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Update on State Clean Energy Policies

States are continuing to make significant commitments to policies that reduce greenhouse gas (GHG) emissions. While the federal government is undertaking efforts to roll back federal GHG programs, states have a long history of taking the lead to design policies that meet their citizens' environmental, health, and economic objectives and often look to build upon other states' successes. Some states are identifying tools to achieve greater reductions through existing programs, some are targeting programs to tackle dual goals of addressing climate change and developing a clean energy economy in their state, and others are looking to ensure their states' economies remain sustainable in the face of climate change. As a result of these efforts as well as others, renewable energy generation has doubled since 2008, with nearly 90 percent of the increase resulting from wind and solar generation.¹

This MJB&A Issue Brief highlights some of the recent actions taken by states to address climate change, from increasing existing renewable portfolio standards (RPS) and broadening RPS eligibility, to implementing "clean peak standards," to exploring how best to design and implement market-based GHG reduction programs.

State Greenhouse Gas Emissions Reduction Targets

To date, 24 state governors have joined the U.S. Climate Alliance, a bipartisan group of governors that commit to "implement policies that advance the goals of the Paris Agreement, aiming to reduce [GHG] emissions by at least 26-28 percent below 2005 levels by 2025." Eight of those 24 governors joined in 2019.

Many of these states have gone further. To date, 18 states (along with the District of Columbia (D.C.)) have long-term, economy-wide emissions reduction targets. While states' targets vary regarding the target's emissions coverage (whether carbon dioxide or all GHGs), emissions baseline year, and ambition, at least nine of the states have adopted a mandatory GHG reduction target. Other states direct their state environmental agencies to consider how to achieve the targets.

In 2019, many states took action to establish new emission reduction targets or to increase the ambition of existing targets. In January 2019, for example, Pennsylvania became the seventeenth state to adopt a state emissions reduction target. Pennsylvania's Executive Order directs the state to "strive" to achieve a 26 percent reduction in statewide GHG emissions by 2025, and 80 percent by 2050, below 2005 levels, and directs all state agencies to "work to achieve the goals set forth in this order."² In response, this April, the Pennsylvania Department of Environmental Protection published an updated Climate Action Plan detailing a set of potential GHG reduction strategies that, if implemented, would achieve the new statewide targets.³ Later in January 2019, New Mexico became the eighteenth

¹ U.S. Energy Information Administration, "U.S. renewable electricity generation has doubled since 2008," *Today in Energy*, (March 19, 2019), <https://www.eia.gov/todayinenergy/detail.php?id=38752>.

² Executive Order 2019-01: *Commonwealth leadership in addressing climate change and promoting energy conservation and sustainable governance* (January 8, 2019), <https://www.governor.pa.gov/executive-order-2019-01-commonwealth-leadership-in-addressing-climate-change-and-promoting-energy-conservation-and-sustainable-governance/>.

³ Pennsylvania Department of Environmental Protection, *Pennsylvania Climate Action Plan 2018* (Apr. 29, 2019), <http://www.depgreenport.state.pa.us/elibrary/GetDocument?docId=1454161&DocName=2018%20PA%20CLIMATE%20ACTION%20PLAN.PDF%20%20%20%203Cspan%20style%20color%3D%22color:blue%3b%22%3E%28NEW%29%3Cspan%3E>.

state to adopt an emissions reduction target later, when Governor Michelle Lujan issued an Executive Order for the state to join the U.S. Climate Alliance and established a goal to achieve a 45 percent reduction in statewide GHG emissions by 2030, compared to 2005 levels.⁴ The Executive Order additionally directs the creation of an interagency Climate Change Task Force to provide recommendations of policies and regulatory strategies to help achieve the goal.

In May 2019, Colorado enacted legislation codifying the state’s existing emission reduction commitments while adding more stringent long-term goals of a 50 percent reduction of GHG emissions by 2030, and 90 percent by 2050, all below 2005 emissions levels.⁵ The legislation directs the Colorado Air Quality Control Commission to promulgate implementing rules and regulations consistent with the economy-wide GHG reduction goals, while taking into account “the costs of compliance,” “the time necessary for compliance,” “the importance of striving to equitably distribute the benefits of compliance,” “the relative contribution of each source or source category to statewide [GHG] pollution,” and “whether greater or more cost-effective emission reductions are available through program design.”

In June 2019, New York enacted the Climate Leadership and Community Protection Act which, among other things, revises the state’s existing target to a new GHG emissions reduction target of 40 percent below 1990 levels by 2030 and 85 percent below 1990 levels by 2050.⁶ The Act requires the Department of Environmental Conservation (DEC) to promulgate rules to ensure compliance with the statewide emissions reductions by January 1, 2024. Additionally, the Act sets a new goal to achieve net-zero emissions economy-wide by 2050 and directs a newly-established Climate Action Council to make recommendations through a scoping plan on attaining this target.

Also in June, Maine enacted legislation that increased the stringency of their statutory emission reduction targets to a 45 percent reduction in GHG emissions by 2030 and 80 percent by 2050, below 1990 levels.⁷ The legislation directs the state’s Department of Environmental Protection to “adopt rules to ensure compliance” with the levels established. It also establishes a Maine Climate Council charged with developing recommended action plans to achieve the targets; the first update to the action plan is due by the end of 2020 . The council met for the first time in September 2019.⁸

Renewable Portfolio Standards and Carbon Neutral Procurement Targets

States’ renewable portfolio standards (RPS) have been an important policy driver of renewable energy development in the U.S. A November 2018 study attributed almost half of the growth in renewable energy between 2000 and 2017 to state RPS policies.⁹

Currently, 29 states and D.C. have RPS programs requiring utilities to supply a minimum percentage of their electricity from designated renewable, low-, or no-emissions resources. In 2018, these jurisdictions collectively

⁴ New Mexico Governor Michelle Lujan Grisham, Executive Order 2019-003 (January 29, 2019), <https://www.governor.state.nm.us/2019/01/29/gov-lujan-grisham-signs-executive-order-committing-new-mexico-to-essential-climate-change-action/>.

⁵ Colorado General Assembly, “Climate Action Plan to Reduce Pollution,” (enacted May 30, 2019), https://leg.colorado.gov/sites/default/files/2019a_1261_signed.pdf.

⁶ New York General Assembly, S.B. S6599: The Climate Leadership and Community Protection Act (signed July 18, 2019), <https://legislation.nysenate.gov/pdf/bills/2019/S6599>.

