of a regional agreement to cap greenhouse gas emissions.
- **Virginia does not require** that utilities generate from renewable sources a certain percentage of the electricity that they sell. However, the state has enacted a non-binding renewable portfolio goal to generate 15 percent of base year (2007) electricity sales from renewables by 2025.[360]
- **Virginia does not require** gasoline to be mixed with renewable fuels. However, the state requires the use of reformulated motor gasoline blended with ethanol in the Washington D.C., Richmond, and Norfolk-Hampton Roads metropolitan areas.[361]
- **Virginia does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emissions from new vehicles.
- **Virginia requires** new residential and commercial buildings to meet energy efficiency standards. Residential and commercial buildings must meet the 2006 International Energy Conservation Code (IECC).[362] The IECC, developed by the International Code Council, is a model code that mandates certain energy efficiency standards. Localities are responsible for enforcing the state code. In addition, Governor Tim Kaine issued Executive Order 48 in 2007, which requires newly constructed or renovated state

† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[360] VA. CODE § 56-585.2 (2007), http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+56-585.2.

[361] Energy Information Administration, *Virginia*, Apr. 8, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=VA.

[362] Database of State Incentives for Renewables and Efficiency, Virginia State Building Energy Code, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=VA09R&re=1&ee=1.

buildings to meet the silver LEED standard or an equivalent standard.[363] The silver LEED standard is one level of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system. Executive Order 48 also gives preference for state leases to private buildings that meet the same efficiency standards.

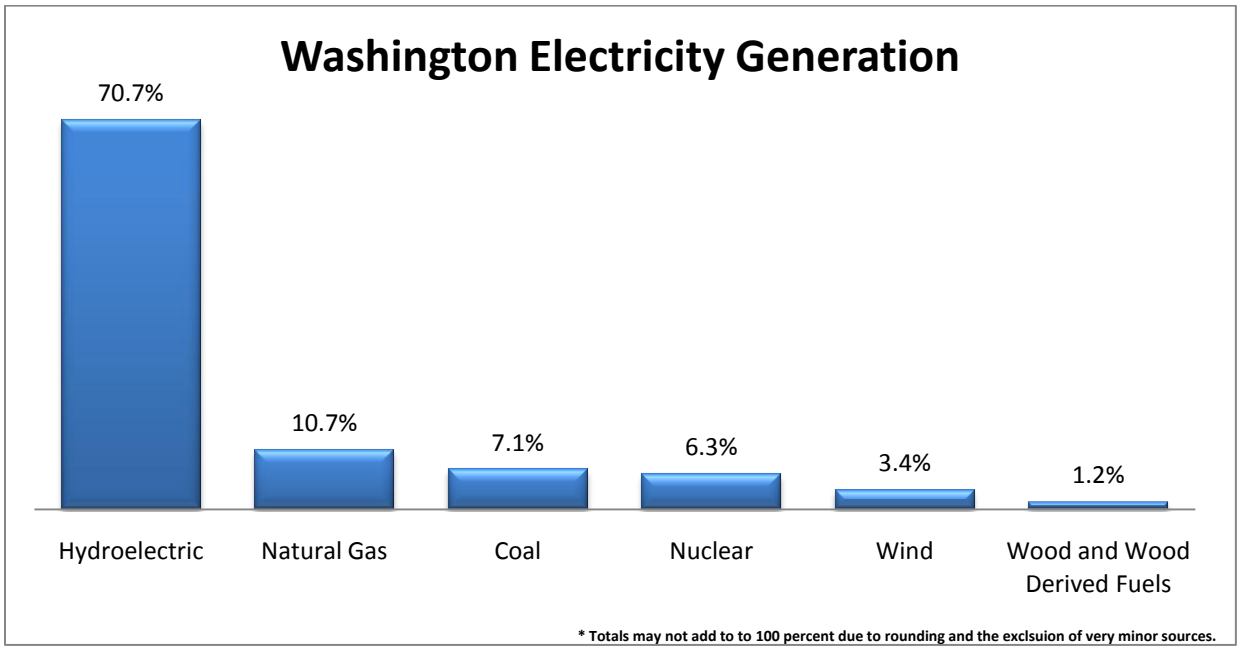
- **Virginia requires** that state agencies purchase energy-efficient appliances. Governor Kaine's Executive Order 48 requires state agencies to purchase Energy Star products whenever they are available.[364]
- **Virginia does not allow** electric utilities to "decouple" revenue from the sale of electricity, but **does allow** natural gas utilities to decouple revenue from the sale of gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[363] Va. Exec. Order No. 48 (2007), http://www.dmme.virginia.gov/DE/StateAgencyProgs/EO48.pdf.
[364] *Id.*

