

Factsheet: State and utility climate change targets shift to carbon reductions, technology diversity (June 30, 2019)

The last twelve months have seen a marked shift in state and utility company energy and climate policies towards ambitious carbon targets and an embrace of diverse technologies to achieve them through “Clean Electricity Standards” (or CES’s). For many years, clean electricity policies focused either on achieving targets for renewable energy through “renewable portfolio standards” or setting emissions caps. Instead, CES’s typically require an increasing percentage of zero-carbon electricity. As opposed to carbon emission limits or pricing, CES’s focus on bringing more clean energy resources to market.

California, which would be the world’s fifth largest economy if it were a country, was the first state to move forward with this construct, passing a 100% CES in December 2018; the target takes full effect in 2045. In the same month, Xcel Energy, one of the nation’s largest power companies, pledged to run a carbon-free system by 2050. New Mexico followed suit in March 2019, Nevada and Washington State in April 2019, and Colorado in May. (Several of these laws also require an increasing percentage of renewable electricity.) In June, New York lawmakers passed legislation to eliminate greenhouse gas emissions by 2050. Other power companies too are increasingly making commitments to significant carbon reductions with technological pathways left open.

The new focus on carbon and technology diversity in the CES builds on the success of state renewable portfolio standards while reflecting increasing awareness that the addition of low- or no-carbon, always-available energy – such as nuclear energy or gas-type power plants in which the carbon is removed and permanently stored – could substantially reduce the costs of reaching stringent carbon targets¹.

A listing of recently enacted and proposed CES’s and utility company pledges is attached as Appendix A; Appendix B tallies up their significance in terms of national electric market share and carbon emission covered; and Appendix C maps the commitments by geographic area covered.

Notable findings:

- 6 states have enacted 100% carbon free standards, representing 14.8% of national electric sales and 6.9% of national utility carbon missions.
- Adding in utilities that have made 80-100% carbon-free pledges the total coverage for deep committed carbon reductions (as opposed to renewables-only policies) is about 31% of US electricity sales and 24% of national utility CO2 emissions

¹ See, e.g. Jenkins, Jesse D., Max Luke, and Samuel Thernstrom. "Getting to Zero Carbon Emissions in the Electric Power Sector." *Joule* 2.12 (2018): 2498-2510.

Appendix A: State Technology-Inclusive Clean Energy Standards and Corporate Commitments – The National State of Play

State laws

Arizona - Discussions around an 80-100% clean energy standard are prominent following an RPS ballot resolution failure last November; the Arizona Corporation Commission is continuing to hear the question.

California - Passed in 2018, SB100 requires a 100% carbon free power grid by 2045, and further mandated that 60% of electricity come from renewable energy other than hydro by 2030. Recently introduced A.B.915 would expand the mandate to 80% zero carbon energy by 2038 and define zero carbon energy in a tech-neutral manner.

Colorado – SB 236 has passed and awaits the Governor’s signature. It requires a zero-carbon supply by 2050 from Xcel Energy, confirming the company’s previous voluntary commitment. This law covers roughly 60% of the state’s load; other utilities (mostly publicly owned) are exempted.

Illinois - H.B. 2861 adjusts the Illinois Power Agency Act to expand the procurement of clean energy to target a 100% clean energy goal for Northern Illinois (Exelon service territory) by 2032.

Massachusetts - The Clean Energy Standard of 2017 requires 80% low carbon electricity by 2050 with a minimum of 60% from qualified renewable energy.

Minnesota - Gov. Walz has stated that he will push for legislation that would lead to 100% carbon free electricity by 2050 and wants utilities to be able to determine how and at what pace they achieve the goal. There is some bipartisan legislative support for the “Clean Energy First” portion of the package that boosts renewable projects before the MN Public Utilities Commission. Other proposals in the state legislature have been more prescriptive with paths to the same 100% carbon free goal.

Nevada - S.B. 358 has passed and mandates that 50% of power from investor owned utilities (covering more than 95% of state load) come from renewable sources by 2030, while setting a target of zero carbon power by 2050. The bill is awaiting the Governor’s signature.

New York - S.B. S6599, the “climate leadership and community protection act,” has passed Senate and Assembly. It requires New York to reduce its planet-warming pollution 85 percent below 1990 levels by 2050, and offset the remaining 15 percent, possibly through measures to remove carbon dioxide from the atmosphere. The bill requires New York to get 70 percent of its electricity from renewable sources by 2030 and shift entirely to carbon-free power a decade later.

New Mexico - Recently signed S.B. 489 sets a target that all retail sales of electricity in New Mexico from investor owned utilities be zero carbon by 2045, with up to 80% renewable if cost justified. Distribution cooperatives, serving roughly 25% of state load, are exempted.

Pennsylvania - H.B. 11, expands the current Alternative Energy Purchasing Standard to include nuclear, effectively increasing the ambition of the Pennsylvania zero carbon energy mandate to 68%.

Washington – The Governor is prepared to sign SB5116 requiring all electricity generation in the state to be carbon neutral by 2030 and completely carbon free by 2045.

Wisconsin - Gov. Evers has proposed a statutory 100% clean energy goal in his 2019-2021 budget proposal.