⁷ Maine Legislature, LD 1679: An Act To Establish the Maine Climate Change Council To Assist Maine To Mitigate, Prepare for and Adapt to Climate Change (signed June 26, 2019), <http://legislature.maine.gov/bills/getPDF.asp?paper=SP0550&item=1&snum=129>.

⁸ Governor Janet Mills, Mills Administration Announces Maine Climate Council Membership (September 2019), <https://www.maine.gov/governor/mills/news/mills-administration-announces-maine-climate-council-membership-2019-10-03>.

⁹ Lawrence Berkeley National Laboratory, “2018 Annual Status Report on U.S. Renewable Portfolio Standards” (November 2018), http://eta-publications.lbl.gov/sites/default/files/2018_annual_rps_summary_report.pdf.

accounted for 63 percent of electricity retail sales in the U.S.¹⁰ More than half these states have raised their overall RPS target or carve-out at some point since initial adoption of their RPS; many in recent years.¹¹ In June 2019, Maine and New York became the ninth and tenth states, along with D.C., to increase the ambition of their RPS or to direct the relevant state agency to do so within the last year.

Notably, seven states (Hawaii, California, New Mexico, Washington, New York, Maine, and Nevada), as well as D.C. and Puerto Rico, have set ambitious goals or requirements to achieve 100 percent zero-emissions electricity, defined as being generated by renewable resources or by carbon-neutral and/or zero-emissions resources, by a specified year. These states have done so through both legislation and executive orders, with most establishing this as a mandatory target, although Maine and Nevada established goals to do so. Hawaii became the first state to set a requirement of this stringency when it revised its RPS in 2015 to require 100 percent renewable electricity by 2045. These expanded policies, which can be implemented by revising the state’s RPS or in concert with it, typically allow resources such as fossil fuels paired with carbon capture and sequestration (CCS) or nuclear to qualify as eligible resources.

At least four other states (Connecticut, Maryland, New Jersey, and Virginia) have directed agencies to assess the feasibility of achieving 100 percent zero-emissions electricity by specific years and to develop recommendations and pathways to do so. These directives have been issued through both legislation and through executive orders and other administrative actions. For example, while Maryland did not set a target of 100 percent zero-carbon resources when the state revised its RPS in 2019, the enacted legislation requires the Maryland Power Plan Research Program to submit to the Governor, by 2024, a study assessing “the overall costs and benefits” of increasing the state RPS to “a goal for 100 percent renewable energy by 2040,” and to publish “recommendations regarding the feasibility” of implementing this goal.¹² In May 2018, New Jersey Governor Murphy signed an executive order directing the New Jersey Board of Public Utilities (NJBP) to prepare a 2019 Energy Master Plan that provides “a comprehensive blueprint for the total conversion of the State’s energy production profile to 100% clean energy sources on or before January 1, 2050, and shall further provide specific proposals to be implemented over the next 10 years in order to achieve the January 1, 2050 goal.”¹³ NJBP released a draft Energy Master Plan for public comment in June 2019 and intends to release a final Energy Master Plan that details “specific and targeted dates” and milestones to achieve the plan’s goals.¹⁴

Additional governors have signaled interest in 100 percent clean electricity through other administrative actions and proposals. This year, for example, while not adopted, Wisconsin Governor Evers “recommend[ed] creating a statutory goal that all electricity produced in the State of Wisconsin should be 100 percent carbon-free by January 1, 2050”¹⁵ as part of the executive budget for 2019 through 2021. Colorado Governor Polis also released a climate action plan and a roadmap that included a goal to achieve 100 percent “renewable” electricity by 2040.¹⁶

¹⁰ U.S. Energy Information Administration, “Four states updated their renewable portfolio standards in the first half of 2019,” *Today in Energy*, (June 24, 2019), <https://www.eia.gov/todayinenergy/detail.php?id=39953>.

¹¹ Lawrence Berkeley National Laboratory, U.S. Renewables Portfolio Standards: 2019 Annual Status Update (July 2019), http://eta-publications.lbl.gov/sites/default/files/rps_annual_status_update-2019_edition.pdf.

¹² Maryland General Assembly, Senate Bill No. 516 (2019 Regular Session), “An Act Concerning Clean Energy Jobs” (enacted May 25, 2019), <http://mgaleg.maryland.gov/2019RS/bills/sb/sb0516E.pdf>. The Maryland Power Plan Research Program is a government program within the state Department of Natural Resources tasked with evaluating issues relating to electric power, with the goal of balancing need, cost, and impact.

¹³ New Jersey Governor Murphy, Executive Order 28 (signed May 23, 2018), <https://nj.gov/infobank/eo/056murphy/pdf/EO-28.pdf>.

¹⁴ State of New Jersey, Draft 2019 Energy Master Plan (June 10, 2019), <https://nj.gov/emp/pdf/Draft%202019%20EMP%20Final.pdf>.

¹⁵ State of Wisconsin Office of the Governor, “Executive Budget 2019 – 2021,” (February 2019), <https://doa.wi.gov/budget/SBO/2019-21%20Executive%20Budget%20Complete%20Document.pdf>.

¹⁶ State of Colorado Office of the Governor, “Governor Polis releases roadmap to 100 percent renewable energy and bold climate action” (May 30, 2019), <https://drive.google.com/file/d/0B7w3bkFgg92dMkpxY3VsNk5nVGZGOHJGRUV5VnJwQ1U4VWtF/view>.

Table 1 details recent changes to state RPS programs and carbon-neutral procurement policies in 2018 and 2019. In addition, Appendix A provides a summary of all current state goals and requirements for RPS and zero-carbon procurement targets.