Washington Energy Facts

Washington – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$40,407	12th highest
Unemployment	9.5%	18th highest
Gasoline Price, per gallon	$3.01	4th highest
Electricity Price, per kWh	6.63¢	4th lowest

Washington has some of the most affordable electricity in the country, in large part because hydroelectric power accounts for over two thirds of its electricity production. Washington is the leading hydroelectricity producing state in the nation.



Most of Washington's hydroelectric power is generated from eight of the state's ten largest power plants on the Columbia and Snake Rivers, natural resources that have enabled the state to keep electricity prices among the lowest in the nation. Washington is a major electricity exporter, supplying electricity to several other states, including California. Natural gas, coal, and nuclear combined generate almost 25 percent of the state's electricity. Non-hydroelectric renewables, primarily wind, wood and wood waste, combined contributes almost 5 percent.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Washington's regulatory environment that are likely to affect the cost of energy or the cost of using energy.

- **Washington does not cap** greenhouse gas emissions, but instead established the goal of reducing greenhouse gas emissions to 1990 levels by 2020 and 50 percent below 1990 levels by 2050.[365]
- **Washington is a member** of the Western Climate Initiative (WCI), a regional agreement among some American governors and Canadian premiers to target greenhouse gas reductions. The central component of this agreement is the eventual enactment of a cap-and-trade scheme to reduce greenhouse gas emissions 15 percent below 2005 levels by 2020.
    - **Washington has a de facto ban** on new coal-fired power plants. House Bill 3141, passed in 2004, requires a 20 percent offset in carbon dioxide emissions from new fossil fuel power plants, significantly increasing the cost of generating electricity from coal and natural gas.[366]
- **Washington requires** that utilities generate from renewable sources a certain percentage of the electricity that they sell. The state's renewable portfolio standard mandates that utilities that serve more than 25,000 customers generate 15 percent of electricity from renewables by 2020.[367] Hydroelectric generation projects are eligible if incremental electricity produced as a result of efficiency improvements completed after March 31, 1999, meets certain specifications.

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† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[365] H.B. 6001 (Wash. 2007), http://www.leg.wa.gov/pub/billinfo/2007-08/Pdf/Bills/Senate%20Passed%20Legislature/6001-S.PL.pdf.

[366] H.B. 3141 (Wash. 2003), http://www.leg.wa.gov/pub/billinfo/2003-04/Pdf/Bills/House%20Passed%20Legislature/3141-S.PL.pdf.

[367] WASH. REV. CODE Title 480, Ch. 480-109, http://apps.leg.wa.gov/WAC/default.aspx?cite=480-109.

