Illinois Renewable Portfolio Standard Report Card: D

Illinois' Renewable Portfolio Standard (RPS) sets renewable electricity goals and determines which energy sources qualify as renewable. These programs can be a vital part of a state's energy policy portfolio to drive the shift to renewable energy. But Illinois' weak RPS program cannot foster the rapid transition to clean, renewable energy in time to stave off the worst effects of climate change. The state's RPS program is further compromised by Illinois' reliance on fossil-fueled electricity generation from coal and natural gas as well as nuclear power.

The Illinois RPS program is undermined by its lackluster target combined with a weak portfolio definition that counts dirty power sources toward its renewable energy goals — including paper mill residues known as "black liquor" as well as burning waste methane from landfills, sewage treatment plants and factory farms. It also includes renewable energy "credits" (RECs), which allow utilities to continue burning fossil fuels while buying credits for renewable power produced elsewhere, even outside of Illinois.

Illinois' inadequate RPS program barely outperforms that of most states, and the average state RPS program is pitifully weak (see Table 1). Illinois' statute does have fewer dirty energy sources than that of some states, but it is barely transitioning to genuine renewables. Illinois can and must do better. Illinois must strengthen its RPS program by expelling dirty energy sources, eliminating renewable energy credits and strengthening its target to achieve 100 percent clean, renewable energy within two decades.

Illinois and the United States must rapidly shift to 100 percent clean, renewable power — produced from wind, solar and geothermal energy. The majority of U.S. electricity still comes from climate-destroying fossil fuels.[1] In 2016, 39 percent of Illinois' utility-scale electricity was fueled by coal, natural gas and oil, and 52 percent was supplied by nuclear power; only 6 percent was generated by wind or solar energy.[2]

TABLE 1. Grading Illinois' Renewable Portfolio Standard

RPS provision	Ideal RPS	Illinois RPS	Illinois grade	Average state grade
Target and time frame	100%	25% by 2025	D	D (30% by 2026)
Dirty portfolio and RECs	No RECs, none of 6 dirty energy sources	Allows RECs and 2 dirty energy sources	C	D (allow 4 dirty sources/RECs)
Transition to renewable energy	Shift to 100% by 2038	Projected to achieve 24% by 2038	D-	D (projected to achieve 31% by 2038)
Overall			D	D

Washington's failure to act on climate change means that the states must take decisive action to transition to clean energy. Strengthening RPS programs is an important component of state climate policies and could dramatically increase the renewable power generation necessary to curb climate change.

Introduction to Renewable Portfolio Standards

State renewable portfolio standards establish a renewable power goal and target date and define which sources of energy count toward fulfilling the renewable electricity goals. All states allow solar and wind power, but they also allow a range of dirty energy sources such as municipal waste incineration or even coal. Almost all states allow utilities to purchase renewable energy credits (RECs), instead of generating renewable energy.[3]

Iowa adopted the first mandatory RPS in 1983, and Illinois followed suit in 2007.[4] By 2018, 29 states and the District of Columbia had mandatory RPS programs, covering utilities that delivered 56 percent of U.S. electricity sales.[5]

Strong RPS programs can be essential parts of state renewable energy policy, along with energy efficiency standards, tax incentives and grants for installing renewable energy, and other programs. But renewable incentives can be undercut when states like Illinois encourage additional expansion of natural gas or oil exploration and fossil fuel infrastructure.