Table 1: Recent Legislative Changes to State RPS and Zero-Carbon Requirements

State	Changes to Ambition of Long-Term Requirement (Target of Percent Share of Retail Electricity Sales by Year)	Changes to Resource Eligibility
<i>California</i> <i>revised Sept. 2018¹⁷</i>	Increased 2030 requirement to obtain 50% of electricity sales from renewable resources to 60% by 2030 and each year thereafter Added 100% zero-carbon requirement by 2045	
<i>Connecticut</i> <i>revised May 2018¹⁸</i>	Increased and extended requirement to obtain 24% of electricity sales from Class I eligible renewable resources by 2020 to 44% by 2030 and each year thereafter (4% of which can be met with eligible waste-to-energy in 2018 and each year thereafter)	
<i>Maine</i> <i>revised June 2019¹⁹</i>	New state goals to have 80% of retail electricity sales come from renewable resources by 2030 and 100% by 2050 Increased and extended requirement to obtain 40% of retail electricity sales by 2018 to 80% of electricity sales from renewable and renewable capacity resources by 2030	Amended definition of “new” renewable capacity resources to excluded “refurbished” resources and revised eligibility requirements for hydropower
<i>Massachusetts</i> <i>revised Aug. 2018²⁰</i>	Increased the 1% annual growth rate of its requirement for Class I eligible new renewables to 2% annually from 2020 to 2029, dropping back to 1% each year thereafter. Thus, by 2030, requirement to obtain 25% of electricity sales from Class I eligible new renewable resources increases to 35%	

¹⁷ California State Legislature, Senate Bill No. 100, “The 100 Percent Clean Energy Act of 2018” (signed September 10, 2018), https://leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB100.

¹⁸ Connecticut General Assembly, Substitute Senate Bill No. 9, “An Act Concerning Connecticut’s Energy Future” (signed May 24, 2018), <https://www.cga.ct.gov/2018/act/pa/pdf/2018PA-00050-R00SB-00009-PA.pdf>.

¹⁹ Maine Legislature, LD 1494 (signed June 16, 2019), <http://www.mainelegislature.org/legis/bills/getPDF.asp?paper=SP0457&item=2&snm=129>.

²⁰ Massachusetts General Court, House Bill No. 4857, “An Act to Advance Clean Energy” (signed August 9, 2018), <https://malegislature.gov/Laws/SessionLaws/Acts/2018/Chapter227>.

State	Changes to Ambition of Long-Term Requirement (Target of Percent Share of Retail Electricity Sales by Year)	Changes to Resource Eligibility
<p>Maryland <i>revised May 2019²¹</i></p>	<p>Increased and extended requirement to obtain 25% of electricity sales from Tier 1 eligible renewable resources by 2020 (including at least 2.5% from solar) to 50% from Tier 1 eligible renewable resources (including at least 14.5% from solar energy and a percentage of offshore wind energy sufficient to reach a generating capacity 1,200 MW) by 2030 and each year thereafter</p> <p>By 2024, Maryland Power Plant Research Program must submit to the Governor a study assessing “the overall costs and benefits of increasing the [RPS] to a goal for 100% renewable energy by 2040” and publish “recommendations regarding the feasibility of implementing a [RPS] of 100% by 2040”</p>	
<p>Nevada <i>revised Apr. 2019²²</i></p>	<p>Increased and extended requirement to obtain 25% of electricity sales from eligible renewable resources by 2025 to 50% by 2030 and each year thereafter</p> <p>Eliminated solar carve-out of 6% by 2016 and each year thereafter</p> <p>Added “goal of achieving by 2050 an amount of energy production from zero carbon dioxide emissions resources that is equal to the total amount of electricity sold by providers of electric service”</p>	<p>Amended definition of eligible renewable resources to include additional types of hydropower</p>
<p>New Jersey <i>revised May 2018²³</i></p>	<p>Increased and extended requirement of 24.4% Class I eligible renewable resources by 2024 to 50% by 2030</p> <p>Revised solar-electric carve-out target requires at least 5.1% by 2021 and target gradually reduced to 1.1% by 2033</p> <p>Increased the offshore wind requirement of a percentage sufficient to reach a generating capacity from 1,100 MW to 3,500 MW</p>	

²¹ Maryland General Assembly, Senate Bill No. 516 (2019 Regular Session), “An Act Concerning Clean Energy Jobs” (enacted May 25, 2019) <http://mgaleg.maryland.gov/2019RS/bills/sb/sb0516E.pdf>.

²² Nevada Legislature, Senate Bill 358, “An act relating to renewable energy” (signed April 22, 2019), <http://mgaleg.maryland.gov/2019RS/bills/sb/sb0516E.pdf>; on June 6, 2019, the state’s Public Utilities Commission opened a rulemaking under Docket 19-06010 to implement SB 358: <http://pucweb1.state.nv.us/PUC2/DktDetail.aspx>.

²³ New Jersey Legislature, Assembly No. 3723, “An Act concerning clean energy, amending and supplementing P.L.1999, c.23, amending P.L.2010, c.57, and supplementing P.L.2005, c.354 (C.34:1A-85 et seq.)” (signed May 25, 2018), https://www.njleg.state.nj.us/2018/Bills/A4000/3723_II.PDF.

State	Changes to Ambition of Long-Term Requirement (Target of Percent Share of Retail Electricity Sales by Year)	Changes to Resource Eligibility
<p>New Mexico <i>revised Mar. 2019²⁴</i></p>	<p>Increased 2020 requirement to obtain 20% of electricity sales from renewable resources to 80% by 2040</p> <p>Established requirement for public utilities to obtain 100% of electricity from eligible zero-carbon resources (comprised of at least 80% renewable energy) by 2045</p> <p>Established target for distribution cooperatives to obtain 100% of electricity from eligible zero-carbon resources (comprised of at least 80% renewable energy) by 2050²⁵</p>	<p>Amended definition of eligible renewable resources to include hydropower that existed prior to 2007</p>
<p>New York <i>revised July 2019²⁶</i></p>	<p>By 2030, at least 70% of the electricity generation supplying the state’s end-use customers must be generated by renewables and by 2040, the statewide electrical demand system must be zero-emissions</p>	<p>Amends definition of eligible renewable resources for the new requirement to include geothermal and solar thermal and excludes biogas, biomass, and liquid biofuels, as well as fuel cells that utilize a fossil fuel resource in the process of generating electricity</p>

²⁴ New Mexico Legislature, Senate Bill 489, “Energy Transition Act” (signed March 22, 2019), <https://www.nmlegis.gov/Sessions/19%20Regular/final/SB0489.pdf>.

²⁵ According to the passed legislation, the requirement for 100% zero-carbon electricity by 2045 applies to all public utilities. For distribution cooperatives, the legislation establishes a 100% zero-carbon “target” for these entities, “provided that: 1) achieving the target is technically feasible; 2) the rural electric cooperative is able to provide reliable electric service while implementing the target; and 3) implementing the target shall not cause electric service to become unaffordable.”