    - **Washington requires** utilities to meet a portion of electricity demand with energy efficiency. In 2006, voters approved ballot initiative I-937, which requires utilities to implement all cost-effective energy efficiency measures. Specific efficiency targets have not yet been set.[368]
- **Washington requires** gasoline to be mixed with renewable fuels. The Motor Fuel Quality Act, enacted in 2006, mandates that all gasoline sold in the state must contain 2 percent ethanol by 2008.[369] This standard expands to 10 percent if in-state production is sufficient and the increased ethanol use has no adverse effects on ozone levels. Under the same legislation, 2 percent of diesel sold in Washington must be biodiesel by 2008. The biodiesel minimum expands to 5 percent if sufficient in-state production capabilities exist.
- **Washington imposes** automobile fuel economy standards similar to California's, which attempts to regulate greenhouse gas emissions from new vehicles. House Bill 1397, enacted in 2005, adopted California's vehicle emissions standards if Oregon adopted the same standards.[370]
- **Washington requires** new residential and commercial buildings to meet energy efficiency standards. Residential buildings must meet a state building code that exceeds the 2006 International Energy Conservation Code (IECC). The IECC, developed by the International Code Council, is a model code that mandates certain energy efficiency standards. Residential buildings higher than four stories must adhere to a state code that exceeds ASHRAE 90.1-2007.[371] ASHRAE 90.1 is another model code that mandates certain energy efficiency standards and was developed by the American Society of Heating and Refrigeration and Air Conditioning Engineers. Commercial buildings must meet a state code equivalent to ASHRAE 90.1-2004, while the state code exceeds ASHRAE for equipment and lighting standards.[372] In addition, newly built and renovated state buildings over 25,000 square feet, as well as schools, must meet the silver LEED standard, according to Governor Gary Locke's 2005 Executive Order 05-01.[373] The silver LEED standard is one level of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system. A study of new schools that meet this standard shows the new schools are not necessarily more energy-efficient than older schools and are more expensive.[374]
- **Washington imposes** state-based appliance efficiency standards. Though the state's initial standards have been preempted by federal legislation, House Bill 1004, enacted in 2009, implemented new standards for wind chillers, hot water dispensers, mini-tank

[368] Initiative 937 (Wash. 2006), http://www.secstate.wa.gov/elections/initiatives/text/i937.pdf.
[369] WASH. REV. CODE Title 19, Ch. 19.112 (2006), http://apps.leg.wa.gov/RCW/default.aspx?cite=19.112.
[370] Motor Vehicle Emission Standards, H.B. 1397 (Wash. 2005), http://www.leg.wa.gov/pub/billinfo/2005-06/Pdf/Bills/Session%20Law%202005/1397-S.SL.pdf.
[371] Building Codes Assistance Project, Code Status: Washington, http://bcap-energy.org/node/19.
[372] *Id.*
[373] Wash. Exec. Order 05-01 (Jan. 5, 2005), http://www.governor.wa.gov/execorders/eoarchive/eo_05-01.pdf.
[374] Todd Myers, *Green Schools Don't Make the Grade*, National Center for Policy Analysis, Aug. 23, 2008, http://www.ncpa.org/pub/ba/ba622/.

electric water heaters, bottle-type water dispensers, pool heaters, residential pool pumps, portable electric spas, and commercial hot food holding cabinets.[375]

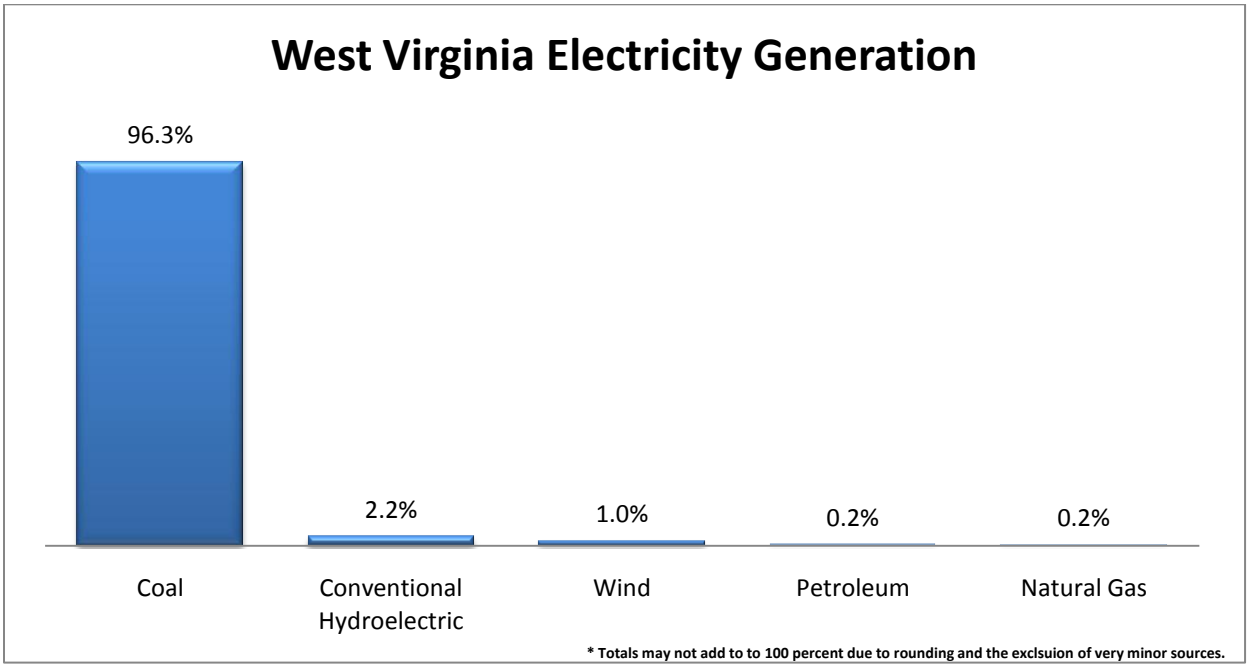
- **Washington does not allow** electric utilities to "decouple" revenue from the sale of electricity, but **does allow** natural gas utilities to decouple revenue from the sale of gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[375] Database of State Incentives for Renewables and Efficiency, Washington Appliance and Equipment Energy Efficiency Standards, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=WA12R&re=1&ee=1.