Utility Company Pledges

(Mid-century targets, unless otherwise noted)

American Electric Power – 80% GHG reduction

Alliant Energy – 80% GHG reduction

Ameren Missouri – 80% GHG reduction

Avangrid – carbon neutral by 2035

Avista -100% clean energy by 2045

Consumers Energy – 90% GHG reduction by 2040

DTE Energy – 80% GHG reduction by 2040

Dominion – 80% GHG reduction

FirstEnergy – 90% GHG reduction by 2045

Green Mountain Power – 100% renewable by 2030

Idaho Power Company – 100% carbon free by 2045

Madison Gas & Electric Company – Carbon neutral

MidAmerican Energy Company – 100% renewable by 2020

National Grid – 80% GHG reduction

NIPSCO – 90% GHG reduction by 2028

Pacific Gas & Electric Company – 80% GHG reduction

PNM Resources – Zero carbon by 2040

Portland General Electric – 80% GHG reduction

Sacramento Municipal Utility District – 90% GHG reduction

Southern California Edison – 80% GHG reduction

Southern Company – “Low or no carbon”

WEC Energy Group – 80% GHG reduction

Xcel Energy – 100% carbon free

Appendix B: Cumulative total of electricity sales and CO2 emissions covered by deep decarbonization state legislation and utility pledges

(To avoid double counting, the table does not include utility sales and CO2 emissions within states that have enacted or are considering deep decarbonization legislation.)

State or Utility	Mandate or Target	Electricity Sales (MWh)	Cumulative Electricity Sales (MWh)	Cumulative Electricity Sales (Percent of National Total)	CO2 Emissions (MMt)	Cumulative CO2 Emissions (MMt)	Cumulative CO2 Emissions (Percent of National Total)	Level of Commitment
California	100% carbon-free	257,267,937	257,267,937	6.7%	36.6	36.6	2.0%	Signed into law
Colorado	100% carbon-free*	28,628,812	285,896,749	7.4%	18.9	55.5	3.1%	Signed into law
District of Columbia	100% renewable	10,916,446	296,813,195	7.7%	0.0	55.5	3.1%	Signed into law
Hawaii	100% renewable	9,324,201	306,137,396	7.9%	6.6	62.1	3.5%	Signed into law
New Mexico	100% carbon-free†	18,115,192	324,252,588	8.4%	18.1	80.2	4.5%	Signed into law
Nevada	100% carbon-free‡	30,717,294	354,969,882	9.2%	13.2	93.4	5.2%	Signed into law
New York	100% carbon-free	144,992,433	499,962,315	12.9%	27.7	121.1	6.7%	Signed into law
Puerto Rico	100% renewable	17,300,000	517,262,315	13.4%	13.4	134.5	7.5%	Signed into law
Washington	100% carbon-free	91,948,172	609,210,487	15.8%	9.5	144.1	8.0%	Signed into law
Illinois	100% carbon-free	137,196,310	746,406,797	19.3%	66.4	210.5	11.7%	In state legislature
Maine	100% renewable	11,213,674	757,620,471	19.6%	1.5	212.0	11.8%	In state legislature
Minnesota	100% carbon-free	67,152,580	824,773,051	21.3%	26.5	238.4	13.3%	In state legislature
Wisconsin	100% carbon-free	69,079,109	893,852,160	23.1%	38.5	276.9	15.4%	In state legislature
MidAmerican Energy Company	100% renewable	23,860,859	917,713,019	23.7%	12.5	289.5	16.1%	Will achieve

Avista	100% carbon-free	414,210	918,127,229	23.8%	0.2	289.7	16.1%	Announced target
Idaho Power Company	100% carbon-free	14,570,954	932,698,183	24.1%	0.5	290.2	16.2%	Announced target
Xcel Energy (Exc. PSC of Colorado)	100% carbon-free	18,309,543	951,007,726	24.6%	9.5	299.7	16.7%	Announced target
American Electric Power Company	80% GHG reduction	103,443,373	1,054,451,099	27.3%	63.9	363.6	20.2%	Announced target
Alliant Energy	80% GHG reduction	14,393,847	1,068,844,946	27.7%	7.6	371.2	20.7%	Announced target
Ameren Missouri	80% GHG reduction	31,597,238	1,100,442,184	28.5%	25.6	396.8	22.1%	Announced target
AVANGRID	Carbon neutral by 2035	6,072,561	1,106,514,745	28.6%	1.2	398.0	22.2%	Announced target
Consumers Energy Company	90% GHG reduction	33,248,491	1,139,763,236	29.5%	17.3	415.2	23.1%	Announced target
DTE Electric Company	80% GHG reduction	42,243,910	1,182,007,146	30.6%	21.9	437.2	24.3%	Announced target
Dominion	80% GHG reduction	102,628,327	1,284,635,473	33.2%	33.4	470.6	26.2%	Announced target
FirstEnergy	90% GHG reduction	50,523,874	1,335,159,347	34.5%	27.4	498.1	27.7%	Announced target
National Grid	80% GHG reduction	10,322,331	1,345,481,678	34.8%	4.0	502.0	27.9%	Announced target
NIPSCO	90% GHG reduction	16,693,050	1,362,174,728	35.2%	13.8	515.8	28.7%	Announced target
Portland General Electric	80% GHG reduction	17,754,280	1,379,929,008	35.7%	2.3	518.1	28.8%	Announced target
WEC Energy Group	80% GHG reduction	1,246,490	1,381,175,498	35.7%	0.6	518.7	28.9%	Announced target
Southern Company	“Low or no carbon”	145,698,370	1,526,873,868	39.5%	59.6	578.3	32.2%	Announced target

Appendix C: Map of State laws enacted and proposed, and power company carbon pledges

