

Approved: April 12, 2002 Carl Dean Holmes  
Date

MINUTES OF THE HOUSE COMMITTEE ON UTILITIES.

The meeting was called to order by Chairman Carl D. Holmes at 9:12 a.m. on March 22, 2002 in Room 526-S of the Capitol.

All members were present except: Representative Carl Krehbiel

Committee staff present: Robert Chapman, Legislative Research  
Dennis Hodgins, Legislative Research  
Mary Torrence, Revisor of Statutes  
Jo Cook, Administrative Assistant

Conferees appearing before the committee: Representative Tom Sloan  
David Eyerly  
Mark Schreiber, Westar Energy  
Jim Ploger, Kansas Corporation Commission

Others attending: See Attached List

**HB 3017 - Organization of cooperative to generate electricity from renewable resources and technologies and to wholesale such electricity**

Chairman Holmes opened the hearing on **HB 3017**.

Representative Sloan, bill sponsor, testified in favor of **HB 3017** (Attachment 1). Representative Sloan stated the bill contains the language the committee previously agreed to in **HB 2631** with changes agreed to by members of the industry. Representative Sloan distributed a memo regarding a conversation with the Kansas Farmers Service and Kansas Coop Council (Attachment 2) and an e-mail he received from Troy Helming (Attachment 3), both supporting the legislation.

David Eyerly, Kansas City, Missouri, addressed the committee in support of **HB 3017** (Attachment 4). Mr. Eyerly stated he would be honored to be among the first to form a cooperative to build a Kansas wind park.

Mark Schreiber, Senior Manager for Government Affairs for Westar Energy, testified in support of **HB 3017** (Attachment 5). Mr. Schreiber, reading testimony submitted by Doug Lawrence, stated they were increasingly interested in renewable energy opportunities in the state.

Jim Ploger, Manager of the Energy Programs Division of the Kansas Corporation Commission, appeared in support of **HB 3017** (Attachment 6). Mr. Ploger stated Kansas now is ranked number one in the nation in potential wind generating capacity. He also distributed two booklets: "Generating Solutions: How States Are Putting Renewable Energy Into Action" and "Small Wind Electric Systems," copies available from Kansas Legislative Research.

The conferees responded to questions from the committee. Additionally, Tom Day, Legislative Liaison for the Kansas Corporation Commission, responded to questions.

Chairman Holmes closed the hearing on **HB 3017**.

# HOUSE UTILITIES COMMITTEE GUEST LIST

DATE: March 22, 2002

NAME	REPRESENTING
Joe Dick	BPUKCK
DAVID EYERLY	WIND WORKS
<del>Joe Hoffmann</del>	KFC
MARK SCHREIBER	Westar Energy
J.C. Long	AQUILA
Cyrus Smith	KCP&L
Bruce Graham	ICEP Co
Paula Lente	KCC
Steve Johnson	Kansas Gas Service
Greg Krissel	KS Corn Growers
Willie Nichols	SWKIA
Chris Hammer	SWKIA
Thurman Brown	SWKIA
Chale Benjamin	KS Storm Club
Jim Shoya	KCE

TOM SLOAN  
REPRESENTATIVE, 45TH DISTRICT  
DOUGLAS COUNTY

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TOPEKA

HOUSE OF  
REPRESENTATIVES

## Testimony on HB 3017 –Renewable Energy Electricity Generation Cooperatives

HB 3017 creates the means by which persons may form renewable energy electric generation cooperatives for the purpose of selling electricity on the wholesale market. The bill contains the language to which the Committee agreed when we worked HB 2631 and was developed in cooperation with Bruce Graham of KEPCO, and Barry Hart and Jon Miles of KEC. It also includes the two additional amendments adopted by the Committee during our previous deliberations.

A cooperative or cooperative member is specifically prohibited from selling electricity at retail or having a certificated territory; transferring or distributing electricity to any other member of the cooperative; reselling electricity provided to a cooperative member by the “traditional” utility that serves as provider of last resort; or participating in the parallel generation services act (page 2, lines 28-37).

The cooperatives formed by this act must hold the local “traditional” utility financially and operationally harmless in developing the interconnections necessary to move the power to the wholesale market (page 12, lines 41-43; page 13, lines 1-3, lines 10-15).

The original bill contained the eminent domain boiler plate statutory language related to siting transmission lines that all existing electric cooperatives have. Pursuant to Committee action, the power of eminent domain is not made available to renewable energy generation cooperatives.

