Clean Energy Momentum: Ranking State Progress

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Technical Document

Union of Concerned Scientists

Clean Energy Momentum: Ranking State Progress presents the results of an assessment of state leadership in the nation's historic transformation to a clean electricity future. As the 12 measures of progress, current status, and likely future actions included in the UCS Clean Energy Momentum State Ranking show, leading states help make clean energy happen, create clean energy jobs, and improve public health. The states can be a consistent, powerful, positive force, embracing all that clean energy has to offer, from promoting renewable energy sources, to supporting energy efficiency for homes and businesses, to cutting transportation pollution with electric vehicles.

This document explains the rating approach used in the assessment and provides details on each metric. The tables below the description of the metrics give the raw scores on which the metric points were calculated (Tables 1a and 1b) and the complete metric data table, with the points for each metric and overall score (Table 2), by state. References are included in the full report, except as noted in footnotes.

Ratings

This analysis assesses states based on 12 metrics scaled from zero to 10. For each metric, the top-performing state receives a score of 10, the bottom one a zero, and other states' scores for that metric are prorated based on their performances relative to the top and bottom states. A state's overall score is the total of its metric scores. The highest possible score is 120.

Metrics

This analysis uses metrics aimed at assessing a range of aspects of each state's role in building momentum for clean energy, including renewable energy, energy efficiency, and vehicle electrification. The metrics assess technical progress (Metric 1 through 6), direct effects (Metrics 7 and 8), and policy environments (Metrics 9 through 12).

METRIC 1. RENEWABLE ENERGY GENERATION (2015)

This metric measures the portion of a state's electricity generation that is based on renewable energy (wind, solar, geothermal, hydroelectric, and bioenergy).

Source: EIA 2016a

Data: Net generation from electricity power plants, annual, by state and fuel type, 2015

Analysis: For each state, we calculated the percent of electricity generation from renewable energy sources in 2015 by dividing the megawatt-hours (MWh) generated using renewable energy by the total MWh generated using all fuels.

Scale setting: South Dakota received a 10 based on having 76 percent of in-state generation come from renewable energy.[1] Delaware received a zero, with less than 2 percent renewable energy. Overall, 13 percent of the electricity generated in the United States in 2015 came from renewable energy.

METRIC 2. RENEWABLE ENERGY GENERATION INCREASE (2011–2015)

[1] As explained in the report, Vermont has the highest portion of in-state generation from renewable energy, at around 99 percent, but its standing, in both this metric and the following, owe much to the retirement of the state's sole nuclear plant at the end of 2014. With that retirement, the state now imports more than 60 percent of its electricity (EIA n.d.). Rather than skew the assessment based on this outlier, our analysis uses 2014 data for Vermont in place of 2015 in Metrics 1 and 2.

This metric measures the increase in the portion of a state's electricity generation that is based on renewable energy between 2011 and 2015.

Source: EIA 2016a

Data: Net generation from electricity power plants, annual, by state and fuel type, 2011 and 2015

Analysis: For each state, we calculated the percent of electricity generation from renewable energy in 2011 and 2015 by dividing the MWh generated using renewable by the total MWh generated using all fuels. We then subtracted the 2011 percentage value from the 2015 value to arrive at the change in percent.

Scale setting: Kansas received a 10 based on a 16 percentage point increase in in-state generation coming from renewable energy.[2] Several states received a zero based on a zero percentage point increase or less.[3]

METRIC 3. NEW RENEWABLE ENERGY CAPACITY (2016–2019)

This metric assesses the portion of new power plant capacity coming online between 2016 and 2019 that is powered by renewable energy. It has two submetrics, one based on the renewable energy portion of new capacity and the other based on the new renewable energy capacity per capita.

Sources: SNL Financial 2017 (capacity); Census Bureau[4] (population)

Data: Asset data for power plant units scheduled to be in service between 2016 and 2019, with a build phase development status of "Completed," "Construction Begun," or "Advanced Development;" asset data for power plant units undergoing fuel conversion from coal to natural gas between 2016 and 2019; population estimates for 2015.

Analysis: For each state, we calculated the generating capacity of renewable energy facilities being built and expected to be in service between 2016 and 2019. We also calculated the additional generating capacity resulting from power plant unit conversions from coal to natural gas during the same period. We then divided the first number by the total new generating capacity and coal-to-gas conversions between 2016 and 2019 to produce the renewable energy share of new generating capacity.