²⁶ New York General Assembly, S.B. S6599: The Climate Leadership and Community Protection Act (signed July 18, 2019), <https://legislation.nysenate.gov/pdf/bills/2019/S6599>.

State	Changes to Ambition of Long-Term Requirement (Target of Percent Share of Retail Electricity Sales by Year)	Changes to Resource Eligibility
<p>Washington <i>revised May 2019²⁷</i></p>	<p>Added requirement that all electric utilities comply with state policy that 100% of electricity sales be GHG-neutral beginning 2030 and that non-emitting electric generation and electricity from renewable resources supply 100% of electricity sales beginning 2045</p>	<p>The definition of “renewable resources” is largely consistent with Washington’s RPS and includes: (a) Water; (b) wind; (c) solar energy; (d) geothermal energy; (e) renewable natural gas; (f) renewable hydrogen; (g) wave, ocean, or tidal power; (h) biodiesel fuel that is not derived from crops raised on land cleared from old 40 growth or first growth forests; or (i) biomass energy.</p> <p>“Non-emitting electric generation defined as “electricity from a generating facility or a resource that provides electric energy, capacity, or ancillary services to an electric utility and that does not emit greenhouse gases as a by-product of energy generation.”</p> <p>Beginning in 2026, prohibits in-state electric utilities from recovering through retail rates the costs associated with providing electricity from coal-fired resources to retail electricity customers in the state²⁸</p>
<p>D.C. <i>revised Jan. 2019²⁹</i></p>	<p>Increased 2032 requirement to obtain 50% of electricity sales from renewable resources to 100% by 2032 and each year thereafter</p> <p>Increased 5% solar carve-out by 2032 to 10% by 2040 and each year thereafter</p>	

²⁷ Washington State Legislature, Senate Bill No. 551 (2019-2020) (signed May 7, 2019), <http://lawfilesexternal.leg.wa.gov/biennium/2019-20/Pdf/Bills/Session%20Laws/Senate/5116-S2.SL.pdf>. This legislation would not amend the state’s existing RPS, which applies to electric utilities serving at least 25,000 retail customers and requires 15% of eligible renewable resources by 2020 and each year thereafter.

²⁸ The legislation exempts from this requirement certain coal-fired EGUs that are included as part of a limited duration wholesale power purchase(not to exceed one month), made by an electric utility for delivery to in-state retail customers, for which the source of the power is not known at the time of entry into the transaction to procure the electricity.

²⁹ Council of the District of Columbia, B22-0904, “Clean Energy Omnibus Amendment Act of 2018,” (signed January 18, 2019), <http://lims.dccouncil.us/Download/40667/B22-0904-SignedAct.pdf>.

In addition to RPS programs and goals and requirements for 100 percent carbon-neutral electricity, several states are also exploring additional types of policies to require increased electricity from zero-carbon resources. For example, Massachusetts’ Clean Energy Standard, finalized in August 2017, requires 80 percent clean energy by 2050, 55 percent of which must come from RPS-eligible resources.³⁰ The Massachusetts Department of Environmental Protection (MassDEP) recently proposed amendments to the Clean Energy Standard. These amendments include proposing to increase the stringency of the 2020 standard and to include clean generation that commenced operation before 2011 in the standard by setting a separate Clean Energy Standard-E (CES-E). MassDEP stated that the CES-E standard, which would require 15 percent of electricity sales each year, beginning in 2020, to come from existing clean energy generators, would help to ensure compliance with the state’s 2020 GHG emission reduction limit and “[help] to ensure that Massachusetts’ electricity supply is almost completely decarbonized in 2050.”³¹

Finally, a few states are also implementing policies to specifically support existing nuclear resources. Illinois, for example, created a Zero Emissions Credit (ZEC) program in 2016. The same year, New York established a Clean Energy Standard, which requires 50 percent of electricity sales from eligible renewables resources and includes provisions for existing eligible nuclear facilities.³² New Jersey also established a ZEC program for eligible nuclear facilities in November 2018.³³

Clean Peak Standards

Some states are considering taking a more targeted approach to increasing renewables and energy storage deployment during periods of peak demand through Clean Peak Standards (CPS). These programs target emissions associated with peak electric demand periods and specifically value zero-carbon energy on the grid during defined peak hours.³⁴

Massachusetts is expected to become the first state to implement a Clean Peak Standard, beginning in 2020. Legislation enacted in 2018 required the Massachusetts Department of Energy Resources (DOER) to develop rules to implement a Clean Peak Energy Portfolio Standard. In September 2019, DOER proposed implementing regulations that detail which resources would be eligible, the applicable clean peak windows, how Clean Peak Energy Certificates (CPECs) would be generated, program metrics, and market design features. DOER has explained that the CPS is intended to target periods of the day throughout the year in which high (“peak”) electric demands lead to GHG and other air pollutant emissions reaching their highest levels due to the need to operate higher emitting and expensive electric generating units. Once implemented, the Commonwealth intends for the regulation to reduce daily peak emissions by incentivizing retail electricity suppliers to generate electricity with increasing amount of electricity from eligible low-or-zero carbon resources during peak periods. By shifting the

³⁰ 310 CMR 7.75(7)(a)(1); The regulation defines “clean energy” resources as those that: 1) qualify as Class I eligible resources under Massachusetts’ RPS, or 2) have net lifecycle GHG emissions, over a 20 year life cycle, that yield at least a 50 percent reduction of GHG emissions per unit of useful energy relative to the lifecycle GHG emissions from the aggregate use of the operation of a new combined cycle natural gas electric generating facility using the most efficient commercially available technology as of the date of the statement of qualification application for the portion of electricity delivered by the generation unit.

³¹ MassDEP, Draft Amendments to 310 CMR 7.75 (October 2019), <https://www.mass.gov/doc/310-cmr-775-proposed-clean-energy-standard-ces-amendments/download>; Background Document on Proposed Amendments, <https://www.mass.gov/doc/310-cmr-775-background-document/download>.

³² State of New York Public Service Commission, “Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard,” (August 1, 2016), <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7b44C5D5B8-14C3-4F32-8399-F5487D6D8FE8%7d>.

³³ State of New Jersey Board of Public Utilities, “NJBPUB Approves Zero Emission Credit Program and Application Process for Nuclear Power Plants,” (November 19, 2018), <https://www.bpu.state.nj.us/bpu/newsroom/2018/approved/20181119.html>.