Several committee members expressed reservations about voting for the bill until they received clear indications that “real” people are interested in forming such cooperatives. In addition to a conferee who will speak this morning, you also have been provided copies of correspondence from other potential cooperative organizers.

I have worked hard to resolve legitimate concerns of the rural electric cooperatives and committee members. I appreciate your reconsideration of this issue and ask for your support.

*HOUSE UTILITIES*

DATE: 3-22-02

ATTACHMENT 1

STATE OF KANSAS

COMMITTEE ASSIGNMENTS  
VICE-CHAIR: UTILITIES  
MEMBER: ENVIRONMENT  
HIGHER EDUCATION  
KANSAS FUTURES

TOM SLOAN  
REPRESENTATIVE, 45TH DISTRICT  
DOUGLAS COUNTY

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TOPEKA  
HOUSE OF  
REPRESENTATIVES

March 21, 2002

Telephone conversation with Terry Bertholf, Attorney for Kansas Farmers Service and Kansas Coop Council (conversation was at the request of Joe Lieber)

"HB 3017 is not a problem for traditional coops and may represent an economic opportunity for partnering."

*HOUSE UTILITIES*

DATE: 3-22-02

ATTACHMENT 2

**From:** "Troy Helming" <troy@kansaswindpower.com>  
**To:** <Sloan@house.state.ks.us>  
**Date:** Wed, Mar 20, 2002 1:24 AM  
**Subject:** Kansas Wind Power COOPs

Tom -

We have had serious inquiries about setting up cooperatives from 12-15 individuals (with firm dollar commitments), plus at least another 50-60 inquiries on our website about hosting wind turbines and setting up local coops, like farm cooperatives. Due to the familiarity of the Helming name (the Helming Report was a farm radio show broadcast all over the Midwest for over 20 years), our company has strong support in rural Kansas. Some of the counties we have received inquiries from, relative to setting up COOPs, are:

Elk  
Butler  
Greenwood  
Anderson  
Crawford  
Geary  
Chautauqua

Many others have not indicated what counties they are from. We have already made significant inroads with a few utility companies who are willing to buy the power from us, but any help we can get from the state legislature will help further our mission of making the state of Kansas one of the World Leaders in wind power production. The industry grew by 40% per year in the last 3 years. Let's not let Kansas get left blowing aimlessly in the wind!

I hope this helps, Tom.

Troy A. Helming, CEO  
KansasWindPower.com

Troy@KansasWindPower.com  
913-541-1145 ~ 888-221-6505 ~ eFax 208-977-0845  
11936 W. 119th St #315 Overland Park, KS 66213

"The 3 states of Kansas, North Dakota and Texas have enough harnessable wind to power the entire country"

To SUBSCRIBE to our Newsletter, send an email to:  
KansasWindPower\_News-subscribe@yahoogroups.com

**CC:** "Jim Beach" <Jim.Beach@AZtechFinancial.com>

*HOUSE UTILITIES*

DATE: 3-22-02

ATTACHMENT 3

Testimony on behalf of Kansas House Bill 3017.

David Eyerly  
5779 Bower Avenue  
Kansas City, MO 64133  
(816) 353-3132  
deyerly@kc.rr.com

The Renewable Energy Electricity Cooperative Act will allow myself, and like-minded individuals the ability to form a Cooperative to build wind parks in Kansas.

Just five years ago, wind parks didn't make economic sense-they cost too much when compared to alternatives for producing electricity. But those days are quickly coming to a close, as dramatic increases in blade design, tower construction, and increases in operating efficiency have brought the development of large wind turbines into direct competition with conventional fuels.

Kansas, like most States, derives a large quantity of its electrical power currently from coal, natural gas, and nuclear energy. These fuels have served a valuable service, and will continue to provide Kansas with electricity for thirty or more years. However, as the State's economy grows, and as its citizens seek a better future-more electricity will be needed. At this point, adding new coal-fired, natural-gas turbine, or nuclear power plants becomes increasingly less inviting.

We are beginning to see a paradigm shift from these "conventional" fuels to renewable fuels. Kansas is well situated to grow from that shift. Our vast plains which have fed this nation for the past one hundred years, will now be able to harvest a new crop which will feed our needs for the next hundred.