Food & Water Watch evaluated Illinois' RPS program based on the strength of its target, the inclusion of RECs and dirty energy sources, and how well it was projected to shift its energy mix to wind, solar and geothermal power sources over coming decades. (For more on the scorecard, see *Cleanwashing: How States Count Polluting Energy Sources as Renewable*[6])

Illinois' indifferent RPS target goal and time frame are too weak to curb climate change

Strong RPS policies would set a target of 100 percent renewable electricity generation from only wind, solar and geothermal energy, which is imperative to avoiding the worst effects of climate change. The planet is poised to emit more carbon dioxide than what the Intergovernmental Panel on Climate Change conservatively estimated would give us only a two-out-of-three chance of avoiding a catastrophic 1.5 degrees Celsius rise in temperature.[7] As the concentration of greenhouse gases in the atmosphere exceeds crucial thresholds, the effect on climate change could be sudden

Illinois' RPS includes burning a toxic industrial paper mill waste called black liquor (above). Burning this substance emits air pollutants, including particulate matter and greenhouse gases known to contribute to climate change.

and potentially irreversible.[8] Reducing these emissions by about 20 percent every year would drive emissions to near zero within 20 years.[9]

Illinois' phased-in RPS target requires utilities to generate 25 percent of their power from renewable sources by 2025; utilities must generate 16 percent of their power from renewable sources by 2019.[10]

Illinois' RPS allows dirty energy sources and policies

Food & Water Watch identified six dirty "renewable" energy sources as well as whether states allowed RECs that must be expelled from RPS programs. Illinois' RPS allowed two dirty energy sources — waste methane and burning paper mill residue — as well as RECs.[11] Illinois' RPS did not include several common RPS dirty energy sources (including garbage incineration, so-called clean coal, nuclear power and wood-burning power), but it must shed waste methane, paper mill residue and RECs to clean up its RPS program.

Waste methane (landfills, sewage treatment plants and factory farms): Illinois' RPS included burning waste methane from landfills, sewage treatment plants and animal waste, such as manure digesters (burning the methane released from factory farm manure).[12] This methane is often referred to as biogas.[13] Biogas is primarily methane and is essentially indistinguishable from fracked natural gas, with many of the same problems.[14] Burning biogas or methane releases greenhouse gases as well as pollutants including nitrogen oxides, ammonia and hydrogen sulfide.[15]

Illinois is home to at least 19 landfill waste-to-energy power plants,[16] and these expensive, inefficient and polluting facilities often generate power for the facilities themselves.[17] Illinois landfills have a history of pollution violations ranging from groundwater contamination to methane gas leaks and strong odors.[18] The Mallard Lake landfill and gas-to-energy facility has been investigated for groundwater contamination from volatile organic compounds like vinyl chloride — a chemical that is toxic to humans and a known human carcinogen.[19] Mallard Lake has also been investigated for significant methane leaks within 30 to 50 feet of homes, posing the risk of explosions or fires if methane leaks become trapped in residential basements.[20]

Paper mill residues (black liquor): Illinois' RPS specifically allowed paper mill residues.[21] Black liquor is a toxic industrial waste from the paper milling process that can be burned for electricity.[22] Burning black liquor emits air pollutants including particulate matter and greenhouse gases.[23] From 2016 to 2017, Illinois counted nearly 500,000 renewable energy credits toward fulfilling its RPS goals from black liquor, sourced from far-away states like Louisiana and Texas.[24]

Renewable energy credits: Allowing RECs under Illinois' RPS permits utilities to burn polluting fuels while purchasing distant renewable energy credits, potentially diminishing the environmental and job creation benefits of renewable energy.[25] From 2016 to 2017, Illinois RECs from dirty energy sources including black liquor, biogas, wood-burning power and industrial waste heat made up nearly half (44 percent) of the RECs used in Illinois.[26]

Illinois' RPS is not strong enough to achieve 100 percent renewables within two decades

Most states would not meet their RPS goals through wind, solar and geothermal power alone, and almost no states are on track to deliver 100 percent clean, renewable power by 2038. Nationally, the installation of wind, solar and geothermal power accelerated rapidly in recent years, but the Trump administration's attack on renewable energy will likely curb the adoption of these needed energy sources.[27]

Illinois has experienced significant renewable energy growth over the past few years. By 2016, Illinois had just over 4,000 megawatts of installed wind and solar power capacity, but renewable energy from wind and solar still made up only about 6 percent of the state's electricity generation.[28] Illinois is projected to reach only 24 percent renewable energy by 2038 from wind, solar and geothermal energy alone — missing its weak target of 25 percent by 2025, and not enough to curb climate change.[29]