³⁴ MJB&A, Clean Peak Standards (October 2018), <https://mjbradley.com/reports/virginia%E2%80%99s-proposed-cap-and-trade-program>.

supply of clean energy to peak periods, the Commonwealth has stated that the program can help to reduce emissions and costs for consumers.

Several states are also considering the policy, as well as other ways to target similar concerns related to times of peak electricity use. Arizona’s Corporation Commission, for example, is currently reviewing proposed CPS regulations.³⁵ In January 2018, as part of a broad Arizona Energy Modernization Plan, Arizona Corporation Commissioner Tobin proposed a CPS “to ensure that Arizona continues to expand its use of clean energy resources, while also considering the overall impact that deployment of various resources will have on the grid’s most expensive critical peak hours.”³⁶ Commissioner Tobin proposed draft CPS regulations in July 2018.³⁷

New York has taken a broader approach to encouraging clean energy and storage deployment during times of peak energy use. In July 2018, the New York Public Service Commission (PSC) issued an energy storage deployment roadmap that details a number of recommendations to help facilitate a shift toward meeting peak demands with clean energy.³⁸ Among the recommendations, the PSC recommended that the state “develop approaches to [carbon dioxide] reduction compensation that varies with time.” In December, the PSC formally adopted targets to install 1,500 MW of energy storage capacity in the state by 2025 and 3,000 MW by 2030, as well as an implementation strategy to achieve the targets. In addition, the New York Department of Environmental Conservation is considering implementing new NO_x emissions limits for simple cycle and regenerative combustion turbines during the ozone season.³⁹ The regulations would phase in lower NO_x thresholds for gas-fired peaker plants between 2023 to 2025 during the ozone season.

State Carbon Pricing and Other Policies

In addition to the programs targeting increasing specific generating resources, a number of states are also pursuing market-based carbon pricing programs, largely for the electric sector although some states are considering economy-wide approaches.

As detailed in prior MJB&A Issue Briefs, Virginia and New Jersey have completed the regulatory process to participate in the Regional Greenhouse Gas Initiative (RGGI), the electric power cap-and-trade program currently in place in the nine northeastern states.⁴⁰ Both states proposed a carbon budget reduction trajectory that reflects a compound annual reduction rate of 3.5 percent through 2030, to be consistent with the current RGGI budgets.⁴¹ The initial level of the state budget has been a central issue throughout the rulemaking process. Additional key issues

³⁵ Arizona Corporation Commission, “Docket No. RU-00000A-18-0284,”

<https://edocket.azcc.gov/Docket/DocketDetailSearch?docketId=21658#docket-detail-container2>.

³⁶ Arizona Corporation Commission, “Arizona’s Energy Modernization Plan,” (January 30, 2018),

<https://www.azcc.gov/commissioners/atobin/letters/energyplan.asp>.

³⁷ Arizona Corporation Commission, “Regarding Docket No. E-00000Q-16-0289; Review, Modernization and Expansion of the Arizona Energy Standards and Tariff Rules and Associated Rules,” (July 5, 2018), <http://images.edocket.azcc.gov/docketpdf/0000189786.pdf>.

³⁸ New York PSC and New York State Energy Research and Development Authority, New York State Energy Storage Roadmap and Staff Recommendations (July 2018), <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7b2a1bfbc9-85b4-4dae-bcae-164b21b0dc3d%7d>, Order Establishing Energy Storage Goal and Deployment Policy, Docket No. 18-00516 (December 13, 2019), <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={FDE2C318-277F-4701-B7D6-C70FCE0C6266}>.

³⁹ To date, New York Department of Environmental Conservation has issued a , “Proposed Part 227-3, Ozone Season Oxides of Nitrogen (NO_x) Emission Limits for Simple Cycle and Regenerative Combustion Turbines,” <http://www.dec.ny.gov/regulations/116131.html>.

⁴⁰ See, e.g., MJB&A, Virginia’s Proposed Cap-and-Trade Program (November 27, 2017),

<https://mjbradley.com/reports/virginia%E2%80%99s-proposed-cap-and-trade-program>; MJB&A, Potential Impacts of New Jersey Rejoining RGGI (January 19, 2018), <https://mjbradley.com/reports/potential-impacts-new-jersey-rejoining-rggi>.

⁴¹ New Jersey Department of Environmental Protection, Proposed CO₂ Budget Trading Program (December 17, 2018),

https://www.state.nj.us/dep/aqes/docs/rggi_co2_trading_proposal_with_disclaimer.pdf; Virginia Department of Environmental Quality, Proposed CO₂ Budget Trading Program General Provisions (December 27, 2017), <http://www.townhall.virginia.gov/L/viewstage.cfm?stageid=8130>.

for stakeholders have included the state’s initial carbon cap, how the state proposes to distribute the allowances (either through a consignment auction as in Virginia or auction) and how the state and regulated utilizes would direct the revenue.

In June 2019, New Jersey finalized its regulations to rejoin RGGI beginning in 2020 with an initial carbon dioxide cap of 18 million short tons that will decline to 12.6 million short tons by 2030.⁴² It is expected that the New Jersey allowances will be offered in the first RGGI auction of 2020. In December 2019, the New Jersey Legislature passed legislation codifying the state’s participation in RGGI; the legislation requires the state Department of Environmental Protection to establish and implement a GHG emissions allowance trading program that is consistent with the terms outlined in the RGGI Memorandum of Understanding (MOU).⁴³ Governor Murphy is expected to sign the bill.

In May 2019, Virginia finalized regulations to link with the RGGI program, with an initial budget of 28 million tons.⁴⁴ The regulations are “trading ready” with RGGI in that they are similar to the RGGI Model Rule and allow compliance entities in Virginia to trade RGGI allowances from other states. The regulations require covered sources and the Department of Mines, Mineral, and Energy (DMME) to sell the allowances through a consignment auction allowing the auction revenue to be returned to covered sources. Regulated electric utilities, however, are required use the proceeds to benefit their customers pursuant State Corporation Commission (SCC) requirements.