But to date, Kansas has lagged behind some of our neighbors. Iowa, Texas, and South Dakota have each entered into a more aggressive approach into developing their wind resources. All of the wind development in this State has been sponsored by out-of-State utilities-such as Florida Power and Light-which is harvesting Kansas wind. The reason is simple-cost. The cost of building a single 1.5 Megawatt wind tower is well over a million dollars. And a wind park would usually include forty to fifty such wind turbines. The payback is favorable. These wind parks make economic sense. Yet the high "cost of entry" into the market makes it unlikely to have any Kansas "home grown" local individuals or entities profit from their development.

House Bill 3017 helps resolve that issue. It allows those of us interested in harnessing Kansas' wind unite as a cooperative to raise the capital necessary to build wind parks.

If the bill is passed, I'd be honored to be among the very first to form a cooperative to do just that-build a Kansas wind park.

*HOUSE UTILITIES*

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ATTACHMENT 4

I understand that the bill provides for other renewable energy cooperatives to exist-biomass, geothermal, solar, and whatever other method the creative minds of this great nation make invent to produce electricity. But for me, and for Kansas, the most obvious competitive project is a wind park.

Please note, we are not asking for you to fund our wind parks. We're not asking for any money with this legislation (although, we'd be welcomed to hear from anyone on this committee who would be interested in funding us.) But what we are asking for is permission-permission that this bill gives-to organize ourselves to produce electrical energy by non-conventional means. You, by passing this legislation, will be giving us (and others) permission to form a cooperative. You'll let us organize ourselves to meet Kansas' future needs, in a clean, responsible, friendly way.

I do not delude myself that this is the most important piece of legislation you'll ever approve. It probably isn't. But this legislation does put Kansas on a path that will assure her future. I can think of no reason that this legislation isn't acceptable. The existing Kansas electrical cooperatives-those that deliver power to most of this State-will retain their ability to do so. They retain the ability to bill their customers. They retain the ability to transport the power. The impact to them is all positive-they get the benefit of cleaner, often less expensive power-to pass on to their customers.

If anyone is negatively impacted by the passage of this bill, it would be large, well financed, east-coast electric power monopolies. Under current law, they can harness Kansas wind, yet-we can't. And they don't even lose. They just gain competitors, which will encourage the large power companies to drive a more efficient enterprise. Everyone wins-and Kansas wins the most.

Please pass this legislation. Please vote in favor of house bill 3017.

David Eyerly  
Private individual.

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**Testimony before the  
House Utilities Committee**

**By  
Doug Lawrence, Vice President, Public Affairs  
Westar Energy  
March 22, 2002**

Chairman Holmes and members of the committee, I am Doug Lawrence, vice president, public affairs for Westar Energy.

House Bill 3017 addresses an important resource — renewable energy. Kansas is said to be the third-best state in the nation for the production of wind power. Therefore, it is fitting that our state would encourage taking advantage of this resource.

Westar Energy increasingly is interested in renewable energy opportunities in Kansas. Our company was the first to introduce commercial wind applications in Kansas, with two wind turbines installed on the grounds of Jeffrey Energy Center in 1999. Last year, our company made a bid to purchase power from the Montezuma wind farm but was outbid by another utility in the state. Opportunities to purchase power from similar projects in Kansas are under consideration. The economics of those projects and the market opportunities play a large role in the viability of such endeavors.

As the state's largest electric utility, Westar Energy is well positioned to play a big role in renewable energy projects. As this committee considers legislation to encourage these types of developments, we encourage you to closely look at a market-based approach.

*HOUSE UTILITIES*

818 South Kansas Avenue / P.O. Box 889 / Topeka, Kan  
Office Telephone: (785) 575-6300

DATE: **3-22-02**  
ATTACHMENT **5**



Utilities in our region are interested in purchasing renewable energy, including wind, generated by Kansas. There are wholesale opportunities to sell this power north, south and east of Kansas. Uncertainty about federal and state incentives tied to so-called “green” energy and the status of transmission systems to deliver that power into those markets makes determining the economics of long-term commitments difficult at best.

Partnerships are better than mandates. Economic incentives that reduce development costs or reduce the effective cost of power to the end user provide mutually beneficial solutions. Westar Energy believes the best way to encourage development of a Kansas resource like wind is to consider regional market opportunities rather than to implement mandatory consumption by native utilities at rates above market opportunities.

Wind energy in this aspect is like other products of the state. Kansans do not consume all of the wheat produced here. Instead we develop delivery systems, market systems to deliver that native product to consumers around the world. Wind-generated electricity can be exported to other utilities that have specific needs and opportunities beyond what exists in our state.