For each state, we also calculated the renewable energy capacity per capita, dividing the above-calculated new renewable energy capacity by the state's population.

Scale setting: The score for this metric was based on an average of the score for each of the two submetrics.[5] For the first submetric, several states had only renewable energy facilities set to be completed during the time frame; those states received a 10. Several other states received a zero based on having no or essentially no renewable energy underway. For the second submetric, Wyoming received a 10, based on more than 1,600 watts of renewable energy per capita underway;

[2] See also Note 1.
[3] For this and other multiyear comparative metrics, any state with a value of less than zero (in this case, indicating a *decrease* in the renewable energy portion of a state's generation from 2011 to 2015) received a zero, and zero was judged to be the lower end for scale setting.
[4] Census Bureau. 2016. Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2016. Online at *https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2016_PEPANNRES&src=pt*, accessed March 17, 2017.
[5] Because scores on metrics involving submetrics involve averaging multiple components, the top score for the metric as a whole may be less than 10.

several states received a zero. Overall, 36 percent of the generating capacity being built in the United States during this timeframe is expected to be fueled by renewable energy.

METRIC 4. RESIDENTIAL SOLAR ELECTRIC (2016)

This metric is based on each state's residential solar photovoltaic (PV) capacity per household.

Sources: EIA 2017 (solar capacity); Census Bureau n.d. (households)

Data: Estimated distributed solar photovoltaic capacity by state, September 2016; occupied housing units per state (2010–2014 American Community Survey 5-year estimates)

Analysis: For each state, we divided the residential PV capacity by the number of households. Georgia was listed as "NM" for "not meaningful" residential solar capacity.

Scale setting: Hawaii received a 10 based on having 960 watts per household; several states received a zero based on having under 10 watts per household.

METRIC 5. ENERGY SAVINGS (2015)

This metric draws on a 50-state assessment of electricity program savings from utility programs, part of a scorecard conducted annually by the American Council for an Energy-Efficient Economy (ACEEE).

Source(s): Berg et al. 2016

Data: "% of 2015 retail sales" from Table 9 (2015 net incremental electricity savings by state)

Analysis: For each state, we used the percentage savings data (energy savings as a percentage of a state's overall electricity sales) provided in Berg et al. that served as the basis for the score used in the ACEEE scorecard.

Scale setting: Rhode Island received a 10 based on its energy savings of 2.9 percent; Alaska, Kansas, and North Dakota received a zero based on savings of 0.01 percent or less.

METRIC 6. ELECTRIC VEHICLE ADOPTION (2016)

This metric examines sales of electric vehicles (EVs) as a percentage of new car sales.

Source: IHS Markit 2017

Data: New vehicle registration data, January to December 2016

Analysis: We adjusted the data to a zero-to-10 scale, as described in the Ratings section above.

Scale setting: California received a 10 based on EV sales of 3.5 percent of new car sales. Oklahoma received a zero based on a figure of less than 0.1 percent.

METRIC 7. CLEAN ENERGY JOBS

This metric assesses each state's number of jobs in three clean energy sectors for which 50-state data were available: energy efficiency, solar, and wind.

Sources: E2 and E4TheFuture 2016 (energy efficiency), Solar Foundation 2017 (solar), and Hensley 2017 (wind); Census Bureau n.d.[6] (population)

Data: State job figures for each sector; population estimates for 2015

Analysis: For each state, we divided the employment data for each sector by population.

Scale setting: The score for this metric was based on an average of the score for each of the three submetrics. For energy efficiency, Vermont received a 10 based on having 13.7 jobs per thousand residents; Idaho received a zero based on a figure of 1.6. For solar, Nevada received a 10 based on having more than 2.9 jobs per thousand residents; Alaska and Arkansas received a zero based on a figure of less than 0.1. For wind, North Dakota received a 10 based on 3.8 jobs per thousand residents; several states received a zero based on a figure of less than 0.01.

METRIC 8. POWER PLANT POLLUTION REDUCTION

This metric examined power plant emissions of sulfur dioxide (SO_2), nitrogen oxides (NO_x), and carbon dioxide (CO_2), both recent changes in emissions and remaining emissions per capita for each pollutant.