However, in Virginia’s biennial budget bill, H.B. 1700, the Virginia General Assembly included a provision that would prohibit the use of any state funds “to support membership or participation in [RGGI].” A separate provision in the bill requires that any revenue generated through any regional climate change compact, such as RGGI, be deposited in the general fund for appropriation by the General Assembly.⁴⁵ However, on November 5, 2019, Democrats won 55 of 100 seats in the House of Delegates and 21 of 40 seats in the Senate, giving Democrats a majority in both chambers. As a result, the new legislature is expected to consider legislation that would rescind previous budgetary language that prohibited state funds being used to implement RGGI.⁴⁶ This would also create opportunities for Virginia to utilize the allowance revenues for other state clean energy programs. If the legislature approves the Commonwealth’s participation in RGGI, Virginia could begin participating in allowance auctions as early as January 2021. The Virginia legislative calendar begins January 8, 2020 and runs through March 8, 2020.

Pennsylvania is the most recent state to consider participating in RGGI. On October 3, 2019, Governor Wolf issued Executive Order 7, which directed the state’s Department of Environmental Protection (DEP) to develop and present, by July 2020, a proposed rulemaking package that would allow the state to join RGGI.⁴⁷ The Executive Order requires that the proposal includes a CO₂ budget consistent with the stringency as outlined by RGGI states, be consistent with the RGGI Model Rule to allow for allowances to be traded with allowances from other states, and provide for annual or more frequent allowance auctions. The Executive Order also instructs DEP staff, along with the Public Utility Commission, to engage with the PJM Interconnection on ways to promote integration to preserve

⁴² While New Jersey was a founding member of RGGI, the state withdrew from the program in 2011. New Jersey Department of Environmental Protection, Final CO₂ Budget Trading Program (June 10, 2019), https://www.state.nj.us/dep/aqes/docs/njac7_27c.pdf.

⁴³ New Jersey Legislature, Assembly Bill 1212 (passed December 16, 2019, awaiting Governors’ signature), https://www.njleg.state.nj.us/2018/Bills/A1500/1212_R2.PDF.

⁴⁴ Virginia Department of Environmental Quality, CO₂ Budget Trading Program General Provisions (effective June 26, 2019), <http://www.townhall.virginia.gov/L/ViewStage.cfm?stageid=8608>.

⁴⁵ H.B. 1700, Budget Bill for 2018-2020, <https://lis.virginia.gov/cgi-bin/legp604.exe?191+sum+HB1700>.

⁴⁶ HB 20 (2020): Virginia Alternative Energy and Coastal Protection Act (introduced November 19, 2019), <http://lis.virginia.gov/cgi-bin/legp604.exe?201+sum+HB20>.

⁴⁷ Governor Tom Wolf, “Executive Order 2019-07- Commonwealth Leadership in Addressing Climate Change through Electric Sector Emissions Reductions” (October 3, 2019), <https://www.governor.pa.gov/newsroom/executive-order-2019-07-commonwealth-leadership-in-addressing-climatechange-through-electric-sector-emissions-reductions/>.

competitive electric markets and minimize emissions leakage. If Pennsylvania were to trade with RGGI, it would be the largest emitting state in the RGGI program, with 2016 state-wide electric sector emissions equal to 82.1 million tons.⁴⁸

In terms of economy-wide trading programs, this year, Oregon lawmakers worked to develop programs that could potentially link with the Western Climate Initiative (WCI) GHG cap-and-trade program currently in place in California and Québec.⁴⁹ Many had been watching to see if Oregon will become the second state to implement an economy-wide cap-and-trade program. In June 2019, the state House of Representatives passed HB 2020, which would establish a cap-and-trade program from 2021 through 2050 to achieve an 80 percent reduction in GHG emissions below 1990 levels by 2050.⁵⁰ HB 2020 would also allow for linkage with other cap-and-trade programs, such as the neighboring WCI. However, shortly before the end of the legislative session, the state Senate President made an unofficial statement that the bill did not have sufficient support to pass in the Senate. State lawmakers and agencies are considering revisions to the cap-and-trade proposal and may take up a revised proposal in the 2020 short legislative session, which begins February 3, 200 and runs through March 7, 2020. Governor Brown has also since indicated she is exploring options to reduce emissions through her executive authority.

Washington also explored options to link with WCI in 2019. While the Senate held a committee hearing in March on a bill that would establish a state-wide cap-and-trade program starting in 2021 through 2035, the legislature did not take further action before the regular legislative session adjourned.⁵¹

Although New York is already a member of RGGI, the New York ISO (NYISO) is considering a carbon pricing proposal that aims to incorporate a social cost of carbon into wholesale energy markets on a price-per-ton-of-CO₂ basis in order to help the state meet its decarbonization goals.⁵² NYISO concluded that the carbon price implied by RGGI allowance prices would not, on its own, be sufficient to drive reductions in line with the state's long-term decarbonization goals. In June 2019, NYISO presented its proposed carbon pricing market design, under which the proposed carbon fee would not change existing energy market structure or supplier offer procedures, and quarterly RGGI allowance prices would be subtracted from the nominal annual gross-social cost of carbon price.⁵³ NYISO has indicated that the earliest possible implementation of this carbon-adder is late-2021.

Additionally, New York's Department of Environmental Conservation recently adopted regulations requiring existing in-state power plants to meet CO₂ emissions limits. By December 31, 2020, the regulations require existing in-state fossil fuel-fired electric generating units to meet a CO₂ emissions standard of 1,800 pounds (lbs) CO₂ per MWh-gross electric output (or 180 lbs CO₂ per million Btu of input), based on a 12-month rolling average basis.⁵⁴

⁴⁸ U.S. Energy Information Administration, "State Carbon Dioxide Emissions Data," (October 31, 2018), available at: <https://www.eia.gov/environment/emissions/state/>.

⁴⁹ See, e.g., MJB&A, Oregon's Cap-and-Trade Proposal, (March 7, 2019), https://mjbradley.com/sites/default/files/MJBA_Summary_Oregon-Cap-and-Trade-Proposal.pdf.

⁵⁰ Oregon State Legislature, "Relating to greenhouse gas emissions", 2019 Regular Session, <https://olis.leg.state.or.us/liz/2019R1/Measures/Overview/HB2020>.

⁵¹ Washington State Senate, "Implementing a Greenhouse Gas Emissions Cap and Trade Program," 2019-2020 Regular Session (introduced March 6, 2019), <https://app.leg.wa.gov/billsummary?BillNumber=5981&Year=2019&Initiative=false>. The proposed legislation aimed to reduce GHG emissions by 40 percent below 1990 levels by 2035 and 80 percent by 2050 and encouraged the state to consider linking with other established market-base carbon emissions programs such as the California-Québec cap-and-trade program.