Westar Energy supports H.B. 3017 in concept, because it could create a means of aggregating individuals who are interested in investment and deployment of renewable energy sources. Aggregation of those parties creates a product that is more marketable. If the goal is to develop Kansas wind energy as a product that can be marketed to utilities in our region, it is important to note that regulated utilities in the state have little incentive to make that type of investment. Current regulatory treatment of revenues generated from the sale of electricity to other utilities off-system requires that all benefits accrue to customers through reduced rates. That policy leaves no incentive to take the risks necessary to make large investments in facilities like wind farms in an effort to develop an export market. There should be an opportunity to share the benefits of those sales between the company and our customers.

We recognize that major changes have been made from the legislation originally introduced in this committee. Those changes resolve many concerns.

**Utilities Committee  
Kansas House of Representatives  
Written Testimony of the Kansas Corporation Commission Staff  
March 22, 2002**

**HB 3017**

Thank you. Chairman Holmes and members of the Committee, I am Jim Ploger, Manager of the Kansas Corporation Commission's Energy Programs Division.

I am appearing today in support of House Bill 3017.

Recently, the State of Kansas gained a new *Number 1* ranking. A new study released recently by the U. S. Public Interest Research Group Education Fund found Kansas now ranks first in the nation in potential wind generating capacity. The Union of Concerned Scientists did the number crunching with data from the Department of Energy's National Renewable Energy Laboratory (NREL) – the same groups we've heard quoted the past 10-15 years on potential wind resources.

Rating all the states in four renewable energy categories (*wind, geothermal, landfill gas and clean biomass*) and overall, Kansas now ranks first in wind and in the overall category. Kansas is followed by Texas, North Dakota, South Dakota and Nebraska. The High Plains is most certainly the "middle East" in potential wind power. In fact, the study indicated that four states – Kansas, Nebraska, South and North Dakota – "could" produce enough electricity by wind to supply the whole nation.

I have attached the *Executive Summary*, the *Methodology* and the *State Renewable Energy Potential* chart from the study. Copies of the full study are also available.

As you all are aware, many things have happened recently to put "Kansas wind energy" in the news. Governor Graves dedicated Kansas' first commercial wind farm in Gray County last December -- a 110-megawatt operation built and operated by FPL Energy.

About two weeks ago, on March 9, President Bush signed a two-year extension of the Production Tax Credit (PTC) for electricity generated by renewable sources.

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Robert Bergstrom of FPL Energy told me a few weeks ago the 170 wind generators at the Gray County Wind Farm are currently performing at 130% of the original projections – the results of which they are extremely pleased. Originally FPL had estimated the annual capacity factor of the wind farm at 39.8 percent – which is one of the highest in the country. At 130% performance, this puts the Gray County Wind Farm at nearly 52% of the rated capacity – definitely world class statistics.

This experience, the PTC extension and Kansas' property tax exemption makes Kansas one of the best, if not *THE BEST*, climate -- both economically and resource-wise -- for future wind development.

Mr. Bergstrom indicated FPL Energy, with a 250-megawatt wind farm, estimates they could produce 2.5 cent electricity. No wonder Kansas is on its way to becoming the *wind capital*.

I'm aware of 4 or 5 other wind development projects under serious consideration at this time that could increase Kansas wind production substantially.

HB 3017 could add another potential benefit in this potential economic development mix for Kansas. Not only would it give the electrical generating industry more capacity, but it would give rural Kansas a real economic boost. The bill would allow the establishment of a wind electrical cooperative – if area farmers or citizens so desired.

A study done for the KCC and U.S. Department of Energy about a year ago suggested allowing farmer/landowners to establish a cooperative for this purpose could be beneficial to the rural economy.

I encourage the committee to vote favorably on HB 3017.

Thank you. I would be happy to answer any questions.

**ATTACHMENTS:**

**Executive Summary**, *Generating Solutions: How States Are Putting Renewable Energy Into Action*, U.S. PRIG Education Fund, February 2002

**Appendix B: Methodology**, *Generating Solutions: How States Are Putting Renewable Energy Into Action*, U.S. PRIG Education Fund, February 2002

**Appendix C: State Renewable Energy Potential (by Source)**, *Generating Solutions: How States Are Putting Renewable Energy Into Action*, U.S. PRIG Education Fund, February 2002

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## EXECUTIVE SUMMARY

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Our current reliance on dirty, unreliable sources of energy such as coal, oil and nuclear has left this country with a legacy of asthma attacks, oil spills, radioactive waste and global warming. America deserves a safe, clean, affordable energy future. We can create jobs and secure this energy future by using America's technological know-how to increase production from renewable sources, such as solar and wind. Consumers could save billions in energy costs each year if companies used available technology to make our cars, homes and appliances more energy efficient.