Now is the time to strengthen Illinois' RPS program

Robust mandatory RPS programs can be an important part of state policies to encourage the shift to renewable energy. Illinois must raise its target goal, expel dirty energy sources and eliminate renewable energy credits to ensure that the policies can promote a swift transition to genuine renewable energy. Illinois must raise its RPS goal to 100 percent renewable energy and eliminate RECs, paper mill residue, and waste methane power from landfills, sewage treatment plants and factory farms from its eligible RPS energy sources.

Endnotes

1 Food & Water Watch analysis of U.S. Department of Energy (DOE). Energy Information Administration (EIA). Calculation based on Forms: EIA-826, "Monthly Electric Utility Sales and Revenues with State Distributions Report," EIA-860, "Annual Electric Generator Report." EIA-861, "Annual Electric Power Industry Report" and EIA-923, "Power Plant Operations Report." Data downloaded April 2018.

2 *Ibid*.

3 *See* Food & Water Watch. "Cleanwashing: How States Count Polluting Energy Sources as Renewable." July 2018 at 8.

4 Iowa Code §476.44; 77th Iowa G.A. Chapter 182, S.F. 380; Illinois Compiled Statutes (ILCS). 20 ILCS 3855/.

5 Barbose, Galen. Lawrence Berkeley National Laboratory. "U.S. Renewables Portfolio Standards 2017 Annual Status Report." July 2017 at 6. Note: 56 percent figure cited is as of July 2017.

6 *See* Food & Water Watch (2018).

7 Pachauri, Rajendra K. et al. "Climate Change 2014: Synthesis Report." Intergovernmental Panel on Climate Change (IPCC) (IPCC Synthesis). 2015 at 64; Food & Water Watch calculation based on: Le Quéré, Corinne et al. "Global carbon budget 2016." *Earth System Science Data.* Vol. 8, Iss. 2. November 14, 2016 at 609 and 633; Friedlingstein, P. et al. "Persistent growth of CO2 emissions and implications for reaching climate targets." *Nature Geoscience.* Vol. 7. September 21, 2014 at 710.

8 Drijfhout, Sybrean et al. "Catalogue of abrupt shifts in Intergovernmental Panel on Climate Change climate models." *Proceedings of the National Academy of Sciences.* October 12, 2015 at E5777.

9 *Ibid*; Friedlingstein et al. (2014) at 710.

10 20 Ill. Comp. Stat. §3855/1-75(c)(1)(B).

11 Illinois does not specifically identify black liquor in its definition of biomass, but the Illinois Corporation Commission confirmed that Illinois deems black liquor to be renewable because it falls under eligible "environmentally preferable" fuel sources. Food & Water Watch email communication; Illinois 20 Ill. Comp. Stat. §3855/1-10 ("Renewable energy resources"), §3855/1-75(c)(1)(B).

12 20 Ill. Comp. Stat. §3855/1-10 ("Renewable energy resources") and §3855/1-75(c).

13 U.S. Environmental Protection Agency (EPA), DOE and U.S. Department of Agriculture (USDA). "Biogas Opportunities Roadmap." August 2014 at 8.

14 Anderson, Larry G. "Effects of using renewable fuels on vehicle emissions." *Renewable and Sustainable Energy Reviews*. March 2015 at 163 and 164.

15 Kuo, Jeff. California State University, Fullerton. "Air Quality Issues Related to Using Biogas From Anaerobic Digestion of Food Waste." February 2015 at 2; Sharvelle, S. and L. Loetscher. Colorado State University. "Anaerobic Digestion of Animal Wastes in Colorado." May 2011 at 1 and 3; Whiting, Andrew and Adisa Azapagic. "Life cycle environmental impacts of generating electricity and heat from biogas produced by anaerobic digestion." *Energy.* Vol. 70. 2014 at 181, 184, 187 and 191 to 192.