Sources: EIA 2016b (emissions); Census Bureau n.d.[7] (population)

Data: U.S. electric power industry estimated SO_2, NO_x, and CO_2 emissions by state; population estimates for 2015

Analysis: For each state, we subtracted 2015 data for each pollutant from the 2011 data and divided the result by the 2011 data to arrive at the percentage reduction. We also divided the 2015 emissions data for each pollutant by population.

Scale setting: The score for this metric was based on an average of the score for each of the six submetrics. For SO_2 reduction, Delaware and New Hampshire received scores of 10 based on 91 percent reductions. For NO_x reduction, South Dakota received a 10 based on a 68 percent reduction. For CO_2 reduction, Vermont received a 10 based on a 54 percent reduction. For each pollutant, the zero was defined by several states for which emissions increased. For SO_2 per capita, California and several other states received a 10 based on emissions below 1.0 pounds. For NO_x per capita, Rhode Island and Vermont received a 10 based on emissions of less than 2.5 pounds. For CO_2 per capita, Vermont received a 10 based on emissions of 39 pounds. For each of the per-capita submetrics, Wyoming received a zero, based on SO_2, NO_x, and CO_2 emissions of 150, 169, and 178,000 pounds, respectively.

Overall, emissions for SO_2, NO_x, and CO_2 declined from 2011 to 2015 by 47, 24, and 11 percent, respectively.

METRIC 9. RENEWABLE ELECTRICITY STANDARD INCREASE

This metric assesses the strength of renewable electricity standards (RESs).

Sources: UCS analysis, based on Cole et al. 2016, Barbose,[8] and DSIRE[9]

[6] See Note 4.
[7] See Note 4.
[8] Barbose, G. 2016. RPS demand projections, U.S. Renewables Portfolio Standards Annual Status Report. Lawrence Berkeley National Laboratory. Online at *https://emp.lbl.gov/projects/renewables-portfolio*, accessed April 14, 2017.
[9] Database of State Incentives for Renewables & Efficiency (DSIRE). 2017. Clean energy standard. Online at *http://programs.dsireusa.org/system/program/detail/5883*, accessed April 14, 2017; and Database of State Incentives for

Data: Percentage projections included in the National Renewable Energy Laboratory's Regional Energy Deployment Systems (ReEDS) model described in Cole et al., with updated information from Barbose (supplemented with unpublished overall demand projections, also from Lawrence Berkeley National Laboratory) and DSIRE

Analysis: For each state, we subtracted the 2017 RES target from the 2030 target.

Scale setting: New York received a 10 based on a required increase of 24 percentage points. Many states received zeroes based on having RESs that did not increase post-2017 or on not having an RES.

METRIC 10. CORPORATE RENEWABLE ENERGY PROCUREMENT

This metric is based on an assessment by research and advisory firm Clean Edge of which states do the most to help companies acquire renewable energy.

Source: Rector et al. 2017

Data: Clean Edge score

Analysis: We adjusted the Clean Edge scores to a zero-to-10 scale, as described in the Ratings section above.

Scale setting: Iowa received a 10 based on a Clean Edge score of 74.73. Alabama received a zero based on a score of 1.82.

METRIC 11. ENERGY EFFICIENCY RESOURCE STANDARD

This metric, like Metric 5, draws on ACEEE's 50-state assessment of energy efficiency, in this case each state's energy efficiency resource standard (EERS).

Source: Berg et al. 2016

Data: "Approx. annual electric savings target (2014–2020)" from Table 18 (State scores for energy efficiency resource standards)

Analysis: For each state, we used the average electricity savings projected by ACEEE under each state's EERS that served as the basis for the score used in the ACEEE scorecard.

Scale setting: Massachusetts received a 10 based on projected savings of 2.9 percent per year. Many states received a zero based on having no EERS.

METRIC 12. GLOBAL WARMING EMISSIONS REDUCTION TARGET

This metric measures the strength of a state's target for reducing global warming emissions for 2030 versus its 2005 emissions.[10]

Renewables & Efficiency (DSIRE). 2015. Renewable portfolio standard. Online at *http://programs.dsireusa.org/system/program/detail/606*, accessed April 14, 2017.

[10] As explained in the report, this metric considers only requirements enacted by legislatures (statutory requirements), except for New York, where executive orders set the requirement. In several other states, recent inaction indicates little intent to be guided by executive orders issued during prior administrations.