⁵² See, e.g., MJB&A, NYISO Carbon Pricing Proposal (December 20, 2018), https://mjbradley.com/sites/default/files/MJB%26A_Summary_NYISOCarbonPricingProposal.pdf.

⁵³ NYISO Business Issues Committee, Carbon Pricing Market Design (June 20, 2019), https://www.nyiso.com/documents/20142/7129597/6.20.2019_MIWG_Carbon_Pricing_MDC_FINAL.pdf/cf67ebb8-d0fc-7b4b-100f-c3756d6fae8.

⁵⁴ New York, Part 251: CO₂ Performance Standards for Major Electric Generating Units (finalized May 9, 2019), <https://www.dec.ny.gov/regulations/113544.html>.

Thus, the regulations require the state's remaining coal-fired power plants to either repower to cleaner sources of energy or to retire by 2020. The State of Washington has also imposed requirements affecting coal-fired resources with recent legislation prohibiting in-state electric utilities from recovering through retail rates the costs associated with providing electricity from coal-fired resources to retail electricity customers in the state beginning in 2026. This requirement is expected to effectively eliminate coal-fired resources from the mix of electricity utilities provide to in-state customers by the end of 2025.⁵⁵

Companion Sector Programs

While this MJB&A Issue Brief highlights programs focused more on the electric sector, states are also exploring ways to address emissions from the transportation sector, which became the largest source of GHG emissions in the U.S. in 2016.⁵⁶ To date, ten states have adopted California's Zero-Emissions Vehicles (ZEV) programs, requiring an increasing share of vehicles sold in the state to be ZEVs, such as battery electric vehicles, fuel cell vehicles, and plug-in hybrid EVs.⁵⁷ Colorado is the most recent state to adopt the program, after adopting final regulations to do so in August 2019.⁵⁸ Colorado Governor Jared Polis, in an Executive Order issued in January 2019, had directed the state's Air Quality Control Commission to consider adopting specific provisions of California's ZEV program and to conclude its consideration by October 30, 2019.⁵⁹

Three additional states are currently looking to adopt California's standards. In September 2019, Minnesota and New Mexico announced in September that they intend to begin the rulemaking process to consider adopting California's more stringent standards.⁶⁰ Then, in November 2019, Nevada Governor Sisolak announced that the state will also begin the process to consider adopting the standards.⁶¹

Additionally, the Transportation and Climate Initiative (TCI) is working to develop a process to design a regional policy to reduce carbon emissions from the transportation sector.⁶² TCI is a regional collaboration of 12 Northeast and Mid-Atlantic states and D.C. that seeks to improve transportation, develop the clean energy economy, and reduce carbon emissions from the transportation sector. TCI has held a series of meetings in the first half of 2019 focusing on key design elements, transportation equity, and low-carbon transportation investments, among other issues.

⁵⁵ Washington State Legislature, Senate Bill No. 551 (2019-2020) (signed May 7, 2019), <http://lawfilesexet.leg.wa.gov/biennium/2019-20/Pdf/Bills/Session%20Laws/Senate/5116-S2.SL.pdf>. The legislation exempts from this requirement certain coal-fired EGUs that are included as part of a limited duration wholesale power purchase(not to exceed one month), made by an electric utility for delivery to in-state retail customers, for which the source of the power is not known at the time of entry into the transaction to procure the electricity.

⁵⁶ Center for Climate and Energy Solutions, "Transportation emissions roll over power sector emissions" (June 20, 2016), <https://www.c2es.org/2016/06/transportation-emissions-roll-over-power-sector-emissions/>.

⁵⁷ The states are: Colorado, Connecticut, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Rhode Island, and Vermont. While the Trump Administration finalized in September 2019 a rule to revoke California's (and Section 177 states') ability to adopt these ZEV standards beginning model year 2021, states, NGOs, and other stakeholders have filed petition for review of this action in the D.C. District Court and D.C. Circuit.

⁵⁸ Colorado Department of Public Health and Environment, Zero Emission Vehicle Mandate Proposal, <https://www.colorado.gov/pacific/cdphe/zero-emission-vehicle-mandate-proposal>.

⁵⁹ State of Colorado Office of Governor, "Executive Order Supporting a Transition to Zero Emissions Vehicles" (January 17, 2019), https://www.colorado.gov/governor/sites/default/files/inline-files/b_2019-002_supporting_a_transition_to_zero_emissions_vehicles.pdf.

⁶⁰ Minnesota Pollution Control Agency, Rulemaking: Clean Cars Minnesota, <https://www.pca.state.mn.us/air/clean-cars-mn-rulemaking>; Office of the New Mexico Governor, "Lujan Grisham commits New Mexico to bold clean car standards at Climate Week event," (September 24, 2019), <https://www.krwg.org/post/lujan-grisham-commits-new-mexico-bold-clean-car-standards-climate-week-event>.

⁶¹ Nevada Governor Steve Sisolak, <https://twitter.com/GovSisolak/status/1197957987404406785>, (November 22, 2019).

⁶² The participating states include Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Virginia. Transportation & Climate Initiative, "Nine States and D.C. to Design Regional Approach to Cap Greenhouse Gas Pollution from Transportation" (December 18, 2018), https://www.georgetownclimate.org/files/Final_TCI-statement_20181218_formatted.pdf.

On October 1, 2019, jurisdictions participating in TCI released a framework for a draft regional policy proposal to reduce GHG pollution from the transportation sector. The framework outlines the overall goals of equity, environmental justice, non-discrimination, and meaningful public participation. Additionally, the framework makes clear that program would cap CO₂ emissions from the combustion of the fossil component of finished motor gasoline and on-road diesel fuel in the region, and the jurisdictions continue to evaluate whether and how to include and treat biofuels. Thus, state fuel suppliers would be the regulated entities and would be required to hold allowances to cover their emissions. Similar to RGGI, the jurisdictions intend to propose auction mechanisms and include allowance banking, multi-year compliance periods, and price-based mechanisms for cost containment. The goal of TCI is to release a straw proposal in the form of a draft MOU, as well as modeling of impacts and the costs and benefits of different program design options, by the end of 2019. The framework also details the jurisdictions' goal to release a final MOU in Spring 2020, after which each jurisdiction will decide whether to sign the final MOU and to participate in the regional program.