This report examines 21 states and their potential for electricity generation from renewable resources using state-of-the-art technology. We highlight success stories from Washington State to Maine that point to the enormous untapped potential for clean power generation from renewable resources.

Only 2% of our energy comes from clean, renewable sources. However, the potential power output of wind, solar, and geothermal resources in the United States is many times greater than our current total electricity consumption. The wind that blows in just four states--North Dakota, South Dakota, Kansas and Nebraska--is enough to meet the electricity needs of the entire country. The sun's energy that hits the surface of the Earth every minute is greater than the total amount of energy that the world's human population consumes in a year. We still only harness a fraction of that power, but the potential to generate energy from renewable sources is great.

Clean renewable energy has become increasingly more cost competitive. The American Wind Energy Association estimates that the cost of electricity generated from utility-scale wind systems has dropped by more than 80% over the last 20 years. According to the Solar Energy Industries Association, the cost of solar energy has dropped by a similar factor.

Because of the dramatically improved economics of renewable energy, state governments and municipalities across the country are implementing small-scale renewable energy programs. Often the testing ground for new, innovative policies, states have proven that we can increase production of renewable energy while creating jobs and saving consumers money. States will remain critical in increasing renewable energy generation, but to ensure that all Americans can enjoy the benefits of clean, renewable energy, we also need national standards.

In order to encourage increased energy production from renewable sources, we should implement policies at the state and national level that include the following:

- A clean energy standard, known as a renewable portfolio standard (RPS), to increase the amount of electricity generated from renewable sources of energy to 20% of power generation nationally by 2020.

- A public benefits fund to provide funds for energy efficiency programs, investments in promising renewable energy technologies, and low-income assistance programs. A national fund would provide matching funds to the states to help enhance state programs.
- National and state net metering standards that allow consumers who generate their own electricity from renewable technologies (e.g. a small wind turbine, a rooftop solar panel) to reduce their electric bill by getting credit for any power generated.
- A five-year extension of the Production Tax Credit (PTC) to encourage new energy generation from renewable sources, including wind, solar, geothermal energy, and clean biomass—specifically excluding municipal solid waste incinerators. The Production Tax Credit is critical in making renewable energy price-competitive with conventional energy sources, such as oil, coal and nuclear, which are heavily subsidized by the federal government. The extension of the credit will enable the renewable energy industry to develop and improve its technology, drive costs down even further and provide Americans with significantly more clean, emissions-free electricity generation.

## APPENDIX B. METHODOLOGY

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**Renewable Energy Potential.** The report's state by state information on generation potential from renewable sources is based on data compiled by the Union of Concerned Scientists (UCS) from government agencies and laboratories, including the National Renewable Energy Laboratory. UCS used the National Energy Modeling System, maintained by the Energy Information Agency, to determine each state's renewable energy potential by source. For a detailed explanation of the modeling assumptions, see the UCS report *Clean Energy Blueprint*.

**Biomass.** UCS collected its biomass data from the Oak Ridge National Laboratory. The numbers presented for each state's clean biomass potential exclude urban waste, due to concerns about the environmental impact of municipal waste incineration. The data assumes biomass priced at \$50 per dry ton.

**Wind.** UCS collected the data on wind power from the National Renewable Energy Laboratory (NREL), which includes Class 3, 4, 5, and 6 wind areas in its estimates of total wind potential. NREL bases its estimates on assumptions about how much land will be available for wind development and excludes urban areas and environmentally sensitive areas from its calculations. In addition, NREL's wind data only includes wind potential within 20 miles of existing transmission infrastructure. For more information on NREL's methodology, you can visit the U.S. Department on Energy, Energy Efficiency and Renewable Energy Network, State Energy Alternatives website at [http://www.eren.doe.gov/state\\_energy](http://www.eren.doe.gov/state_energy).

**Landfill Gas.** UCS based its landfill gas estimates on data collected by the Environmental Protection Agency's landfill methane outreach program.