Source: UCS analysis, based on C2ES 2016, Maryland,[11] New York State,[12] and Rhode Island[13]

Data: Greenhouse gas emissions targets by state

Analysis: For each state, we calculated the target 2030 emissions tonnage figure based on the requirement. For states with requirements ending before 2030, we used the last pre-2030 reduction requirement. For states with post-2030 requirements but without specific 2030 requirements, we interpolated between the dates closest to 2030 (pre- and post-). We then compared each 2030 figure with the 2005 emissions for that state to identify the expected percent reduction.

Scale setting: Vermont received a 10 based on a required reduction of more than 60 percent. States without statutory or recent requirements received a zero.

[11] Maryland (State). Legislature. 2016. Greenhouse Gas Emissions Reduction Act. 11 MD.S.A § 0323. Online at *http://mgaleg.maryland.gov/webmga/frmMain.aspx?id=SB0323&stab=01&pid=billpage&tab=subject3&ys=2016RS*, accessed March 17, 2017.
[12] New York State. 2015. Governor Cuomo, Joined By Vice President Gore, Announces New Actions to Reduce Greenhouse Gas Emissions and Lead Nation on Climate Change. Newsroom, October 8. Online at *https://www.governor.ny.gov/news/governor-cuomo-joined-vice-president-gore-announces-new-actions-reduce-greenhouse-gas-emissions*, accessed April 14, 2017.
[13] Rhode Island (State). House. 2014. Resilient Rhode Island Act. 6.2 RI.S.A § 7904 Sub A. Online at *http://webserver.rilin.state.ri.us/BillText14/HouseText14/H7904A.pdf*, accessed March 17, 2017.

Table 1a. Data for Calculations, Metric 1–7

Notes: Yellow shading in this and subsequent tables indicates the top 10 performers in each category; wind jobs are not included in Metric 7 because the information is proprietary.