West Virginia Energy Facts

West Virginia – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$25,533	2nd lowest
Unemployment	9.5%	18th highest
Gasoline Price, per gallon	$2.88	13th highest
Electricity Price, per kWh	6.64¢	5th lowest

West Virginia has some of the most affordable electricity prices in the nation, in large part because over 96 percent of West Virginia's electricity is generated from coal, the most inexpensive source of electricity production.



West Virginia is the nation's largest coal producer east of the Mississippi River and the second-largest overall, leading the nation in coal production from underground mines; it accounts for more than 10 percent of coal production in the United States, delivering coal to more than 25 states on the East Coast and in the Midwest. The state is the second largest net exporter of electricity in the country. Hydroelectric and wind power combine to produce just over 3 percent of the state's generation.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about West Virginia's regulatory environment that are likely to affect the cost of energy or the cost of using energy. West Virginia has thus far avoided many of the costly energy policies other states are implementing.

- **West Virginia does not cap** greenhouse gas emissions.
- **West Virginia is not a member** of a regional agreement to cap greenhouse gas emissions.
- **West Virginia requires** utilities to generate from renewable sources or alternative energy a certain percentage of the electricity that they sell. In July 2009, West Virginia enacted House Bill 103, the "Alternative and Renewable Energy Portfolio Standard."[376] This law requires investor-owned utilities with more than 30,000 residential customers to supply 25 percent of retail electricity sales from alternative and renewable energy by 2025.
- **West Virginia does not require** gasoline to be mixed with renewable fuels.
- **West Virginia does not impose** automobile fuel economy standards similar to California's, which include attempts to regulate greenhouse gas emission from new vehicles.
- **West Virginia does not require** new residential and commercial buildings to meet energy efficiency standards.
- **West Virginia does not impose** state-based appliance efficiency standards.
- **West Virginia does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity or natural gas.