**Solar.** This report uses estimates about the potential for solar generation compiled by the U.S. Department of Energy's Energy Efficiency and Renewable Energy Network and collected by the National Renewable Energy Lab in collaboration with the National Conference of State Legislatures. We chose not to include data about each state's total potential generation from solar energy; economic complexities of the solar industry and difficult assumptions about space available now and in the future for solar energy made accurate projections difficult at this time. Instead, this report uses small-scale potential as a snapshot of each state's solar resources.

**Homes Powered by Potential Renewable Energy Generation.** To calculate the number of homes powered by each state's potential generation from renewable resources, we first calculated the average electricity (measured in kilowatt-hours) used by the average home in each state. NREL's solar data includes state-by-state estimates of how many homes a football-field sized flat plate collector system would power. We divided the state's estimated solar generation potential from this collector system by NREL's estimated number of homes powered to obtain for each state how many kilowatt-hours of electricity are needed to power the average home in that state. After obtaining that number (measured in kilowatt-hours per home) for each state, we then divided that into each state's total potential for renewable energy generation (measured in million of kilowatt hours). We multiplied the final number by one million to arrive at the total number of homes that could be powered from renewable energy in each state.

## APPENDIX C. STATE RENEWABLE ENERGY POTENTIAL (BY SOURCE)

ALL NUMBERS ARE IN MILLIONS OF KILOWATT-HOURS (kWh). REFER TO APPENDIX B FOR A DETAILED DESCRIPTION OF THE METHODOLOGY AND SOURCES USED TO COMPILE THIS DATA.

State	Wind Potential	Geothermal Potential	Landfill Gas Potential	Clean Biomass Potential	TOTAL (mill. kWh)
Alabama	0	0	555	24,304	24,858
Arizona	6,902	6,973	531	1,091	15,497
Arkansas	22,257	0	39	19,118	41,415
California	85,892	111,553	8,714	13,034	219,192
Colorado	524,303	18,062	1,476	4,881	548,722
Connecticut	10,005	0	175	737	10,918
Delaware	4,806	0	123	561	5,490
Florida	0	0	1,276	7,423	8,699
Georgia	1,075	0	443	21,945	23,463
Idaho	62,624	9,260	14	10,258	82,156
Illinois	105,907	0	3,023	45,823	154,753
Indiana	0	0	1,274	25,505	26,779
Iowa	879,101	0	398	45,563	925,062
Kansas	1,675,895	0	410	28,484	1,704,789
Kentucky	769	0	680	14,842	16,291
Louisiana	0	0	390	16,338	16,727
Maine	9,351	0	0	3,106	12,457
Maryland	5,640	0	515	2,333	8,489
Massachusetts	34,926	0	513	1,104	36,543
Michigan	73,554	0	1,019	16,341	90,914
Minnesota	991,332	0	313	27,927	1,019,571
Mississippi	0	0	195	25,329	25,524
Missouri	81,333	0	737	27,273	109,342
Montana	1,034,866	0	81	9,884	1,044,830
Nebraska	1,347,555	0	145	30,258	1,377,958
Nevada	23,691	22,912	362	43	47,008
New Hampshire	7,591	0	164	2,784	10,540
New Jersey	15,327	0	1,374	482	17,182
New Mexico	297,012	7,012	114	1,222	305,361
New York	100,158	0	2,845	9,657	112,660
North Carolina	5,946	0	982	14,658	21,585
North Dakota	1,571,387	0	0	29,250	1,600,637
Ohio	5,929	0	1,763	25,120	32,812
Oklahoma	1,091,020	0	411	17,893	1,109,325
Oregon	50,697	22,483	383	14,501	88,063
Pennsylvania	67,894	0	1,748	9,969	79,611
Rhode Island	833	0	287	100	1,220
South Carolina	667	0	254	10,769	11,690
South Dakota	1,246,858	0	0	22,560	1,269,417
Tennessee	2,442	0	663	20,546	23,651

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<b>State</b>	<b>Wind Potential</b>	<b>Geothermal Potential</b>	<b>Landfill Gas Potential</b>	<b>Clean Biomass Potential</b>	<b>TOTAL</b>
Texas	1,663,389	0	2,431	27,146	1,692,966
Utah	23,901	10,557	265	721	35,444
Vermont	8,183	0	16	1,428	9,626
Virginia	13,366	0	1,098	11,669	26,132
Washington	50,569	2,858	807	14,222	68,456
West Virginia	9,764	0	0	5,323	15,087
Wisconsin	90,372	0	779	20,599	111,750
Wyoming	930,130	0	0	1,719	931,849