While existing efforts have largely focused on reducing emissions from light-duty vehicles, states and stakeholders are also exploring options to reduce emissions from medium- and heavy-duty trucks and buses. On December 12, 2019, eight states and D.C. announced their intent to collaborate in supporting zero-emission trucks and buses. In a statement of intent, the states announced their commitment to the development of a multi-state MOU to support and accelerate the deployment of zero-emission trucks and buses.⁶³ Northeast States for Coordinated Air Use Management (NESCAUM) will facilitate the process to develop the MOU and will build on the existing MOU signed by several states in 2013 to accelerate consumer adoption of light-duty zero emission passenger cars and trucks.⁶⁴ In the December 2019 statement, the states announced their intent to present a proposed MOU to the governors of the participating states and to the mayor of D.C. for consideration in the summer of 2020.

In the absence of a federal program, states can play an important role of driving additional emission reductions through increasing the stringency and breadth of existing programs as well as implementing new program designs. Thus, states will continue to explore opportunities to increase clean energy resources providing electricity to their state through both specific program mandates and market-based programs that price the externality of carbon emissions.

⁶³ Multi-State Medium- and Heavy-Duty Zero Emission Vehicle Initiative, Statement of Intent (December 12, 2019), <https://www.nescaum.org/documents/medium-and-heavy-duty-zev-statement-of-intent.pdf>. The participating states include California, Connecticut, Maine, Massachusetts, New Jersey, Oregon, Rhode Island, and Vermont, as well D.C.

⁶⁴ NESCAUM Press Release (December 12, 2019), https://www.nescaum.org/documents/nescaum-press-release_12-12-19.pdf; State Zero-Emission Vehicle Programs, MOU (October 24, 2013), <http://www.nescaum.org/documents/zev-mou-10-governors-signed-20191120.pdf>. This 2013 MOU was signed by nine states (California, Connecticut, Maryland, Massachusetts, New Jersey, New York, Oregon, Rhode Island, Vermont) and resulted in the development of the Multi-State ZEV Task Force and a ZEV Action Plan. *See*: <https://www.zevstates.us/>.

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Appendix A. Summary of State RPS and CES Programs for Electricity Procurement

State	Established	RPS Requirement (or voluntary target)	Clean Energy Standard Requirement (or voluntary target)
Arizona	2006	15% by 2025 (IOUs, retail suppliers)	
California	2002	60% by 2030 with interim targets (IOUs and most POU's and CCAs)	100% zero carbon by 2045
Colorado	2004	30% by 2020 (IOUs) and 10 to 20% for POUs and coops	
Connecticut	1998	44% by 2030 (IOUs, POU's, retail suppliers)	<i>Executive Order (2019) directs state agencies to analyze pathways and recommend strategies to achieve 100% zero carbon by 2040</i>
Delaware	2005	25% by 2026 (IOUs, POU's, retail suppliers)	
Hawaii	2001	100% by 2045 with interim targets (IOUs)	
Illinois	2007	25% by 2026 (IOUs and retail suppliers)	
Indiana	2011	<i>Voluntary: 10% by 2025</i>	
Iowa	1983	105 MW (IOUs)	
Kansas	2015	<i>Voluntary: 15% by 2020</i>	
Maine	2005	50% by 2030 (IOUs, retail suppliers)	
		<i>Goal: 100% by 2050</i>	
Maryland	2004	25% by 2020 (IOUs, POU's, retail suppliers)	
	2019	<i>Legislation directs state agencies to assess and publish recommendations regarding feasibility of 100% by 2040</i>	
Massachusetts	1997	41.7% by 2020	80% clean generation by 2050 (competitive retail suppliers)
Michigan	2008	15% by 2021	
Minnesota	2007	25 -26.5% by 2025 (IOUs and other utilities, depending on type)	
Missouri	2007	15% by 2021	

State	Established	RPS Requirement (or voluntary target)	Clean Energy Standard Requirement (or voluntary target)
		(IOUs)	
Montana	2005	15% by 2015 (IOUs, retail suppliers)	
Nevada	1997	50% by 2030 (IOUs, retail suppliers)	<i>Legislation (2019) establishes goal of 100% carbon free by 2045</i>
New Hampshire	2007	25.2% by 2025 (IOUs, coops, retail suppliers)	
New Jersey	1991	52.5% by 2030	<i>Executive Order (2019) establishes goal of 100% clean by 2050, directs state agencies to provide pathway and specific proposals to achieve</i>
New Mexico	2002	80% by 2040 (IOUs)	100% zero carbon by 2045 (public utilities)
New York	2004	70% by 2030 (IOUs, POUs, coops, retail suppliers)	100% zero emissions statewide electrical demand system by 2040
North Carolina	2007	10-12.5% by 2021 (POUs/coops and IOUs, respectively)	
North Dakota	2007	<i>Voluntary: 10% by 2015</i>	
Ohio	2008	12.5% by 2026 (IOUs, retail supplier)	
Oklahoma	2010	<i>Voluntary: 15% by 2015</i>	
Oregon	2007	50% by 2040 (utilities with 3% or more of state load); lower targets for smaller utilities	
Pennsylvania	2004	18% by 2020-2021 (IOUs and retail suppliers)	
Rhode Island	2004	38.5% by 2030 and interim targets (IOUs, retail suppliers)	
South Carolina	2014	2% by 2021 (IOUs)	
South Dakota	2008	<i>Voluntary: 10% by 2015</i>	
Texas	1999	10,000 MW by 2025 (achieved)	
Utah	2008	<i>Voluntary: 20% by 2025</i>	
Vermont	2015	75% by 2032 (IOUs, POUs, coops, retail suppliers)	
Virginia	2007	<i>Voluntary: 15% by 2025</i>	<i>Executive Order (2019) directs state agencies to develop action plan to achieve 100% carbon-free</i>

State	Established	RPS Requirement (or voluntary target)	Clean Energy Standard Requirement (or voluntary target)
			<i>by 2050 (30% of which is from renewable resources)</i>
Washington	2006	15% by 2020 (IOUs, POU, coops)	100% GHG-neutral by 2030; 100% emissions free by 2045
Wisconsin	1998	10% by 2015 (IOUs, POU, coops)	
D.C.	2005	100% by 2032 (IOUs, retail suppliers)	

Source: Bill text as noted above in this Issue Brief; National Conference of State Legislatures, “State Renewable Portfolio Standards and Goals” (updated February 2019), <http://www.ncsl.org/research/energy/renewable-portfolio-standards.aspx>.