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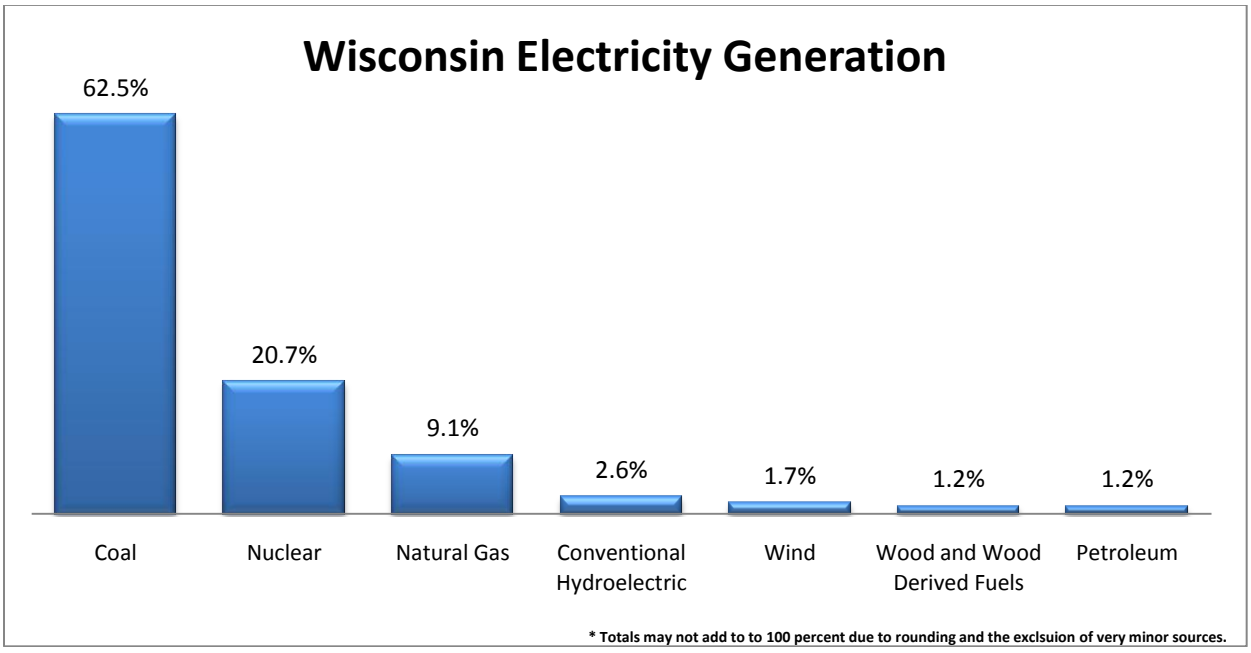
† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[376] H.B. 103 (W. Va. 2009), http://www.legis.state.wv.us/Bill_Status/bills_text.cfm?billdoc=hb103%20ENR.htm&yr=2009&sesstype=1X&i=103.

Wisconsin Energy Facts

Wisconsin – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$35,239	24th lowest
Unemployment	8.7%	22nd lowest
Gasoline Price, per gallon	$2.84	19th highest
Electricity Price, per kWh	9.35¢	20th highest

Wisconsin has below average electricity prices (5 percent below the national average). Over 60 percent of Wisconsin's electricity is generated from coal. The state receives about 20 percent of its electricity from its two nuclear power plants, while natural gas provides about nine percent of the state's electricity generation.



Wisconsin lacks fossil fuel resources. About 80 percent of the coal used in Wisconsin is imported from Wyoming. Natural gas is delivered to Wisconsin through pipelines, primarily from Louisiana, Texas, Oklahoma, and Kansas with the remaining gas coming from Canadian sources. The Unit 1 reactor at the Point Beach nuclear plant is one of the oldest operating nuclear reactors in the United States. Renewable energy resources, primarily hydroelectric power, wind energy, and wood, contribute 6 percent to the state's electricity supply. Wisconsin also produces ethanol in the southern and central portions of the state.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Wisconsin's regulatory environment that are likely to affect the cost of energy or the cost of using energy. Wisconsin has thus far avoided many of the costly energy policies other states are implementing.

- **Wisconsin does not cap** greenhouse gas emissions.
- **Wisconsin is a member** of the Midwestern Greenhouse Gas Reduction Accord, a regional agreement among six American governors and one Canadian premier to target greenhouse gas reductions. The central component of this agreement is the eventual enactment of a cap-and-trade scheme, perhaps supported by low-carbon fuel standards and other supplemental policies. The Wisconsin state legislature would have to approve any cap-and-trade plan put forth by the Midwestern Greenhouse Gas Reduction Accord.
- **Wisconsin requires** that utilities generate from renewable resources a certain percentage of the electricity that they sell. The state's renewable portfolio standard, updated in 2006, mandates that utilities generate 10 percent of electricity sold from renewables by December 31, 2015.[377]
- **Wisconsin does not require** gasoline to be mixed with renewable fuels. However, the state requires the use of reformulated gasoline blended with ethanol in southeastern corner of Wisconsin.[378]
- **Wisconsin does not impose** automobile fuel economy standards similar to California's, which attempts to regulate greenhouse gas emissions from new vehicles.
- **Wisconsin requires** new residential and commercial buildings to meet energy efficiency standards. One-family or two-family residential buildings must adhere to the Uniform

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† Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.