16 Food & Water Watch analysis of EIA-826, EIA-860, EIA-861 and EIA-923.

17 Post, Tom. "Farmer uses methane to make electricity." *Minnesota Public Radio News*. June 27, 2008; Lopez, Ricardo. "From waste to watts." *Los Angeles Times*. June 9, 2013; Combs, Amy. "The methane question." *Santa Cruz Good Times*. February 23, 2010; Clarke Energy. "Combined heat and power for sewage gas applications." Available at https://www.clarke-energy.com/sewage-gas/. Accessed January 2018; Illinois EPA. "Veolia ES Orchard Hills Landfill and Winnebago Landfill odor issues: Fact sheet #2." August 2010.

18 EPA. Office of Emergency and Remedial Response. "Superfund Record of Decision: Tri County Landfill, IL." EPA/ROD/R05-92/218. September 1992, at 1 to 3; Illinois EPA. "Wayne Township groundwater contamination: Fact sheet 1." July 2006; Illinois EPA (2010).

19 Illinois EPA (2006); EPA. On-Scene Coordinator (OSC). "Mallard Lake Landfill." Site Profile. EPA OSC Response; OSC. "Mallard Lake Landfill." Pollution Report #13. June 5, 2008.

20 OSC. "Mallard Lake Landfill." Site Profile; Pyke, Marni. "Landfill's methane gas leaks pose worry to neighbors." *Daily Herald* (IL). January 20, 2008.

21 Illinois does not specifically identify black liquor in its definition of biomass, but the Illinois Corporation Commission confirmed that Illinois deems black liquor to be renewable because it falls under eligible "environmentally preferable" fuel sources. And Illinois utilities continue to purchase black liquor RECs to meet the RPS targets.

22 Gavrilescu, Dan. "Energy from biomass in pulp and paper mills," *Environmental Engineering and Management Journal*. Vol. 7, No. 5. September/October 2008 at 538; EPA. Office of Water. "Technical Support Document for Best Management Practices for Spent Pulping Liquor Management, Spill Prevention and Control." EPA-821-R-97-011. October 1997 at Table 5-9.

23 International Finance Corporation. World Bank Group. "Environmental, health, and safety guidelines: pulp and paper mills." December 10, 2007 at 5.

24 Food & Water Watch analysis of PJM Environmental Information Services Generation Attribute Tracking System. Illinois RPS Retired Certificates for Reporting Year 2017. June 2016 to May 2017.

25 Mack, Joel et al. "All RECs are local: how in-state generation requirements adversely affect development of a robust REC market." *Electricity Journal*. Vol. 24, Iss. 4. May 2011 at 9 to 11.

26 Food & Water Watch analysis of PJM Environmental Information Services Generation Attribute Tracking System. Illinois RPS Retired Certificates for Reporting Year 2017. June 2016 to May 2017.

27 Eilperin, Juliette and Brady Dennis. "Trump puts critic of renewable energy in charge of renewable energy office." *Washington Post*. May 2, 2017; Bussewitz, Cathy and Geoff Mulvihill. "Trump creates uncertainty for wind, solar power." *Seattle Times*. January 25, 2017.

28 Food & Water Watch analysis of EIA-826, EIA-860, EIA-861 and EIA-923; DOE. WINDExchange. "U.S. Installed and Potential Wind Power Capacity and Generation: 2016 Installed Wind Power Capacity (MW)." Accessed April 2018; Solar Energy Industries Association. "Solar Spotlight: Illinois." March 12, 2018.

29 Food & Water Watch analysis of EIA-826, EIA-860, EIA-861 and EIA-923. Food & Water Watch estimated the projected in-state share of utility scale power (including distributed rooftop solar) generated by wind, solar (including rooftop solar) and geothermal and the share of retail electricity sales from in-state wind, solar (including rooftop solar) and geothermal to 2038 with a 10-year linear projection of these annual percentages based on the 2007 to 2016 period.

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