State	1	2	3		4	5	6	7			
			3a	3b				7a	7b	7c	7d
	Renewable Energy Percentage of In-State Generation, 2015	Increase in In-State Renewable Energy Generation Portion (percentage points), 2011–2015	Renewable Energy Portion of New Capacity, 2016–2019	New Renewable Energy Capacity (Watts per Capita), 2016–2019	Residential Solar Electric Capacity (Watts per Household), 2016	Energy Savings as Portion of Retail Electric Sales (2015)	Electric Vehicle Portion of Total Vehicle Sales (2016)	Efficiency Jobs, 2015	Efficiency Jobs (per Thousand Residents), 2015	Solar Jobs, 2016	Solar Jobs (per Thousand Residents), 2016
AK	28.4%	8.6	24%	18	0	0.01%	0.3%	8,194	11.1	64	0.1
AL	8.6%	1.1	26%	36	1	0.09%	0.2%	19,058	3.9	530	0.1
AR	9.0%	1.5	100%	4	4	0.61%	0.1%	10,562	3.5	271	0.1
AZ	9.4%	0.5	89%	249	366	1.19%	0.6%	39,490	5.8	7,310	1.1
CA	30.1%	(4.7)	80%	116	392	1.95%	3.5%	321,177	8.2	100,050	2.6
CO	18.0%	3.5	72%	184	140	0.90%	1.0%	40,335	7.4	6,004	1.1
CT	3.0%	(0.7)	3%	11	181	1.48%	0.8%	12,460	3.5	2,174	0.6
DE	1.7%	(0.7)	0%	0	231	0.19%	0.6%	2,334	2.5	363	0.4
FL	2.3%	0.1	9%	25	20	0.11%	0.5%	106,491	5.3	8,260	0.4
GA	6.1%	1.4	42%	78	NM	0.23%	0.5%	66,212	6.5	3,924	0.4
HI	13.2%	4.2	100%	149	960	1.52%	1.4%	8,382	5.9	3,194	2.2
IA	33.7%	12.8	50%	306	30	1.00%	0.2%	19,332	6.2	563	0.2
ID	74.7%	(17.6)	99%	235	11	0.69%	0.3%	2,692	1.6	611	0.4
IL	5.9%	2.4	40%	74	5	1.13%	0.4%	89,830	7.0	3,718	0.3
IN	5.3%	2.0	7%	26	4	0.76%	0.3%	36,668	5.5	2,700	0.4
KS	24.3%	16.0	82%	531	6	0.00%	0.4%	24,088	8.3	467	0.2
KY	4.6%	1.1	18%	64	6	0.36%	0.2%	27,278	6.2	1,202	0.3
LA	3.4%	0.1	0%	0	69	0.08%	0.1%	24,771	5.3	2,922	0.6
MA	8.3%	2.1	17%	27	358	2.74%	0.8%	82,848	12.2	14,582	2.1
MD	7.4%	(0.7)	3%	24	239	1.01%	0.6%	46,724	7.8	5,429	0.9
ME	66.5%	13.5	100%	265	38	1.53%	0.4%	8,843	6.7	572	0.4
MI	7.8%	3.8	15%	23	8	1.16%	0.8%	47,870	4.8	4,118	0.4
MN	21.8%	4.6	53%	111	12	1.15%	0.4%	47,362	8.6	2,872	0.5
MO	3.3%	0.8	100%	85	45	0.61%	0.3%	38,146	6.3	2,380	0.4
MS	2.3%	(0.6)	20%	37	3	0.29%	0.1%	8,455	2.8	883	0.3
MT	40.5%	(5.5)	100%	283	18	0.66%	0.1%	6,101	5.9	168	0.2
NC	6.8%	1.5	53%	287	27	0.62%	0.4%	47,829	4.8	7,112	0.7
ND	23.2%	0.8	80%	1,052	1	0.01%	0.1%	6,299	8.3	175	0.2
NE	12.4%	4.8	82%	284	2	0.53%	0.2%	12,735	6.7	1,585	0.8
NH	16.6%	3.1	100%	23	86	0.59%	0.5%	6,833	5.1	1,184	0.9
NJ	2.2%	0.6	7%	11	380	0.55%	0.7%	38,378	4.3	6,056	0.7
NM	8.7%	2.3	62%	533	118	0.56%	0.3%	13,554	6.5	2,929	1.4
NV	18.9%	4.4	100%	454	205	0.72%	0.7%	15,364	5.3	8,371	2.9
NY	23.3%	(0.6)	20%	13	95	1.05%	0.6%	69,704	3.5	8,135	0.4
OH	2.1%	1.1	18%	60	17	0.92%	0.3%	78,202	6.7	5,831	0.5
OK	22.4%	12.4	41%	363	2	0.32%	0.0%	36,164	9.3	814	0.2
OR	67.7%	(12.3)	27%	40	56	1.09%	1.9%	26,755	6.6	4,509	1.1
PA	3.9%	0.7	1%	4	42	0.64%	0.4%	53,175	4.2	3,061	0.2
RI	3.4%	1.9	100%	50	36	2.91%	0.6%	8,112	7.7	1,176	1.1
SC	5.0%	1.5	2%	3	17	0.54%	0.2%	19,116	3.9	2,772	0.6
SD	76.3%	(1.0)	100%	1	2	0.24%	0.1%	5,464	6.4	478	0.6
TN	14.2%	1.2	0%	0	16	0.19%	0.4%	27,529	4.2	3,548	0.5
TX	10.5%	3.0	43%	234	25	0.18%	0.3%	72,783	2.7	9,396	0.3
UT	4.6%	(0.7)	95%	249	108	0.85%	0.8%	23,396	7.8	4,408	1.5
VA	6.3%	1.2	8%	45	10	0.06%	0.5%	61,397	7.3	3,236	0.4
VT	27.9%	0.5	100%	156	237	2.01%	1.2%	8,585	13.7	1,767	2.8
WA	75.5%	(11.1)	99%	71	27	1.42%	1.8%	38,836	5.4	3,681	0.5
WI	8.3%	0.5	100%	20	11	0.79%	0.7%	17,553	3.0	2,813	0.5
WV	3.8%	0.6	11%	46	6	0.19%	0.1%	20,506	11.1	381	0.2
WY	9.4%	(2.8)	100%	1,636	10	0.09%	0.2%	7,137	12.2	152	0.3