[377] WIS. STAT. Chapter 196 (2007), http://nxt.legis.state.wi.us/nxt/gateway.dll?f=templates&fn=default.htm&vid=WI:Default&d=stats&jd=ch.%20196.

[378] Energy Information Administration, *Wisconsin*, Apr. 8, 2010, http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=WI.

Dwelling Code (UDC), which incorporates the 2006 International Energy Conservation Code (IECC).[379] The IECC, developed by the International Code Council, is a model code that mandates certain energy efficiency standards. Multi-family buildings must meet the 2000 IECC, while commercial buildings must meet the 2006 IECC.[380] Additionally, new, renovated, or retrofitted state-owned and state-funded buildings must meet LEED standards or comparable guidelines.[381] LEED standards are based on the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system.

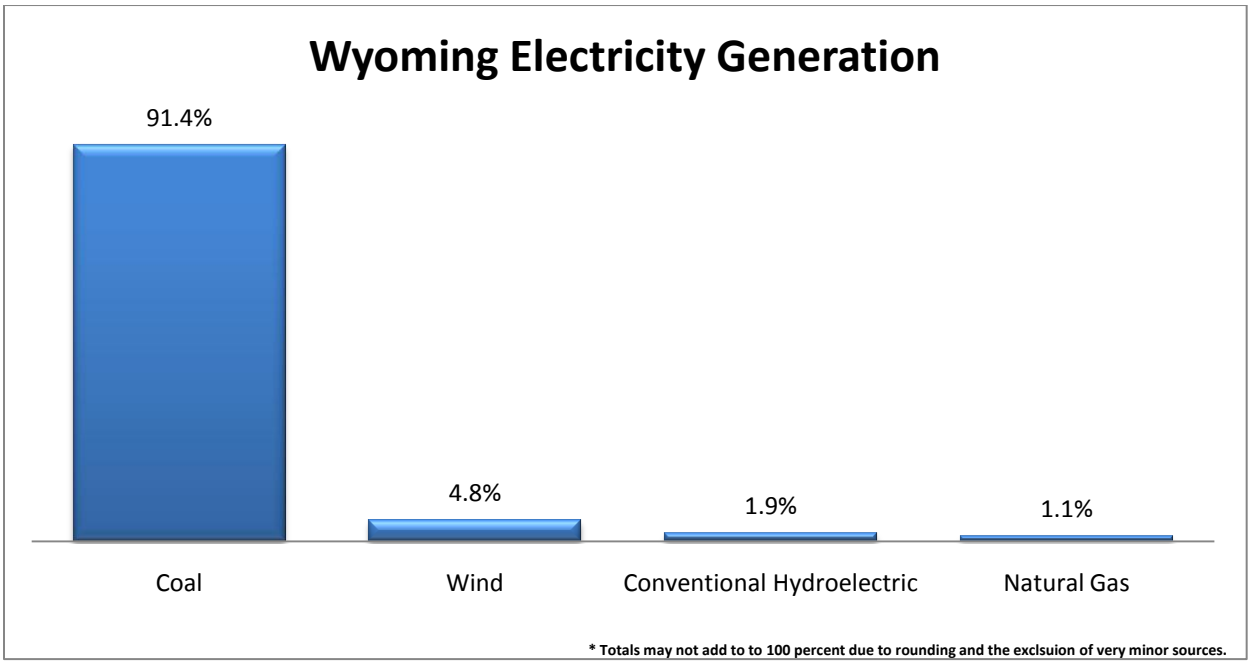
- **Wisconsin does not impose** state-based appliance efficiency standards. However, Senate Bill 459, enacted in 2006, imposes appliance efficiency standards for state buildings.[382] These standards must meet federal Environmental Protection Agency standards, federal energy management standards, or standards developed by the American Society of Heating and Refrigeration and Air Conditioning Engineers.
- **Wisconsin allows** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity or natural gas.