Table 1b. Data for Calculations, Metric 8–12

State	8						9	10	11	12
	8a	8b	8c	8d	8e	8f				
	SO2 Reduction, 2011–2015	NOx Reduction, 2011–2015	CO2 Reduction, 2011–2015	SO2 Emissions (pounds per capita), 2015	NOx Emissions (pounds per capita), 2015	CO2 Emissions (pounds per capita), 2015	Renewable Electricity Standard Increase (percentage points), 2017–2030	Clean Edge Score for Corporate Renewable Energy Procurement, 2016	Approximate Annual Electricity Savings Target, 2014–2020	2030 Carbon Reduction Goal vs. 2005
AK	-38%	-11%	15%	11.3	57.4	10,964	0.0	15.56	0.0%	0%
AL	40%	21%	16%	53.0	23.2	29,208	0.0	1.82	0.0%	0%
AR	33%	31%	20%	39.9	21.2	21,120	0.0	20.43	0.9%	0%
AZ	46%	18%	6%	5.2	13.9	16,200	4.6	24.33	2.5%	0%
CA	55%	11%	-16%	0.1	4.1	3,130	22.2	65.24	1.2%	44%
CO	49%	32%	5%	8.8	14.1	15,106	7.4	39.01	1.3%	0%
CT	-49%	-12%	-10%	0.8	4.2	5,554	4.2	56.49	1.5%	38%
DE	91%	48%	-4%	1.7	5.1	9,533	10.0	54.93	0.0%	0%
FL	32%	8%	2%	8.3	8.3	12,156	0.0	15.78	0.0%	0%
GA	72%	36%	17%	14.4	10.4	12,785	0.0	27.24	0.0%	0%
HI	-16%	13%	9%	30.3	26.9	11,355	19.0	37.01	1.4%	0%
IA	57%	31%	20%	30.7	21.6	24,694	0.0	74.73	1.2%	0%
ID	11%	-330%	-126%	5.6	16.6	2,483	0.0	13.60	0.0%	0%
IL	33%	43%	16%	23.8	7.2	14,441	13.5	68.79	0.7%	0%
IN	55%	19%	19%	52.1	32.4	29,624	0.0	35.30	0.0%	0%
KS	65%	54%	22%	9.6	14.2	20,694	0.0	40.09	0.0%	0%
KY	46%	28%	18%	60.8	30.7	38,001	0.0	15.71	0.0%	0%
LA	41%	9%	10%	32.7	33.2	26,528	0.0	29.93	0.0%	0%
MA	79%	19%	18%	1.5	3.7	4,352	11.5	60.64	2.9%	44%
MD	36%	43%	22%	11.4	5.3	6,721	7.5	56.04	2.0%	45%
ME	13%	-2%	32%	17.7	13.5	4,891	0.0	52.95	2.4%	0%
MI	42%	25%	3%	30.3	13.6	14,889	0.0	35.06	1.0%	0%
MN	48%	33%	7%	10.9	11.1	12,162	6.4	33.42	1.5%	40%
MO	40%	27%	16%	41.4	16.0	24,619	6.9	31.56	0.0%	0%
MS	32%	44%	-8%	24.4	10.8	18,524	0.0	29.56	0.0%	0%
MT	26%	-8%	-7%	28.2	40.1	38,658	0.0	27.42	0.0%	0%
NC	43%	-2%	14%	11.4	11.2	11,800	1.9	34.81	0.4%	0%
ND	50%	13%	-5%	124.7	121.5	90,826	0.0	19.95	0.0%	0%
NE	13%	43%	7%	68.5	27.1	29,421	0.0	26.51	0.0%	0%
NH	91%	44%	29%	3.4	4.8	6,043	5.4	53.31	1.0%	0%
NJ	33%	11%	-15%	0.8	2.9	4,783	6.4	66.65	0.0%	37%
NM	35%	26%	20%	11.2	44.9	26,279	2.7	37.39	0.6%	0%
NV	-1%	18%	0%	3.7	7.5	11,254	4.2	49.99	0.4%	0%
NY	58%	17%	12%	2.4	3.9	3,646	23.7	60.13	0.7%	41%
OH	65%	37%	25%	40.6	14.4	15,871	8.2	59.66	0.6%	0%
OK	32%	62%	19%	34.3	16.5	23,437	0.0	46.18	0.0%	0%
OR	35%	-61%	-34%	4.8	8.2	4,912	15.8	50.98	1.3%	48%
PA	36%	30%	23%	34.5	17.8	15,646	1.5	51.53	0.8%	0%
RI	-39%	64%	20%	0.2	2.0	5,989	19.3	57.28	2.6%	45%
SC	70%	42%	23%	11.7	7.9	13,416	0.0	27.34	0.0%	0%
SD	57%	68%	33%	11.2	7.6	4,978	0.0	21.91	0.0%	0%
TN	43%	28%	16%	26.2	7.0	12,669	0.0	19.74	0.0%	0%
TX	39%	20%	9%	19.8	13.8	19,521	0.0	63.50	0.1%	0%
UT	31%	18%	1%	11.5	34.9	24,782	0.0	37.60	0.0%	0%
VA	65%	21%	-7%	8.0	9.1	9,175	0.0	44.98	0.0%	0%
VT	29%	7%	54%	0.2	2.2	39	15.7	48.55	2.1%	61%
WA	36%	5%	-41%	3.5	4.3	3,560	4.8	36.43	1.5%	24%
WI	58%	27%	2%	20.7	12.8	17,238	0.0	21.94	0.8%	0%
WV	38%	-3%	8%	72.7	67.8	79,190	0.0	36.43	0.0%	0%
WY	48%	27%	-5%	150.4	169.2	178,067	0.0	13.60	0.0%	0%