[379] Building Codes Assistance Project, Code Status: Wisconsin, http://bcap-energy.org/node/99.
[380] *Id.*
[381] Wis. Exec. Order No. 145 (Apr. 11, 2006), http://www.wisgov.state.wi.us/journal_media_detail.asp?locid=19&prid=1907.
[382] S.B. 459 (Wis. 2005), http://www.legis.state.wi.us/2005/data/acts/05Act141.pdf.

Wyoming Energy Facts

Wyoming – Select Economic and Energy Data†		State Rank
Real Gross Domestic Product, per capita	$40,837	11th highest
Unemployment	7.5%	15th lowest
Gasoline Price, per gallon	$2.76	23rd lowest
Electricity Price, per kWh	6.08¢	1st lowest

Wyoming benefits greatly from its abundant coal, oil, and natural gas resources. Wyoming has the nation's most affordable electricity prices, in large part because over 90 percent of the electricity generated in Wyoming is from coal. Wyoming's embrace of its incredible energy portfolio has help strengthened its economy, and as a result, Wyoming has low unemployment and a high per capita state gross product.



Wyoming has the top coal-producing region in the Powder River Basin accounting for nearly 40 percent of U.S. coal production, is one of the top natural gas-producing states providing for almost ten percent of the nation's natural gas production, and provides about 3 percent of the United States' domestic oil supply. Wyoming also has extensive untapped coalbed methane and oil shale resources. Its coalbed methane resource accounts for over 20 percent of the state's natural gas production. Over 30 states receive coal from Wyoming, and many states use Wyoming coal exclusively. Renewable resources in Wyoming are mainly wind and hydroelectric power together contributing almost 7 percent of the state's electricity.

Regulatory Impediments to Affordable Energy

Although affordable energy is a vital component of a healthy economy, regulations frequently increase energy costs. Regulations imposed in the name of reducing carbon dioxide and greenhouse gas emissions are especially costly. Carbon dioxide is a natural byproduct of the combustion of all carbon-containing fuels, such as natural gas, petroleum, coal, wood, and other organic materials. Today, there is no cost-effective way to capture the carbon dioxide output of the combustion of these fuels, so any regulations that limit carbon dioxide emissions will either limit the use of natural gas, petroleum, and coal, or dramatically increase their prices.

Below are some facts about Wyoming's regulatory environment that are likely to affect the cost of energy or the cost of using energy. Wyoming has thus far avoided many of the costly energy policies other states are implementing.

- **Wyoming does not cap** greenhouse gas emissions.
- **Wyoming is an observer** of the Western Climate Initiative (WCI), a regional agreement among some American governors and Canadian premiers to target greenhouse gas reductions. The central component of this agreement is the eventual enactment of a cap-and-trade scheme to reduce greenhouse gas emissions 15 percent below 2005 levels by 2020. As an observer of the WCI, Wyoming would not be bound to agreements made by WCI members.
- **Wyoming does not require** utilities to generate from renewable sources a certain percentage of the electricity that they sell.
- **Wyoming does not require** gasoline to be mixed with renewable fuels.
- **Wyoming does not impose** automobile fuel economy standards similar to California's, which attempts to regulate greenhouse gas emissions from new vehicles.
- **Wyoming does not require** new residential and commercial buildings to meet energy efficiency standards.
- **Wyoming does not impose** state-based appliance efficiency standards.
- **Wyoming does not allow** utilities to "decouple" revenue from the sale of electricity and natural gas. Some states decouple revenue from actual sales, allowing utilities to increase their revenue by selling less electricity and natural gas.

[†] Data Sources: Real GDP per capita 2008: Bureau of Economic Analysis, *News Release: GDP by State* (June 2, 2009), http://www.bea.gov/newsreleases/regional/gdp_ state/gsp_newsrelease.htm; Unemployment: Bureau of Labor Statistics, *Regional and State Employment and Unemployment–February 2010* (Mar. 10, 2010); Gasoline Prices: American Automobile Association, *AAA Daily Fuel Gauge Report* (Mar. 30, 2010); Electricity Prices: Energy Information Administration, *Electric Power Monthly*, Table 5.6.B., Average Retail Price of Electricity, (March 15, 2010), http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html; Electricity Generation Data: Energy Information Administration, Electricity Generation 2009, http://www.eia.doe.gov/cneaf/electricity/epa/generation_state_mon.xls.