Table 2. Complete Metric Data

State	Rank	Overall	1	2	3	4	5	6	7	8	9	10	11	12
CA	1	69.4	3.8	0.0	4.4	4.1	6.7	10.0	4.8	6.2	9.4	8.7	4.1	7.2
VT	2	66.6	3.5	0.3	5.5	2.5	6.9	3.3	7.0	7.4	6.6	6.4	7.2	10.0
MA	3	61.4	0.9	1.3	1.0	3.7	9.4	2.1	5.4	7.4	4.9	8.1	10.0	7.2
RI	4	60.5	0.2	1.2	5.2	0.4	10.0	1.5	2.9	7.1	8.1	7.6	9.0	7.3
HI	5	55.1	1.6	2.6	5.5	10.0	5.2	3.9	3.8	4.9	8.0	4.8	4.8	0.0
OR	6	54.4	8.9	0.0	1.5	0.6	3.7	5.3	3.1	5.5	6.7	6.7	4.5	7.9
ME	7	53.5	8.7	8.4	5.8	0.4	5.3	1.2	2.5	5.9	0.0	7.0	8.3	0.0
WA	8	48.5	9.9	0.0	5.2	0.3	4.9	5.0	1.7	5.7	2.0	4.7	5.2	3.9
NY	9	45.0	2.9	0.0	1.1	1.0	3.6	1.5	1.0	6.8	10.0	8.0	2.4	6.7
IA	10	43.9	4.3	8.0	3.5	0.3	3.4	0.5	3.1	6.7	0.0	10.0	4.1	0.0
MD	11	43.4	0.8	0.0	0.2	2.5	3.5	1.7	2.7	7.2	3.2	7.4	6.9	7.3
MN	12	42.0	2.7	2.9	3.0	0.1	4.0	1.1	2.9	6.6	2.7	4.3	5.2	6.5
CO	13	38.9	2.2	2.2	4.2	1.5	3.1	2.7	3.8	6.5	3.1	5.1	4.5	0.0
AZ	14	38.3	1.0	0.3	5.2	3.8	4.1	1.6	2.4	6.2	2.0	3.1	8.6	0.0
NV	15	37.3	2.3	2.7	6.4	2.1	2.5	1.8	4.4	5.3	1.8	6.6	1.4	0.0
NH	16	36.8	2.0	2.0	5.1	0.9	2.0	1.3	2.2	8.5	2.3	7.1	3.4	0.0
CT	17	36.3	0.2	0.0	0.2	1.9	5.1	2.2	1.1	4.9	1.8	7.5	5.2	6.2
KS	18	36.3	3.0	10.0	5.7	0.1	0.0	1.0	3.5	7.8	0.0	5.2	0.0	0.0
IL	19	35.5	0.6	1.5	2.3	0.1	3.9	1.1	2.0	6.7	5.7	9.2	2.4	0.0
NJ	20	33.5	0.1	0.4	0.4	4.0	1.9	1.8	1.4	5.8	2.7	8.9	0.0	6.1
OK	21	31.9	2.8	7.8	3.2	0.0	1.1	0.0	4.0	6.9	0.0	6.1	0.0	0.0
SD	22	31.0	10.0	0.0	5.0	0.0	0.8	0.2	3.7	8.5	0.0	2.8	0.0	0.0
NM	23	28.7	0.9	1.4	4.8	1.2	1.9	0.7	3.6	6.1	1.1	4.9	2.1	0.0
OH	24	28.6	0.1	0.7	1.1	0.2	3.2	0.7	2.0	7.2	3.4	7.9	2.1	0.0
ID	25	26.0	9.8	0.0	5.7	0.1	2.4	0.9	0.5	5.0	0.0	1.6	0.0	0.0
UT	26	25.8	0.4	0.0	5.5	1.1	2.9	2.3	3.4	5.3	0.0	4.9	0.0	0.0
MI	27	25.7	0.8	2.4	0.8	0.1	4.0	2.3	1.4	5.9	0.0	4.6	3.4	0.0
DE	28	24.6	0.0	0.0	0.0	2.4	0.7	1.7	0.6	7.7	4.2	7.3	0.0	0.0
MO	29	24.1	0.2	0.5	5.3	0.5	2.1	0.7	1.7	6.1	2.9	4.1	0.0	0.0
WI	30	23.9	0.9	0.3	5.1	0.1	2.7	1.9	1.0	6.3	0.0	2.8	2.8	0.0
TX	31	23.7	1.2	1.9	2.9	0.3	0.6	0.7	1.3	6.0	0.0	8.5	0.3	0.0
MT	32	23.4	5.2	0.0	5.9	0.2	2.3	0.3	1.6	4.4	0.0	3.5	0.0	0.0
NE	33	23.2	1.4	3.0	5.0	0.0	1.8	0.6	2.8	5.2	0.0	3.4	0.0	0.0
NC	34	22.8	0.7	0.9	3.6	0.3	2.1	1.0	1.6	5.9	0.8	4.5	1.4	0.0
PA	35	22.1	0.3	0.4	0.1	0.4	2.2	1.2	0.9	6.4	0.6	6.8	2.8	0.0
AR	36	21.8	1.0	0.9	5.0	0.0	2.1	0.2	0.7	6.2	0.0	2.6	3.1	0.0
ND	37	21.4	2.9	0.5	7.2	0.0	0.0	0.2	5.3	2.8	0.0	2.5	0.0	0.0
AK	38	20.3	3.6	5.4	1.3	0.0	0.0	0.8	2.6	4.7	0.0	1.9	0.0	0.0
WY	39	18.7	1.0	0.0	10.0	0.1	0.3	0.4	3.8	1.5	0.0	1.6	0.0	0.0
GA	40	18.6	0.6	0.9	2.4	0.0	0.8	1.3	1.7	7.4	0.0	3.5	0.0	0.0
VA	41	17.9	0.6	0.7	0.6	0.1	0.2	1.4	1.9	6.5	0.0	5.9	0.0	0.0
IN	42	17.7	0.5	1.2	0.5	0.0	2.6	0.7	1.7	5.9	0.0	4.6	0.0	0.0
SC	43	16.6	0.5	0.9	0.1	0.2	1.9	0.5	1.3	7.7	0.0	3.5	0.0	0.0
TN	44	14.5	1.7	0.7	0.0	0.2	0.7	1.0	1.2	6.5	0.0	2.5	0.0	0.0
WV	45	13.7	0.3	0.4	0.7	0.1	0.7	0.1	2.9	3.8	0.0	4.7	0.0	0.0
KY	46	13.1	0.4	0.7	1.1	0.1	1.2	0.4	1.5	5.8	0.0	1.9	0.0	0.0
MS	47	12.9	0.1	0.0	1.1	0.0	1.0	0.1	0.6	6.2	0.0	3.8	0.0	0.0
LA	48	12.5	0.2	0.1	0.0	0.7	0.3	0.2	1.7	5.4	0.0	3.9	0.0	0.0
FL	49	11.5	0.1	0.1	0.6	0.2	0.4	1.2	1.4	5.6	0.0	1.9	0.0	0.0
AL	50	10.0	0.9	0.7	1.4	0.0	0.3	0.3	0.7	5.7	0.0	0.0	0.0	0.0